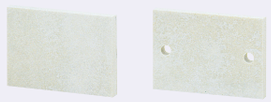
Heat Insulating Plates

Standard Grade, Heat Resistant Grade

■Standard



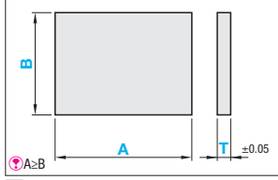
■Heat Resistant

RoHS

Type	Tolerance Selection	Dim. Tolerance of A and B	Grade	Color	Operating Ambient Temperature
HIPA	Not Specified	+1.0 0	Standard	White	Room Temp. ~ 220°C
	P	±0.3			
HIPHA	Not Specified	+1.0 0	Heat Resistance	Gray	Room Temp.~ 500°C
	P	±0.3			

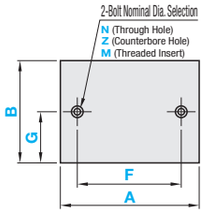
Properties and Machining Conditions P.1675

Standard

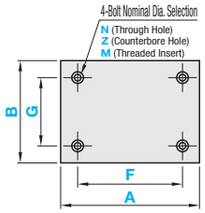


With Holes

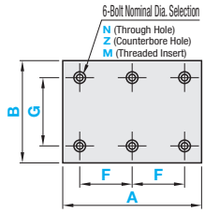
2 Holes 2H



4 Holes 4H



6 Holes 6H

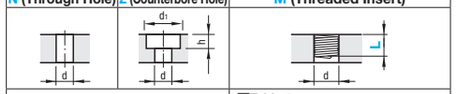


■Standard

Part Number Type	Tolerance Selection	1mm Increment A	1mm Increment B	Selection T
HIPA HIPHA	Not Specified	20~800	20~600	3 5 10 15
	P	20~200	20~200	5 10

Hole Machining Detail

N (Through Hole) Z (Counterbore Hole) M (Threaded Insert)



Bolt Nominal Dia.	3	4	5	6	8	10
d	3.5	4.5	5.5	6.5	9	11
d1	-	8	9.5	11	14	-
h	-	5	6	7	9	-

■Table 1

Bolt Nominal Dia.	3	4	5	6	8	10
d	3.5	4.5	5.5	6.5	9	11
L	3 4.5 6	4 6 8	5 7.5 10	6 9 12	8 12 -	10 15 -

Ordering Code Ex.) M4-L6

L≤T-1

For details of Threaded Insert HLTS, See P.271

When L+5<T, machined holes will be blind ones.

■With Holes

Part Number Type	Tolerance Selection	Number of Holes	1mm Increment A	1mm Increment B	Selection T	0.5mm Increment F	0.5mm Increment G	Bolt Hole Nominal Dia. Selection: Through Hole N	Counterbore Hole Z	Threaded Insert M	Threaded Insert L
HIPA HIPHA	Not Specified	2H 4H 6H	20~800	20~600	3	9~791 (2H, 4H Type) 9~395 (6H Type)	5~595 (2H) 9~591 (Other than 2H)	3 4 5 6 8 10	-	-	-
					5				-	3 4	Select from Table 1
					10				4 5 6	3 4 5 6 8	
					15				4 5 6 8	3 4 5 6 8 10	
	P		20~200	20~200	5	9~191 (2H, 4H Type) 9~95 (6H Type)	5~195 (2H) 9~191 (Other than 2H)		-	3 4	
					10				4 5 6	3 4 5 6 8	

F Dimension Range: For 2H and 4H, d(d1)+5≤F≤A-d(d1)-5; for 6H, d(d1)+5≤F≤A/2-d(d1)/2-2.5.

G Dimension Range: For 2H, d(d1)/2+2.5≤G≤B-d(d1)/2-2.5; for 4H and 6H, d(d1)+5≤G≤B-d(d1)-5.
(d for through hole and threaded insert, d1 for counterbore)

For Hole Type, select N (through hole), Z (counterbore hole), or M (threaded insert) and L (insert length).

Ordering Example

■Standard

Part Number - A - B - T

HIPA - 100 - 80 - 5
HIPAP - 200 - 100 - 10

■With Holes

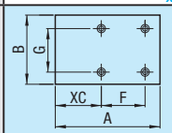
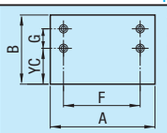
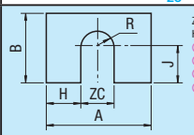
Part Number - A - B - T - F - G - Bolt Nominal Dia. - L

HIPAP2H - 80 - 40 - 10 - F50 - G20 - N3
HIPA2H - 300 - 100 - 15 - F200 - G30 - M10 - L10

Alterations

Part Number - A - B - T - F - G - Bolt Nominal Dia. - (XC, YC, ZC)

HIPA4H - 100 - 100 - 10 - F60 - G70 - Z6 - XC10
HIPA - 100 - 100 - 5 - - ZC10-H40-J50

Alterations Code	Hole Position from Left XC	Hole Position from Bottom YC	Slot Hole ZC
Spec.	 XC=1 mm Increment; 5≤XC≤786; (2H, 4H Type) d(d1)/2+2.5≤XC≤A-F-d(d1) / 2-2.5; (6H Type) d(d1)/2+2.5≤XC≤A-2F-d(d1) / 2-2.5	 YC=1mm Increment; 5≤YC≤586; d(d1)/2+2.5≤YC≤B-G-d(d1) / 2-2.5; Not applicable to 2H Type.	 ZC=5mm Increment; H, J=1mm Increment; 10≤ZC≤120; 10≤H≤A-ZC-5; 0≤J≤B-(ZC/2)-5; When Hole Type is specified, 5mm or more is required for the distance between hole and slot hole to be .

■Standard Type Unit Price (HIPA, HIPHA) The prices of HIPAP and HIPHAP are Standard Type Unit Price plus Tolerance Selection Charge.

Part Number	T	A	Unit Price HIPA Qty. 1 ~ 50 B: 20~50	51~100	101~150	151~200	201~250	251~300	301~350	351~400	401~450	451~500	501~550	551~600	Unit Price HIPHA Qty. 1 ~ 50 B: 20~50	51~100	101~150	151~200	201~250	251~300	301~350	351~400	401~450	451~500	501~550	551~600
HIPA HIPHA	3	20~50		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
		51~100			-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-
		101~150				-	-	-	-	-	-	-	-	-				-	-	-	-	-	-	-	-	-
		151~200					-	-	-	-	-	-	-	-					-	-	-	-	-	-	-	-
		201~250						-	-	-	-	-	-	-						-	-	-	-	-	-	-
		251~300							-	-	-	-	-	-							-	-	-	-	-	-
		301~350								-	-	-	-	-								-	-	-	-	-
		351~400									-	-	-	-									-	-	-	-
		401~450										-	-	-										-	-	-
		451~500											-	-											-	-
		501~550												-												-
		551~600																								
		601~650																								
		651~700																								
		701~750																								
		751~800																								
	5	20~50		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
		51~100			-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-
		101~150				-	-	-	-	-	-	-	-	-				-	-	-	-	-	-	-	-	-
		151~200					-	-	-	-	-	-	-	-					-	-	-	-	-	-	-	-
		201~250						-	-	-	-	-	-	-						-	-	-	-	-	-	-
		251~300							-	-	-	-	-	-							-	-	-	-	-	-
		301~350								-	-	-	-	-								-	-	-	-	-
		351~400									-	-	-	-									-	-	-	-
		401~450										-	-	-										-	-	-
		451~500											-	-											-	-
		501~550												-												-
		551~600																								
		601~650																								
		651~700																								
		701~750																								
		751~800																								
	10	20~50		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
		51~100			-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-
		101~150				-	-	-	-	-	-	-	-	-				-	-	-	-	-	-	-	-	-
		151~200					-	-	-	-	-	-	-	-					-	-	-	-	-	-	-	-
		201~250						-	-	-	-	-	-	-						-	-	-	-	-	-	-
		251~300							-	-	-	-	-	-							-	-	-	-	-	-
		301~350								-	-	-	-	-								-	-	-	-	-
		351~400									-	-	-	-									-	-	-	-
		401~450										-	-	-										-	-	-
		451~500											-	-											-	-
		501~550												-												-
		551~600																								
		601~650																								
		651~700																								
		701~750																								
		751~800																								
	15	20~50		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
		51~100			-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-
		101~150				-	-	-	-	-	-	-	-	-				-	-	-	-	-	-	-	-	-
		151~200					-	-	-	-	-	-	-	-					-	-	-	-	-	-	-	-
		201~250						-	-	-	-	-	-	-						-	-	-	-	-	-	-
		251~300							-	-	-	-	-	-							-	-	-	-	-	-
		301~350								-	-	-	-	-								-	-	-	-	-
		351~400									-	-	-	-									-	-	-	-
		401~450										-	-	-										-	-	-
		451~500											-	-											-	-
		501~550												-												-
		551~600																								
		601~650																								
		651~700																								
		701~750																								
		751~800																								

For orders larger than indicated quantity, please check with WOS.

