



Heat Insulating Plates

Free-Cutting Grade / Thermal Plates

Heat Insulating Plates – Free Cutting Grade



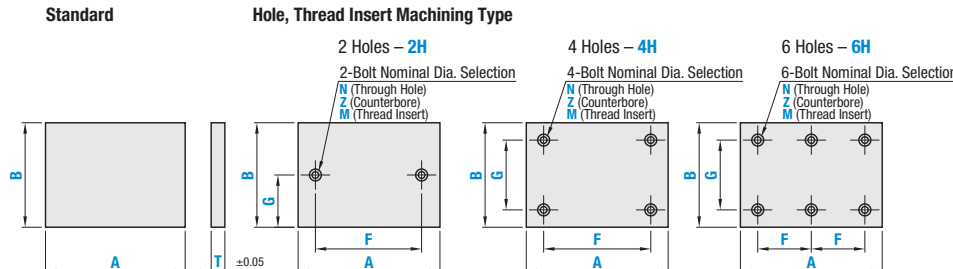
Heat Insulating Plates – Thermal Plates



Type	Grade	Color	Operating Ambient Temperature
HIPMA	Free-Cutting	White Gray	Room Temperature ~300°C
HIPCA	Heat-Retention	White	Room Temperature ~350°C

Ⓢ Properties and Machining Conditions P.3779.

Standard Hole, Thread Insert Machining Type



Standard

Part Number	1 mm Increment		T
Type	A	B	
HIPMA	20-300	20-600	5
HIPCA			10
			15

Precision Standards

T Dimension Tolerance (HIPMA) T: ±0.5

(HIPCA) T: ±0.5

Dimension Tolerance of A & B (HIPMA) A/B: +1/0

(HIPCA) A/B: -499mm/500- / +1/2

Thread Insert Machining Details

	N Through Hole	Z Counterbore Hole	M Thread Insert

Table 1 Bolt Nominal Dia. d

Bolt Nominal Dia.	3	4	5	6	8	10
d	3.5	4.5	5.5	6.5	9	11
d ₁	—	8	9.5	11	14	—
h	—	5	6	7	9	—

Ordering Code: (Ex.) M4-L6

Ⓢ L<T Ⓢ For details of thread insert HLTS, refer to P.3304

Hole, Thread Insert Machining Type

Part Number	1 mm Increment		Selection T	0.5 mm Increment		Hole Machined Bolt Nominal Diameter					
	Type	Nominal		A	B	F	G	Through Hole N	Counterbore Hole Z	Thread Insert M	L
HIPMA	2H 4H 6H	20-800	20-600	5	9-791	5-595			3 4		Select from Table above
				10	2-Hole and 4-Hole Type	2-Hole Type	3		3 4 5 6 8 10		
				15	9-395	4-Hole and 6-Hole Type	4 5 6	3 4 5 6 8 10			
HIPCA	2H 4H 6H	20-800	20-600	5	9-786	7-593					
				10	2-Hole and 4-Hole Type	2-Hole Type	4 5 6				
				15	9-391	4-Hole and 6-Hole Type	4 5 6 8				

- Ⓢ Thread insert machining is not applicable to HIPCA.
- Ⓢ F Dimension Range: For 2H and 4H, $d(d_1)+5 \leq F \leq A-d(d_1)-5$; for 6H, $d(d_1)+5 \leq F \leq A/2-d(d_1)/2-2.5$.
- Ⓢ G Dimension Range: For 2H, $d(d_1)/2+2.5 \leq G \leq B-d(d_1)/2-2.5$; for 4H, 6H, $d(d_1)+5 \leq G \leq B-d(d_1)-5$. (d for through hole, thread insert, d₁ for counterbore)
- Ⓢ For Hole Type, select N (through hole), Z (counterbore hole), and Threaded Insert Type, select M (threaded insert) and L (insertion length).
- Ⓢ When machined hole of Thread Insert Type goes through, the hole periphery may peel.

Part Number Example

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

Hole, Threaded Insert Machining Type: Part Number - A - B - T - F - G - Bolt Nominal Dia. - L
HIPCA2H - 200 - 170 - 10 - F100 - G70 - N8
HIPMA2H - 200 - 150 - 5 - F150 - G75 - M4 - L4

Part Number Alterations

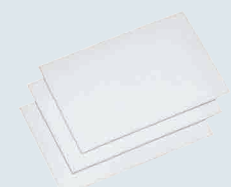
Part Number - A - B - T - F - G - Bolt Nominal Dia. - (XC / YC)
HIPCA2H - 100 - 100 - 5 - F40 - G50 - N6 - XC30

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

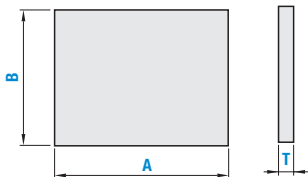


Insulating Papers

Insulating Papers



HIFPN



Ⓢ Ambient Operating Temperature up to 1300°C
Material: AES Wool

Type	Part Number	Selection	
		T	B
HIFPN	1	100	100 200 400 600
		400	
		800	
	2	100	
		400	
		800	
	3	100	
		400	
		800	

Part Number Example

Part Number - A - B
HIFPN3 - 100 - 400

Ⓢ HIFP has been changed to HIFPN.
Be careful when bending as it is easier to tear than conventional products

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

Tolerance

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

Properties

Density (kg/m ³)		250
Max. Operating Temperature (°C)		1300
Thermal Conductivity (W/m-K)	400°C	0.08
	600°C	0.12
	800°C	0.17
	1,000°C	0.23
Tensile Strength (N/25 mm)	T	
	1 mm	23
	2 mm	39
	3 mm	58