

Heat Insulating Plates

Free-Cutting Grade / Thermal Plates

Heat Insulating Plates – Free Cutting Grade

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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, L

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

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
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	9-591	3 4 5 6 8 10		
				15	9-395	4-Hole and 6-Hole Type	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	9-591	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, $d(d_i)+5 \leq F \leq A-d(d_i)-5$; for 6H, $d(d_i)+5 \leq F \leq A/2-d(d_i)/2-2.5$.
- Ⓢ G Dimension Range: For 2H, $d(d_i)/2+2.5 \leq G \leq B-d(d_i)/2-2.5$; for 4H, 6H, $d(d_i)+5 \leq G \leq B-d(d_i)-5$. (d for through hole, thread insert, d_i 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

Alterations	Hole Position from Left	Hole Position from Bottom

Code

XC YC

Spec.

XC = 1 mm Increment
 Ⓢ 5 ≤ XC ≤ 786
 Ⓢ (2H / 4H Type)
 $d(d_i)/2+2.5 \leq XC \leq A-F-d(d_i)/2-2.5$
 Ⓢ (6H Type)
 $d(d_i)/2+2.5 \leq XC \leq A-2F-d(d_i)/2-2.5$

YC = 1 mm Increment
 Ⓢ 5 ≤ YC ≤ 586
 Ⓢ $d(d_i)/2+2.5 \leq YC \leq B-G-d(d_i)/2-2.5$
 Ⓢ Not applicable to 2H Type.

Insulating Papers

Insulating Papers

RoHS 10

HIFP

Ⓢ Ambient Operating Temperature up to 1300°C
Material: Ceramic Fiber

Type	Part Number	Selection	
		A	B
HIFP	1	100	100 200 400 600
		400	
		800	
	2	100	
		400	
		800	
	3	100	
		400	
		800	

Part Number Example

Part Number - A - B
HIFP3 - 100 - 400

Properties

Density (kg/m ³)		250
Max. 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)
	1,000°C	0.16 (0.14)
Tensile Strength (N/25 mm)	T	
	1 mm	14.7 or More
	2 mm	29.4 or More
	3 mm	44.1 or More

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