■Tolerance Selection Charge

Additional Price		Unit Price B: 20~100	101~200
A	20~100		-
	101~200		

■Hole Machining Charge

With Holes	Unit Price Bolt Nominal: N (Through Hole)	Z (Counterbore Hole)	M (Threaded Insert)
2H			
4H			
6H			

The price of Hole Type is Standard Type Unit Price plus Hole Machining Charge.

(Ex.) Part Number - A - B - T - F - G - Bolt Nominal Dia.

HIPA2H - 300 - 200 - 10 - F240 - G100 - N8

(Standard Type Unit Price) + (Hole Machining Charge) = Hole Machined Type Unit Price

Heat Insulating Plates

High Strength Grade, High Temperature Resistant Grade

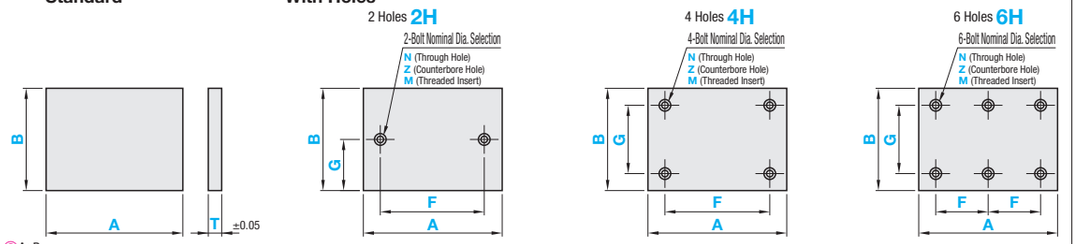
■High Strength ■High Temp. Resistant

RoHS

Type	Tolerance Selection	Dim. Tolerance of A and B	Grade	Color	Operating Ambient Temperature
HIPYA	Not Specified	+1.0 0	High Strength	Brown	Room Temp. ~ 180°C
	P	±0.3			
HIPLA	Not Specified	+1.0 0	High Temp. Resistance	White	-80°C~ 400°C
	P	±0.3			

Properties and Machining Conditions P.1675

Standard **With Holes**



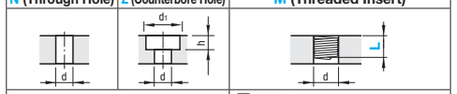
A≥B

■Standard

Part Number		1mm Increment		Selection
Type	Tolerance Selection	A	B	T
HIPYA HIPLA	Not Specified	20~800	20~600	3 5 10 15
	P	20~200	20~200	5 10

Hole Machining Detail

N (Through Hole) Z (Counterbore Hole) M (Threaded Insert)



Bolt Nominal Dia.	3	4	5	6	8	10
d	3.5	4.5	5.5	6.5	9	11
d1	-	8	9.5	11	14	-
h	-	5	6	7	9	-

■Table 1

Bolt Nominal Dia.	3	4	5	6	8	10
d	3.5	4.5	5.5	6.5	9	11
L	3 4.5 6	4 6 8	5 7.5 10	6 9 12	8 12 -	10 15 -

Ordering Code (Ex.) M4-L6

L≤T-1

For details of Threaded Insert HLTS, P.271See

When L+5<T, machined holes will be blind ones.

■With Holes

Part Number			1mm Increment		Selection	0.5mm Increment		Bolt Hole Nominal Dia. Selection			
Type	Tolerance Selection	Number of Holes	A	B	T	F	G	Through Hole	Counterbore Hole	Threaded Insert	
								N	Z	M	L
HIPYA HIPLA	Not Specified	2H 4H 6H	20~800	20~600	3	9~791 (2H, 4H Type) 9~395 (6H Type)	5~595 (2H) 9~591 (Other than 2H)	3 4 5 6 8 10	-	-	-
					5				-	3 4	Select from Table 1
					10				4 5 6	3 4 5 6 8	
					15				4 5 6 8	3 4 5 6 8 10	
	P		20~200	20~200	5	9~191 (2H, 4H Type) 9~95 (6H Type)	5~195 (2H) 9~191 (Other than 2H)		-	3 4	
					10				4 5 6	3 4 5 6 8	

F Dimension Range: For 2H and 4H, d(d1)+5≤F≤A-d(d1)-5; for 6H, d(d1)+5≤F≤A/2-d(d1)/2-2.5.

G Dimension Range: For 2H, d(d1)/2+2.5≤G≤B-d(d1)/2-2.5; for 4H and 6H, d(d1)+5≤G≤B-d(d1)-5.
(d for through hole and threaded insert, d1 for counterbore)

For Hole Type, select N (through hole), Z (counterbore hole), or M (threaded insert) and L (insert length).

Ordering Example

■Standard

Part Number - A - B - T

HIPYA - 300 - 222 - 10
HIPYAP - 200 - 100 - 5

■With Holes

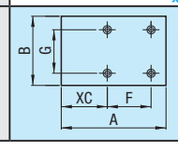
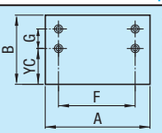
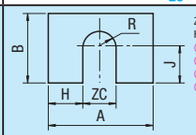
Part Number - A - B - T - F - G - Bolt Nominal Dia. - L

HIPYA2H - 200 - 170 - 15 - F100 - G70 - N8
HIPYA2H - 300 - 185 - 10 - F150 - G80 - M5 - L7.5

Alterations

Part Number - A - B - T - F - G - Bolt Nominal Dia. - (XC, YC, ZC)

HIPYA4H - 100 - 100 - 10 - F60 - G70 - Z4 - XC10
HIPYA - 100 - 100 - 5 - ZC10-H40-J50

Alterations	Hole Position from Left	Hole Position from Bottom	Slot Hole
Code	XC	YC	ZC
Spec.	 XC=1 mm Increment; 5≤XC≤786; (2H, 4H Type) d(d1)/2+2.5≤XC≤A-F-d(d1) / 2-2.5; (6H Type) d(d1)/2+2.5≤XC≤A-2F-d(d1) / 2-2.5	 YC=1mm Increment; 5≤YC≤586; d(d1)/2+2.5≤YC≤B-G-d(d1) / 2-2.5; ⊗Not applicable to 2H Type.	 ZC=5mm Increment; H, J=1mm Increment; 10≤ZC≤120; 10≤H≤A-ZC-5; 0≤J≤B-(ZC/2)-5; When Hole Type is specified, 5mm or more is required for the distance between hole and slot hole to be .

■Standard Type Unit Price (HIPYA, HIPLA) The prices of HIPYAP and HIPLAP are Standard Type Unit Price plus Torelance Selection Charge.

Part Number	T	A	Unit Price HIPYA Qty. 1 ~ 50 B												Unit Price HIPLA Qty. 1 ~ 50 B											
			20~50	51~100	101~150	151~200	201~250	251~300	301~350	351~400	401~450	451~500	501~550	551~600	20~50	51~100	101~150	151~200	201~250	251~300	301~350	351~400	401~450	451~500	501~550	551~600
HIPYA HIPLA	3	20~ 50		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
		51~100			-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-
		101~150				-	-	-	-	-	-	-	-	-				-	-	-	-	-	-	-	-	-
		151~200					-	-	-	-	-	-	-	-					-	-	-	-	-	-	-	-
		201~250						-	-	-	-	-	-	-						-	-	-	-	-	-	-
		251~300							-	-	-	-	-	-							-	-	-	-	-	-
		301~350								-	-	-	-	-								-	-	-	-	-
		351~400									-	-	-	-									-	-	-	-
		401~450										-	-	-										-	-	-
		451~500											-	-											-	-
		501~550												-												-
		551~600																								
		601~650																								
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		701~750																								
		751~800																								
	5	20~ 50		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
		51~100			-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-
		101~150				-	-	-	-	-	-	-	-	-				-	-	-	-	-	-	-	-	-
		151~200					-	-	-	-	-	-	-	-					-	-	-	-	-	-	-	-
		201~250						-	-	-	-	-	-	-						-	-	-	-	-	-	-
		251~300							-	-	-	-	-	-							-	-	-	-	-	-
		301~350								-	-	-	-	-								-	-	-	-	-
		351~400									-	-	-	-									-	-	-	-
		401~450										-	-	-										-	-	-
		451~500											-	-											-	-
		501~550												-												-
		551~600																								
		601~650																								
		651~700																								
		701~750																								
		751~800																								
	10	20~ 50		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
		51~100			-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-
		101~150				-	-	-	-	-	-	-	-	-				-	-	-	-	-	-	-	-	-
		151~200					-	-	-	-	-	-	-	-					-	-	-	-	-	-	-	-
		201~250						-	-	-	-	-	-	-						-	-	-	-	-	-	-
		251~300							-	-	-	-	-	-							-	-	-	-	-	-
		301~350								-	-	-	-	-								-	-	-	-	-
		351~400									-	-	-	-									-	-	-	-
		401~450										-	-	-										-	-	-
		451~500											-	-											-	-
		501~550												-												-
		551~600																								
		601~650																								
		651~700																								
		701~750																								
		751~800																								
	15	20~ 50		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
		51~100			-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-
		101~150				-	-	-	-	-	-	-	-	-				-	-	-	-	-	-	-	-	-
		151~200					-	-	-	-	-	-	-	-					-	-	-	-	-	-	-	-
		201~250						-	-	-	-	-	-	-						-	-	-	-	-	-	-
		251~300							-	-	-	-	-	-							-	-	-	-	-	-
		301~350								-	-	-	-	-								-	-	-	-	-
		351~400									-	-	-	-									-	-	-	-
		401~450										-	-	-										-	-	-
		451~500											-	-											-	-
		501~550												-												-
		551~600																								
		601~650																								
		651~700																								
		701~750																								
		751~800																								

■Tolerance Selection Charge

Additional Price		Unit Price B	
		20~100	101~200
A	20~100		-
	101~200		

■Hole Machining Charge

With Holes	Unit Price Bolt Nominal		
	N (Through Hole)	Z (Counterbore Hole)	M (Threaded Insert)
2H			
4H			
6H			

The price of Hole Type is Standard Type Unit Price plus Hole Machining Charge.

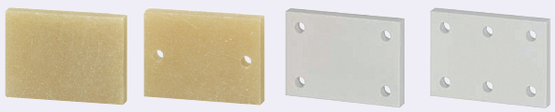
(Ex.) Part Number - A - B - T - F - G - Bolt Nominal Dia.
HIPYA4H - 300 - 200 - 10 - F240 - G160 - Z6

(Standard Type Unit Price) + (Hole Machining Charge) = Hole Machined Type Unit Price

Heat Insulating Plates

High Temperature Insulating GradeHigh Temperature Super Insulating Grade

■High Temperature Insulating ■High Temperature Super Insulating



RoHS

Type	Tolerance Selection	Dim. Tolerance of A and B	Grade	Color	Operating Ambient Temperature
HIPIA	Not Specified	+1.0 0	High Temperature Insulating	Natural Color	Room Temp. ~ 180°C
	P	±0.3			
HIPAL	Not Specified	+1.0 0	High Temperature Super Insulating	White	Room Temp. ~ 400°C
	P	±0.3			

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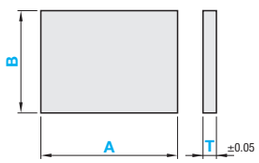
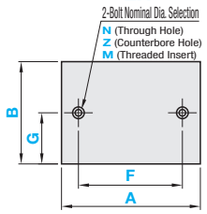
Standard



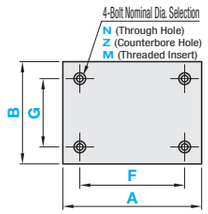
A≥B

With Holes

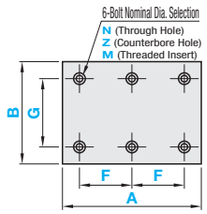
-2 Holes- 2H



-4 Holes- 4H



-6 Holes- 6H

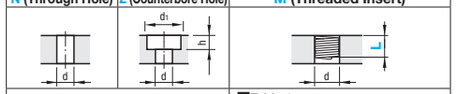


■Standard

Part Number		1mm Increment		T Selection	
Type	Tolerance Selection	A	B	HIPIA	HIPAL
HIPIA HIPAL	Not Specified	20~800	20~600	3 5 10 15	3 5 10 15
	P	20~200	20~200	5 10	5 10

Hole Machining Detail

N (Through Hole) Z (Counterbore Hole) M (Threaded Insert)



Bolt Nominal Dia.	3	4	5	6	8	10
d	3.5	4.5	5.5	6.5	9	11
d1	-	8	9.5	11	14	-
h	-	5	6	7	9	-

Table 1

Bolt Nominal Dia.	3	4	5	6	8	10
d	3.5	4.5	5.5	6.5	9	11
L	3 4.5 6	4 6 8	5 7.5 10	6 9 12	8 12 -	10 15 -

Ordering Code (Ex.) M4-L6

L≤T-1

For details of Threaded Insert HLTS,See P.271

When L+5<T, machined holes will be blind ones.

■With Holes

Part Number			1mm Increment		T Selection		0.5mm Increment		Bolt Hole Nominal Dia. Selection			
									Through Hole	Counterbore Hole	Threaded Insert	
Type	Tolerance Selection	Number of Holes	A	B	HIPIA	HIPAL	F	G	N	Z	M	L
HIPIA HIPAL	Not Specified	2H 4H 6H	20~800	20~600	3	3	9~791 (2H, 4H Type)	5~595 (2H)	3 4 5 6 8 10	-	-	-
					5	5				-	3 4	Select from Table 1
					10	10	9~395 (6H Type)	9~591 (Other than 2H)		4 5 6	3 4 5 6 8	
					15	15				4 5 6 8	3 4 5 6 8 10	
	P		20~200	20~200	5	5	9~191 (2H, 4H Type)	5~195 (2H)		-	3 4	
					10	10	9~95 (6H Type)	9~191 (Other than 2H)		4 5 6	3 4 5 6 8	

F Dimension Range: For 2H and 4H, d(d1)+5≤F≤A-d(d1)-5; for 6H, d(d1)+5≤F≤A/2-d(d1)/2-2.5.

G Dimension Range: For 2H, d(d1)/2+2.5≤G≤B-d(d1)/2-2.5; for 4H and 6H, d(d1)+5≤G≤B-d(d1)-5.
(d for through hole and threaded insert, d1 for counterbore)

For Hole Type, select N (through hole), Z (counterbore hole), or M (threaded insert) and L (insert length).

Ordering Example

■Standard

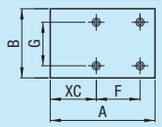
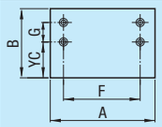
Part Number - A - B - T
HIPIA - 300 - 222 - 10
HIPALP - 200 - 100 - 5

■With Holes

Part Number - A - B - T - F - G - Bolt Nominal Dia. - L
HIPIAP2H - 200 - 170 - 10 - F100 - G70 - N8 - L7.5
HIPIA4H - 300 - 200 - 10 - F150 - G120 - M5

Alterations

Part Number - A - B - T - F - G - Bolt Nominal Dia. - (XC, YC)
HIPIA4H - 100 - 100 - 5 - F40 - G50 - N6 - XC30-YC20

Alterations Code	Hole Position from Left	Hole Position from Bottom
	XC	YC
Spec.	 XC=1 mm Increment; 5≤XC≤786; (2H, 4H Type) d(d1)/2+2.5≤XC≤A-F-d(d1)/2-2.5; (6H Type) d(d1)/2+2.5≤XC≤A-2F-d(d1)/2-2.5	 YC=1mm Increment; 5≤YC≤586; d(d1)/2+2.5≤YC≤B-G-d(d1)/2-2.5; Not applicable to 2H Type.

■Standard Type Unit Price (HIPIA, HIPAL)

The price of HIPIAP and HIPALP is found by adding the tolerance selection charge to the Standard Type unit price.

Part Number	T	A	Unit Price HIPIA Qty. 1 ~ 50 B 20~50	51~100	101~150	151~200	201~250	251~300	301~350	351~400	401~450	451~500	501~550	551~600	Unit Price HIPAL Qty. 1 ~ 20 B 20~50	51~100	101~150	151~200	201~250	251~300	301~350	351~400	401~450	451~500	501~550	551~600
HIPIA HIPAL	3	20~50		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
		51~100			-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-
		101~150				-	-	-	-	-	-	-	-	-				-	-	-	-	-	-	-	-	-
		151~200					-	-	-	-	-	-	-	-					-	-	-	-	-	-	-	-
		201~250						-	-	-	-	-	-	-						-	-	-	-	-	-	-
		251~300							-	-	-	-	-	-							-	-	-	-	-	-
		301~350								-	-	-	-	-								-	-	-	-	-
		351~400									-	-	-	-									-	-	-	-
		401~450										-	-	-										-	-	-
		451~500											-	-											-	-
		501~550												-												-
		551~600																								
		601~650																								
		651~700																								
		701~750																								
		751~800																								
	5	20~50		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
		51~100			-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-
		101~150				-	-	-	-	-	-	-	-	-				-	-	-	-	-	-	-	-	-
		151~200					-	-	-	-	-	-	-	-					-	-	-	-	-	-	-	-
		201~250						-	-	-	-	-	-	-						-	-	-	-	-	-	-
		251~300							-	-	-	-	-	-							-	-	-	-	-	-
		301~350								-	-	-	-	-								-	-	-	-	-
		351~400									-	-	-	-									-	-	-	-
		401~450										-	-	-										-	-	-
		451~500											-	-											-	-
		501~550												-												-
		551~600																								
		601~650																								
		651~700																								
		701~750																								
		751~800																								
	10	20~50		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
		51~100			-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-
		101~150				-	-	-	-	-	-	-	-	-				-	-	-	-	-	-	-	-	-
		151~200					-	-	-	-	-	-	-	-					-	-	-	-	-	-	-	-
		201~250						-	-	-	-	-	-	-						-	-	-	-	-	-	-
		251~300							-	-	-	-	-	-							-	-	-	-	-	-
		301~350								-	-	-	-	-								-	-	-	-	-
		351~400									-	-	-	-									-	-	-	-
		401~450										-	-	-										-	-	-
		451~500											-	-											-	-
		501~550												-												-
		551~600																								
		601~650																								
		651~700																								
		701~750																								
		751~800																								
	15	20~50		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
		51~100			-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-
		101~150				-	-	-	-	-	-	-	-	-				-	-	-	-	-	-	-	-	-
		151~200					-	-	-	-	-	-	-	-					-	-	-	-	-	-	-	-
		201~250						-	-	-	-	-	-	-						-	-	-	-	-	-	-
		251~300							-	-	-	-	-	-							-	-	-	-	-	-
		301~350								-	-	-	-	-								-	-	-	-	-
		351~400									-	-	-	-									-	-	-	-
		401~450										-	-	-										-	-	-
		451~500											-	-											-	-
		501~550												-												-
		551~600																								
		601~650																								
		651~700																								
		701~750																								
		751~800																								

■Tolerance Selection Charge

Additional Price		Unit Price B 20~100	101~200
A	20~100		-
	101~200		

■Hole Machining Charge

With Holes	Unit Price Bolt Nominal N (Through Hole)	Z (Counterbore Hole)	M (Threaded Insert)
2H			
4H			
6H			

The price of Hole Type is Standard Type Unit Price plus Hole Machining Charge.

(Ex.) Part Number - A - B - T - F - G - Bolt Nominal Dia.
HIPIA4H - 300 - 200 - 10 - F240 - G160 - Z6

(Standard Type Unit Price) + (Hole Machining Charge) = Hole Machined Type Unit Price

Heat Insulating Plates

High Temperature Insulating Grade

Type	Tolerance Selection	Dim. Tolerance of A and B	Color	Operating Ambient Temperature
HRMB	Not Specified	+1.0 / 0	White	Room Temp. ~ 1000°C
	P	±0.3		

RoHS

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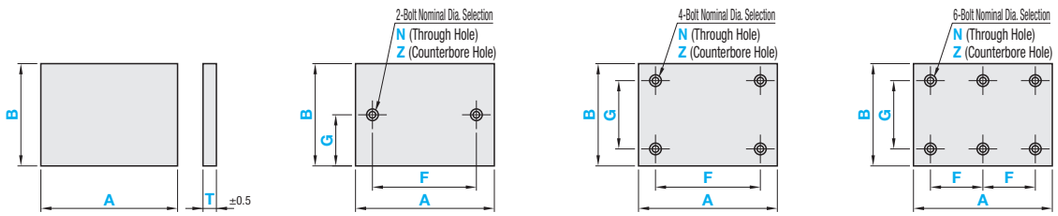
Standard **With Holes**

2 Holes **2H** 4 Holes **4H** 6 Holes **6H**



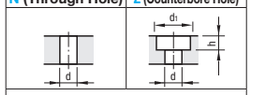
A≥B

Standard

Part Number Type	Tolerance Selection	1mm Increment A	1mm Increment B	Selection T
HRMB	Not Specified	20~800	20~600	12.7 19.1 25.4
	P			

Hole Machining Detail

N (Through Hole) Z (Counterbore Hole)



Bolt Nominal Dia.	3	4	5	6	8	10
d	3.5	4.5	5.5	6.5	9	11
d1	-	8	9.5	11	14	-
h	-	5	6	7	9	-

With Holes

Part Number Type	Tolerance Selection	Number of Holes	1mm Increment A	1mm Increment B	Selection T	0.5mm Increment F	0.5mm Increment G	Bolt Hole Nominal Dia. Selection Through Hole N	Bolt Hole Nominal Dia. Selection Counterbore Hole Z
HRMB	Not Specified	2H 4H 6H	20~800	20~600	12.7	9~791 (2H, 4H Type) 9~395 (6H Type)	5~595 (2H) 9~591 (Other than 2H)	3 4 5 6 8 10	4 5 6
					19.1				4 5 6 8
					25.4				4 5 6 8
	P		20~200	20~200	12.7	9~191 (2H, 4H Type) 9~95 (6H Type)	5~195 (2H) 9~191 (Other than 2H)		4 5 6
					19.1				4 5 6 8
					25.4				4 5 6 8

F Dimension Range: For 2H and 4H, $d(d_1)+5 \le F \le A-d(d_1)-5$; for 6H, $d(d_1)+5 \le F \le A/2-d(d_1)/2-2.5$.
G Dimension Range: For 2H, $d(d_1)/2+2.5 \le G \le B-d(d_1)/2-2.5$; for 4H and 6H, $d(d_1)+5 \le G \le B-d(d_1)-5$.
(d is for Through Hole. d_1 is for Counterbore.)
For Hole type, select from N (through hole), Z (Counterbore).

Ordering Example

Standard

Part Number - A - B - T

HRMB - 300 - 222 - 12.7
HRMBP - 200 - 100 - 19.1

With Holes

Part Number - A - B - T - F - G - Bolt Nominal Dia.

HRMB2H - 200 - 170 - 12.7 - F100 - G70 - N8
HRMBP4H - 200 - 150 - 12.7 - F150 - G120 - Z5

Standard Type Unit Price (HRMB)

Same price for HRMBP.

Unit Price HRMB, HRMBP Qty. 1 ~ 50

Part Number	T	A	B 20~50	B 51~100	B 101~150	B 151~200	B 201~250	B 251~300	B 301~350	B 351~400	B 401~450	B 451~500	B 501~550	B 551~600
HRMB HRMBP	12.7	20~50		-	-	-	-	-	-	-	-	-	-	-
		51~100			-	-	-	-	-	-	-	-	-	-
		101~150				-	-	-	-	-	-	-	-	-
		151~200					-	-	-	-	-	-	-	-
		201~250						-	-	-	-	-	-	-
		251~300							-	-	-	-	-	-
		301~350								-	-	-	-	-
		351~400									-	-	-	-
		401~450										-	-	-
		451~500											-	-
		501~550												-
		551~600												
		601~650												
		651~700												
		701~750												
		751~800												
	19.1	20~50		-	-	-	-	-	-	-	-	-	-	-
		51~100			-	-	-	-	-	-	-	-	-	-
		101~150				-	-	-	-	-	-	-	-	-
		151~200					-	-	-	-	-	-	-	-
		201~250						-	-	-	-	-	-	-
		251~300							-	-	-	-	-	-
		301~350								-	-	-	-	-
		351~400									-	-	-	-
		401~450										-	-	-
		451~500											-	-
		501~550												-
		551~600												
		601~650												
		651~700												
		701~750												
		751~800												
	25.4	20~50		-	-	-	-	-	-	-	-	-	-	-
		51~100			-	-	-	-	-	-	-	-	-	-
		101~150				-	-	-	-	-	-	-	-	-
		151~200					-	-	-	-	-	-	-	-
		201~250						-	-	-	-	-	-	-
		251~300							-	-	-	-	-	-
		301~350								-	-	-	-	-
		351~400									-	-	-	-
		401~450										-	-	-
		451~500											-	-
		501~550												-
		551~600												
		601~650												
		651~700												
		701~750												
		751~800												

Hole Machining Charge

With Holes	Unit Price Bolt Nominal N (Through Hole)	Unit Price Bolt Nominal Z (Counterbore Hole)
2H		
4H		
6H		

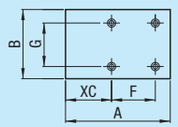
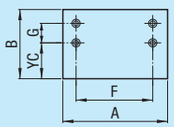
The price of Hole Type is Standard Type Unit Price plus Hole Machining Charge.

(Ex.) Part Number - A - B - T - F - G - Bolt Nominal Dia.
HRMB4H - 300 - 200 - 12.7 - F240 - G160 - Z6

(Standard Type Unit Price) + (Hole Machining Charge) = Hole Machined Type Unit Price

Alterations

Part Number - A - B - T - F - G - Bolt Nominal Dia. - (XC, YC)
HRMBP4H - 100 - 100 - 19.1 - F40 - G50 - N6 - XC30-YC20

	Hole Position from Left	Hole Position from Bottom
Alterations		
Code	XC	YC
Spec.	XC=1 mm Increment 5≤XC≤786 (2H, 4H Type) $d(d_1)/2+2.5 \le XC \le A-F-d(d_1)/2-2.5$ (6H Type) $d(d_1)/2+2.5 \le XC \le A-2F-d(d_1)/2-2.5$	YC=1mm Increment 5≤YC≤586 $d(d_1)/2+2.5 \le YC \le B-G-d(d_1)/2-2.5$ Not applicable to 2H Type.

Heat Insulating Plates, Heat Insulating Paper

Free Cutting Grade, Thermal Plates

■Free Cutting Grade

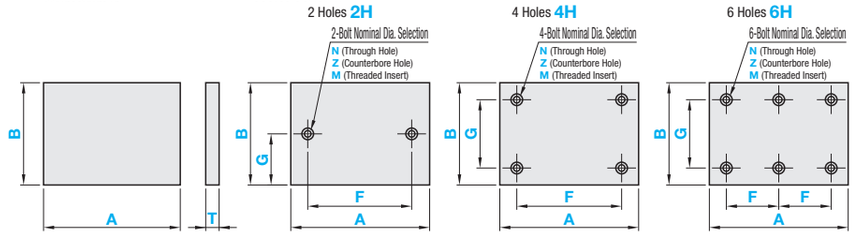
■Thermal Plates

Type	Grade	Color	Operating Ambient Temperature
HIPMA	Free-cutting	White Gray	Room Temp. ~ 300°C
HIPCA	Thermal	White	Room Temp. ~ 350°C

RoHS

Properties and Machining Conditions P.1675

Standard **With Holes**



A≥B

■Standard

Part Number Type	1mm Increment A	1mm Increment B	Selection T
HIPMA HIPCA	20~800	20~600	5 10 15

■Precision Standards

•T Dimension Tolerance

(HIPMA) T:±0.5

(HIPCA)

T	5	10	15
	±0.8	±1.0	±1.3

•Dimension Tolerance of A and B

(HIPMA) A, B: +1.0 / 0

(HIPCA)

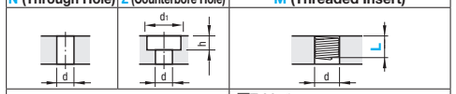
A, B	~499mm	500~
	+1.0 / 0	+2.0 / 0

■Rate of Camber and Torsion (HIPCA)

T Dimension	Rate of Camber and Torsion per 1000mm
5, 10	1.3% or Less
15	0.65% or Less

Hole Machining Detail

N (Through Hole) Z (Counterbore Hole) M (Threaded Insert)



Bolt Nominal Dia.	3	4	5	6	8	10
d	3.5	4.5	5.5	6.5	9	11
d1	-	8	9.5	11	14	-
h	-	5	6	7	9	-

■Table 1

Bolt Nominal Dia.	3	4	5	6	8	10
d	3.5	4.5	5.5	6.5	9	11
L	3 4.5 6	4 6 8	5 7.5 10	6 9 12	8 12 -	10 15 -

Ordering Code Ex.) M4-L6

L≤T-1

For details of Threaded Insert HLTS, See P.271

When L+5<T, machined holes will be blind ones.

■With Holes

Part Number Type	Number of Holes	1mm Increment A	1mm Increment B	Selection T	0.5mm Increment F	0.5mm Increment G	Bolt Hole Nominal Dia. Selection: Through Hole N	Counterbore Hole Z	Threaded Insert M	L
HIPMA	2H 4H 6H	20~800	20~600	5	9~791 (2H, 4H Type)	5~595 (2H Type)	3 4 5 6 8 10	-	3 4	Select from Table 1
				10	9~395 (6H Type)	9~591 (4H, 6H Type)		-	3 4 5 6 8	
				15				4 5 6	3 4 5 6 8 10	
HIPCA				5	9~786 (2H, 4H Type)	7~593 (2H Type)		-	-	-
				10	9~391 (6H Type)	9~591 (4H, 6H Type)		4 5 6		
				15				4 5 6 8		

Threaded insert machining is not applicable to HIPCA.

F Dimension Range: For 2H and 4H, $d(d_1)+5 \le F \le A-d(d_1)-5$; for 6H, $d(d_1)+5 \le F \le A/2-d(d_1)/2-2.5$.

G Dimension Range: For 2H, $d(d_1)/2+2.5 \le G \le B-d(d_1)/2-2.5$; for 4H and 6H, $d(d_1)+5 \le G \le B-d(d_1)-5$.
(d for through hole and threaded insert, d_1 for counterbore)

For Hole Type, select N (through hole), Z (counterbore hole), or M (threaded insert) and L (insert length).

When machined hole of Threaded Insert Type goes through, the hole periphery may peel.

Ordering Example

■Standard

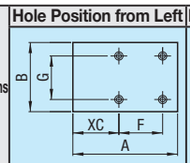
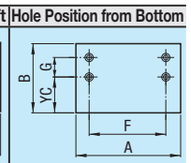
Part Number - A - B - T
HIPMA - 300 - 222 - 10

■With Holes

Part Number - A - B - T - F - G - Bolt Nominal Dia. - L
HIPCA2H - 200 - 170 - 10 - F100 - G70 - N8
HIPMA2H - 200 - 150 - 5 - F100 - G75 - M4 - L4

Alterations

Part Number - A - B - T - F - G - Bolt Nominal Dia. - (XC, YC)
HIPCA2H - 100 - 100 - 5 - F40 - G50 - N6 - XC30

Alterations	Hole Position from Left	Hole Position from Bottom
		
Code	XC	YC
Spec.	XC=1 mm Increment 5≤XC≤786 (2H, 4H Type) d(d1)/2+2.5≤XC≤A-F-d(d1)/2-2.5 (6H Type) d(d1)/2+2.5≤XC≤A-2F-d(d1)/2-2.5	YC=1mm Increment 5≤YC≤586 d(d1)/2+2.5≤YC≤B-G-d(d1)/2-2.5 Not applicable to 2H Type.

■Standard Type Unit Price (HIPMA, HIPCA)

T	A	Unit Price HIPMA Qty. 1 ~ 50 B: 20~50	51~100	101~150	151~200	201~250	251~300	301~350	351~400	401~450	451~500	501~550	551~600
5	20~ 50		-	-	-	-	-	-	-	-	-	-	-
	51~100			-	-	-	-	-	-	-	-	-	-
	101~150				-	-	-	-	-	-	-	-	-
	151~200					-	-	-	-	-	-	-	-
	201~250						-	-	-	-	-	-	-
	251~300							-	-	-	-	-	-
	301~350								-	-	-	-	-
	351~400									-	-	-	-
	401~450										-	-	-
	451~500											-	-
	501~550												-
	551~600												
	601~650												
	651~700												
	701~750												
	751~800												
10	20~ 50		-	-	-	-	-	-	-	-	-	-	-
	51~100			-	-	-	-	-	-	-	-	-	-
	101~150				-	-	-	-	-	-	-	-	-
	151~200					-	-	-	-	-	-	-	-
	201~250						-	-	-	-	-	-	-
	251~300							-	-	-	-	-	-
	301~350								-	-	-	-	-
	351~400									-	-	-	-
	401~450										-	-	-
	451~500											-	-
	501~550												-
	551~600												
	601~650												
	651~700												
	701~750												
	751~800												
15	20~ 50		-	-	-	-	-	-	-	-	-	-	-
	51~100			-	-	-	-	-	-	-	-	-	-
	101~150				-	-	-	-	-	-	-	-	-
	151~200					-	-	-	-	-	-	-	-
	201~250						-	-	-	-	-	-	-
	251~300							-	-	-	-	-	-
	301~350								-	-	-	-	-
	351~400									-	-	-	-
	401~450										-	-	-
	451~500											-	-
	501~550												-
	551~600												
	601~650												
	651~700												
	701~750												
	751~800												

T	A	Unit Price HIPCA Qty. 1 ~ 50 B: 20~50	51~100	101~150	151~200	201~250	251~300	301~350	351~400	401~450	451~500	501~550	551~600
5	20~ 50		-	-	-	-	-	-	-	-	-	-	-
	51~100			-	-	-	-	-	-	-	-	-	-
	101~150				-	-	-	-	-	-	-	-	-
	151~200					-	-	-	-	-	-	-	-
	201~250						-	-	-	-	-	-	-
	251~300							-	-	-	-	-	-
	301~350								-	-	-	-	-
	351~400									-	-	-	-
	401~450										-	-	-
	451~500											-	-
	501~550												-
	551~600												
	601~650												
	651~700												
	701~750												
	751~800												
10	20~ 50		-	-	-	-	-	-	-	-	-	-	-
	51~100			-	-	-	-	-	-	-	-	-	-
	101~150				-	-	-	-	-	-	-	-	-
	151~200					-	-	-	-	-	-	-	-
	201~250						-	-	-	-	-	-	-
	251~300							-	-	-	-	-	-
	301~350								-	-	-	-	-
	351~400									-	-	-	-
	401~450										-	-	-
	451~500											-	-
	501~550												-
	551~600												
	601~650												
	651~700												
	701~750												
	751~800												
15	20~ 50		-	-	-	-	-	-	-	-	-	-	-
	51~100			-	-	-	-	-	-	-	-	-	-
	101~150				-	-	-	-	-	-	-	-	-
	151~200					-	-	-	-	-	-	-	-
	201~250						-	-	-	-	-	-	-
	251~300							-	-	-	-	-	-
	301~350								-	-	-	-	-
	351~400									-	-	-	-
	401~450										-	-	-
	451~500											-	-
	501~550												-
	551~600												
	601~650												
	651~700												
	701~750												
	751~800												

■Hole Machining Charge

With Holes	Unit Price Bolt Nominal: N (Through Hole)	Z (Counterbore Hole)	M (Threaded Insert)
2H			
4H			
6H			

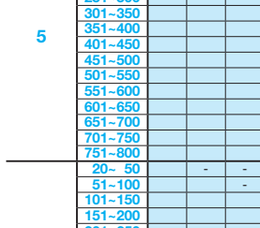
The price of Hole Type is Standard Type Unit Price plus Hole Machining Charge.

(Ex.) Part Number - A - B - T - F - G - Bolt Nominal Dia.
HIPMA4H - 300 - 200 - 10 - F240 - G160 - Z6

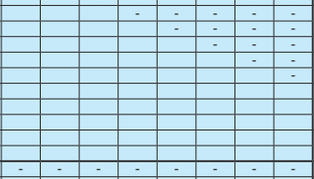
(Standard Type Unit Price) + (Hole Machining Charge) = Hole Machined Type Unit Price

■Insulating Paper

RoHS



HIFP



Ambient Operating Temperature up to 1300°C

M Material: Ceramic Fiber

Part Number Type	Selection T	A	B	Unit Price B100	B200	B400	B600
HIFP	1	100	100 200 400 600				
		400					
		800					
	2	100					
		400					
		800					
	3	100					
		400					
		800					

Ordering Example

Part Number - A - B
HIFP3 - 100 - 400

■Features

Insulating paper product made from Ceramic Fiber has excellent flexibility and can be bent when used. Can be cut with scissors or a utility knife.

■Tolerance

T Dimension 1	2	3	A Dimension 4	B Dimension 4
±0.15	±0.25	±0.30	-2	-2

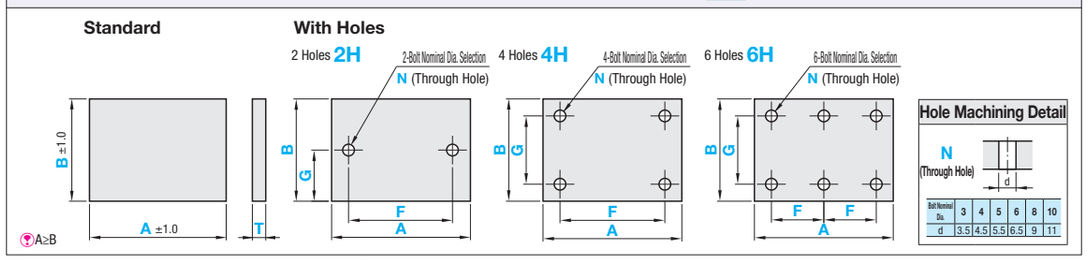
■Properties

Density (kg/m³)		250
Maximum Operating Temperature (°C)		1300
Thermal Conductivity (W/m·K) {kcal/m·h·°C}	400°C	0.07 {0.06}
	600°C	0.09 {0.08}
	800°C	0.13 {0.11}
	1000°C	0.16 {0.14}
Tensile Strength (N/25mm) T	1mm	14.7 or More
	2mm	29.4 or More
	3mm	44.1 or More

High Temperature Insulation Sheets

Type	Grade	Color	Operating Ambient Temperature
HIPYKH	High Strength	Brown	Room Temp. ~ 180°C
HIPLKH	High Temp. Resistant	White	-80°C ~ 400°C
HIPSKH	Thin, Heat Resistant	Gray	Room Temp. ~ 800°C

RoHS



Bolt Nominal Dia.	3	4	5	6	8	10
d	3.5	4.5	5.5	6.5	9	11

Standard

Part Number	1mm Increment		Selection
Type	A	B	T
HIPYKH HIPLKH	20~500	20~500	1 2
HIPSKH			1.5 2

With Holes

Part Number		1mm Increment		Selection	0.5mm Increment		Bolt Hole Nominal Dia. Selection
Type	Number of Holes	A	B	T	F	G	N (Through Hole)
HIPYKH HIPLKH	2H 4H 6H	20~500	20~500	1 2	9~491 (2H, 4H Type) 9~245 (6H Type)	5~495 (2H Type) 9~491 (4H, 6H Type)	3 4 5 6 8 10
HIPSKH				1.5 2			

F Dimension Range: For 2H and 4H, d+5≤F≤A-d-5; for 6H, d+5≤F≤A/2-d/2-2.5.
G Dimension Range: For 2H, d/2+2.5≤G≤B-d/2-2.5; for 4H and 6H, d+5≤G≤B-d-5.

Characteristics of HIPSKH

Overview: Inorganic mineral, Fiber, Filler and Binding Agent are main materials. Dried after paper making formation.

Item	Unit	Characteristic Value
Density	kg/m³	900
Tensile Strength	N/mm²	2.45
Compression Rate (6.86MPa)	%	20
Recovery Rate (6.86MPa)	%	35
Thermal Conductivity	W/(m·K) {cal/cm·sec·°C}	0.11 {0.26x10⁻³}

Handle with care as the material is fragile. The above values are references only.
Characteristics of HIPYKH and HIPLKH P.1675

Precision Standards

• T Dimension Tolerance (HIPYKH, HIPLKH)

T	1.0	2.0
	±0.15	±0.25

(HIPSKH)
T:±0.20

Hole Machining Charge

With Holes	Unit Price Bolt Nominal N (Through Hole)
2H	
4H	
6H	

Standard Type Unit Price (HIPYKH, HIPLKH, HIPSKH)

T	A	Unit Price HIPYKH Qty. 1 ~ 50									
		B20~50	B51~100	B101~150	B151~200	B201~250	B251~300	B301~350	B351~400	B401~450	B451~500
1	20~ 50		-	-	-	-	-	-	-	-	-
	51~100			-	-	-	-	-	-	-	-
	101~150				-	-	-	-	-	-	-
	151~200					-	-	-	-	-	-
	201~250						-	-	-	-	-
	251~300							-	-	-	-
	301~350								-	-	-
	351~400									-	-
	401~450										-
	451~500										
2	20~ 50		-	-	-	-	-	-	-	-	-
	51~100			-	-	-	-	-	-	-	-
	101~150				-	-	-	-	-	-	-
	151~200					-	-	-	-	-	-
	201~250						-	-	-	-	-
	251~300							-	-	-	-
	301~350								-	-	-
	351~400									-	-
	401~450										-
	451~500										

For orders larger than indicated quantity, please check with WOS.

Ordering Example

Standard

Part Number - A - B - T
HIPYKH - 300 - 200 - 1

With Holes

Part Number - A - B - T - F - G - Bolt Nominal Dia.
HIPLKH2H - 300 - 200 - 2 - F50 - G50 - N4

The price of Hole Type is Standard Type Unit Price plus Hole Machining Charge.

(Ex.) Part Number - A - B - T - F - G - Bolt Nominal Dia.
HIPLKH2H - 300 - 200 - 2 - F50 - G50 - N4
(Standard Type Unit Price) + (Hole Machining Charge) = Hole Machined Type Unit Price

T	A	Unit Price HIPLKH Qty. 1 ~ 50									
		B20~50	B51~100	B101~150	B151~200	B201~250	B251~300	B301~350	B351~400	B401~450	B451~500
1	20~ 50		-	-	-	-	-	-	-	-	-
	51~100			-	-	-	-	-	-	-	-
	101~150				-	-	-	-	-	-	-
	151~200					-	-	-	-	-	-
	201~250						-	-	-	-	-
	251~300							-	-	-	-
	301~350								-	-	-
	351~400									-	-
	401~450										-
	451~500										
2	20~ 50		-	-	-	-	-	-	-	-	-
	51~100			-	-	-	-	-	-	-	-
	101~150				-	-	-	-	-	-	-
	151~200					-	-	-	-	-	-
	201~250						-	-	-	-	-
	251~300							-	-	-	-
	301~350								-	-	-
	351~400									-	-
	401~450										-
	451~500										

For orders larger than indicated quantity, please check with WOS.

T	A	Unit Price HIPSKH Qty. 1 ~ 20									
		B20~50	B51~100	B101~150	B151~200	B201~250	B251~300	B301~350	B351~400	B401~450	B451~500
1.5	20~ 50		-	-	-	-	-	-	-	-	-
	51~100			-	-	-	-	-	-	-	-
	101~150				-	-	-	-	-	-	-
	151~200					-	-	-	-	-	-
	201~250						-	-	-	-	-
	251~300							-	-	-	-
	301~350								-	-	-
	351~400									-	-
	401~450										-
	451~500										
2	20~ 50		-	-	-	-	-	-	-	-	-
	51~100			-	-	-	-	-	-	-	-
	101~150				-	-	-	-	-	-	-
	151~200					-	-	-	-	-	-
	201~250						-	-	-	-	-
	251~300							-	-	-	-
	301~350								-	-	-
	351~400									-	-
	401~450										-
	451~500										

For orders larger than indicated quantity, please check with WOS.

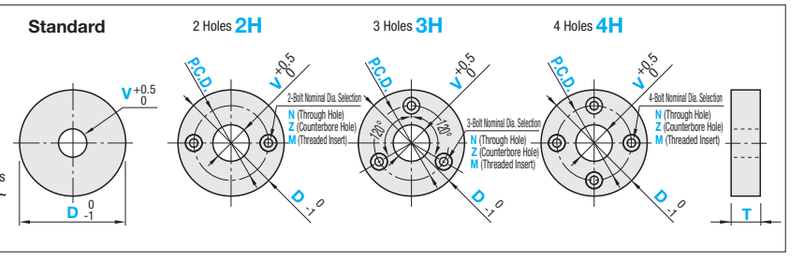
Heat Insulating Plates

Circular Type

RoHS

ENJHP
ENJHH
ENJHY
ENJHL
ENJHA

Properties
P.1675~



Standard

Part Number			1mm Increment	
Type	T	T Tolerance	D	V
ENJHP (Standard Grade)	5 10 15	±0.05	50~400	0~50 (V≤D-10)
ENJHH (Heat Resistant Grade)	5 10 15	±0.05		
ENJHY (High Strength Grade)	5 10 15	±0.05		
ENJHL (High Temperature Resistant Grade)	5 10 15	±0.05		
ENJHA (High Temperature Insulating Grade)	3 5 10	±0.05		

Hole Machining Detail

N (Through Hole) | Z (Counterbore Hole) | M (Threaded Insert)

Bolt Nominal Dia.	3	4	5	6	8	10
d	3.5	4.5	5.5	6.5	9	11
d₁	6.5	8	9.5	11	14	-
h	4	5	6	7	9	-

Table 1

Bolt Nominal Dia.	3	4	5	6	8
d	3.5	4.5	5.5	6.5	9
L	3 4.5 6	4 6 8	5 7.5 10	6 9 12	8 12 -

Ordering Code Ex.) M4-L6
L≤T-1
For details of Threaded Insert HLTS, See P.271

When L+5<T, machined holes will be blind ones.

With Holes

Part Number			1mm Increment			Bolt Hole Nominal Dia. Selection			
Type	Number of Holes	T	D	V	P.C.D.	Through Hole	Counterbore Hole	Threaded Insert	
						N	Z	M	L
ENJHP (T≥5) ENJHH (T≥5) ENJHY (T≥5) ENJHL (T≥5) ENJHA (T≤10)	2H 3H 4H	3	50~400	0~50 (V≤D-10)	20~390*	3 4 5 6 8 10	-	-	-
		5						3 4	Select from Table 1
		10					4 5 6	3 4 5 6	
		15					4 5 6 8	3 4 5 6 8	

For Hole Type, select N (through hole), Z (counterbore hole), or M (threaded insert) and L (insert length).
* P.C.D. V+5+d(d₁)≤P.C.D.≤D-5-d(d₁) (d for through holes and thread insert; d₁ for counterbore and countersink)

Ordering Example

Standard

Part Number - D - V
ENJHP5 - 300 - 50

With Holes

Part Number - D - V - P.C.D. - Bolt Nominal Dia. - L
ENJHP2H5 - 300 - 50 - 80 - N3
ENJHP2H5 - 300 - 50 - 80 - M3 - L3

Hole Machining Charge

With Holes	Unit Price Bolt Nominal		
	N (Through Hole)	Z (Counterbore Hole)	M (Threaded Insert)
2H			
3H			
4H			

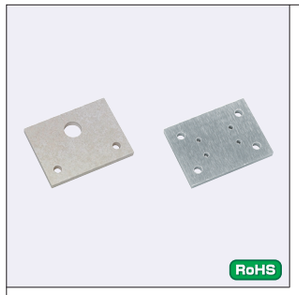
The price of Hole Type is Standard Type Unit Price plus Hole Machining Charge.

(Ex.) Part Number - D - V - P.C.D. - Bolt Nominal Dia. - L
ENJHP2H10 - 350 - 50 - 200 - M5 - 7.5

(Standard Type Unit Price) + (Hole Machining Charge) = Hole Machined Type Unit Price

Part Number		Unit Price						
Type	T	D50~100	D101~150	D151~200	D201~250	D251~300	D301~350	D351~400
ENJHP (Standard Grade)	5							
	10							
	15							
ENJHH (Heat Resistant Grade)	5							
	10							
	15							
ENJHY (High Strength Grade)	5							
	10							
	15							
ENJHL (High Temperature Resistant Grade)	5							
	10							
	15							
ENJHA (High Temperature Insulating Grade)	3							
	5							
	10							

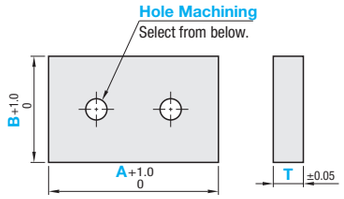
Machined Resin Plates



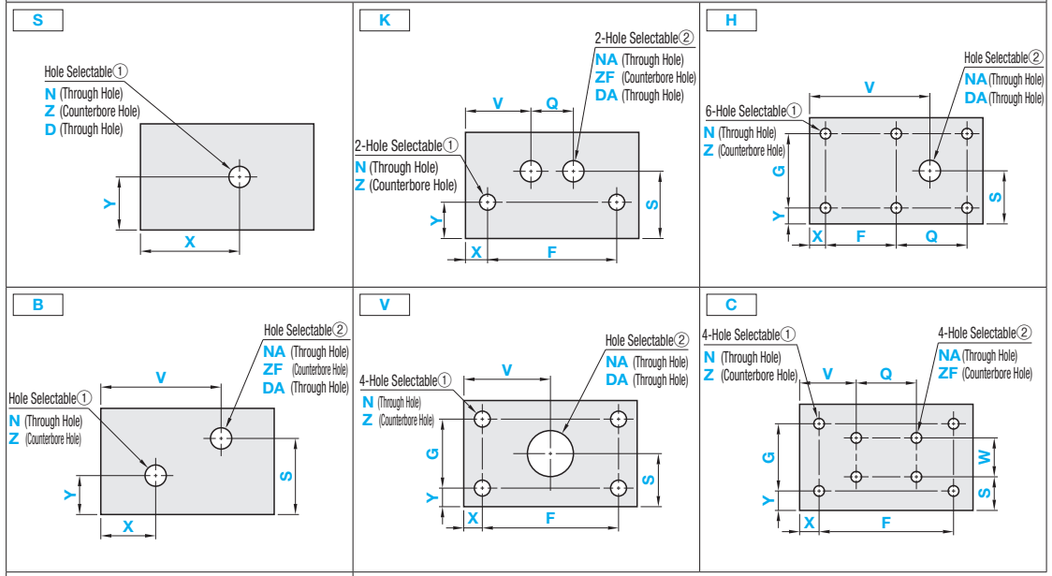
Type	Grade	Color	Operating Ambient Temperature	Dimension Tolerance of A and B	T Dimension Tolerance
KJLHP	Standard	White Gray	Room Temp. ~ 220°C	+1.0 / 0	±0.05
KJLHH	Heat Resistant	Gray	Room Temp. ~ 500°C		±0.05
KJLHL	High Temp. Resistant	White	Room Temp. ~ 400°C		±0.05

Material and Characteristic Value See P.1675

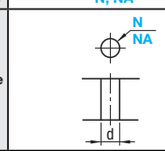
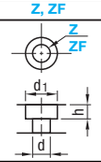
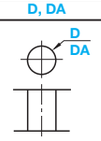
A≥B



Hole Machining Selection



Hole Selection

Hole Type	Through Hole	Counterbore Hole	Through Hole
Code	N, NA	Z, ZF	D, DA
Shape			
Machining Specifications			3~30

Dimension	Nominal Dia. 3	4	5	6	8	10
d	3.5	4.5	5.5	6.5	9	11

Bolt Nominal Dia.	4	5	6	8
d	4.5	5.5	6.5	9
d_1	8	9.5	11	14
h	5	6	7	9

Part Number Type	Hole Machining Selection	T Selection	A 1mm Increment	B 1mm Increment	X Y F G V Q S W	Hole Selectable① Nominal Dia. N Selection	Z Selection	D 0.5mm Increment	Hole Selectable② Nominal Dia. NA Selection	ZF Selection	DA 0.5mm Increment
KJLHP KJLHH KJLHL	S B J K V H C	3	20~300	20~200	1mm Increment	3 4 5 6 8 10	-	3~30	3 4 5 6 8 10	-	3~30
		5					-			-	
		10					4 5 6			4 5 6	
		15					4 5 6 8			4 5 6 8	

Ordering Example

Part Number	-	A	-	B	-	X	-	Y	-	F	-	G	-	V	-	Q	-	S	-	W	-	Hole Selectable① Code, Nominal	-	Hole Selectable② Code, Nominal
Type / Hole Machining / T																								
KJLHP V 10	-	A140	-	B80	-	X15	-	Y10	-	F110	-	G60	-	V70			-	S40			-	Z6	-	DA24

Hole Machining Charge

Hole Machining Type	S	B	J	K	V	H	C
Additional Price							

The price is the main body price plus the hole machining charge.

Body Price

Type	A / B / T	Unit Price Qty. 1 ~ 20: 20~50	51~100		101~150			151~200				201~250				251~300			
	B	20 ~ 50	20 ~ 50	51 ~ 100	20 ~ 50	51 ~ 100	101 ~ 150	20 ~ 50	51 ~ 100	101 ~ 150	151 ~ 200	20 ~ 50	51 ~ 100	101 ~ 150	151 ~ 200	20 ~ 50	51 ~ 100	101 ~ 150	151 ~ 200
KJLHP	3																		
	5																		
	10																		
	15																		
KJLHH	3																		
	5																		
	10																		
	15																		
KJLHL	3																		
	5																		
	10																		
	15																		

Alterations

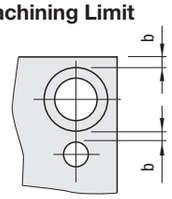
Part Number	-	A	-	B	-	X	-	Y	-	F	-	G	-	V	-	Q	-	S	-	W	-	Hole Selectable① Code, Nominal	-	Hole Selectable② Code, Nominal
Type / Hole Machining / T																								
KJLHP V 10	-	A140	-	B80	-	X15	-	Y10	-	F110	-	G60	-	V70			-	S40			-	Z6	-	DAC42

Alterations	Code	Spec.
D Hole Dia.	DC DAC	Changes the diameter of D hole. DC, DAC=1 mm Increment Ordering Code Specify dimension D(DA) as DC(DAC). (Ex.) D=40···DC40 31≤DC≤80 31≤DAC≤80

Machining Dimension Tolerance

Type	Dimension Tolerance of A and B	T Dimension Tolerance
KJLHP	+1.0 / 0	±0.05
KJLHH		
KJLHL		

Machining Limit



Through Hole Diameter (Counterbore Hole Diameter)	b (Minimum Value)
3~10	2.5