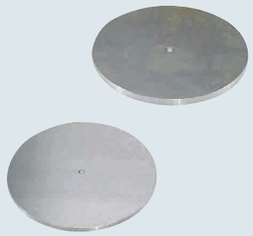
Circular Plates

Standard & Precision Class

Circular Plates

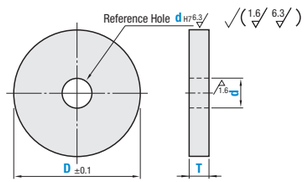


RoHS 10

Standard Grade

Type		Material	
Standard	Configurable		
ENPMH	ENPM	Steel	1018 Carbon Steel or Equivalent
ENPNH	ENPN	Aluminum	5052-H112 Aluminum Alloy
ENPDH	ENPD	Duralumin	2017-T351 Aluminum Alloy
ENPGH	ENPG	Stainless Steel	303 Stainless Steel

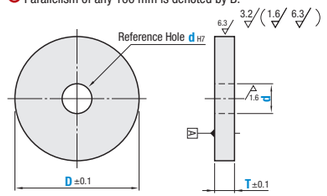
- Circumference Chamfering C0.5 or Less
- Parallelism of any 1,000 mm is 2 mm based on the material accuracy.



Precision Grade

Type		Material	
Standard	Configurable		
ENPSH	ENPS	Steel	1018 Carbon Steel or Equivalent
ENPAH	ENPA	Aluminum	5052-H112 Aluminum Alloy
ENPJH	ENPJ	Duralumin	2017-T351 Aluminum Alloy
ENPUH	ENPU	Stainless Steel	303 Stainless Steel

- Circumference Chamfering C0.5 or Less
- Parallelism of any 100 mm is denoted by B.



Standard Grade, Standard Size

Part Number		D	d	T
Type	T		1 mm Increment	Dimension Tolerance
ENPMH 1018 Carbon Steel or Equivalent	10	100 150 200 300	0–50	±0.6
	15			±0.7
ENPNH 5052 Aluminum Alloy	10	100 150 200 300	0–50	±0.6
	15			±0.7
ENPDH 2017 Aluminum Alloy	10	100 150 200 300	0–50	±0.6
	15			±0.7
ENPGH 303 Stainless Steel	10	100 150 200 300	0–50	±0.6
	15			±0.7

Precision Grade, Standard Size

Part Number		D	d	B
Type	T		1 mm Increment	Parallelism
ENPSH 1018 Carbon Steel or Equivalent	10	100 150 200 300	0–50	0.012
	15			
ENPAH 5052 Aluminum Alloy	10	100 150 200 300	0–50	0.03
	15			0.05
ENPJH 2017 Aluminum Alloy	10	100 150 200 300	0–50	0.03
	15			0.05
ENPUH 303 Stainless Steel	10	100 150 200 300	0–50	0.03
	15			0.05

Standard Grade, Configurable Size

Part Number		1 mm Increment		T Dim. Tol.	Available Types						
Type	T	D	d d≤Dx0.8		D50–200	D201–300	D301–400	D401–500	D501–600	D601–700	D701–800
ENPM 1018 Carbon Steel or Equivalent	8–9	50–200	0–50	±0.2	•	—	—	—	—	—	—
	10	50–600	0–100		•	•	•	•	•	—	—
	11–15				•	•	•	•	•	—	—
	16–20	100–800			•	•	•	•	•	•	•
	21–25				•	•	•	•	•	•	•
	26–30				•	•	•	•	•	•	•
ENPN 5052 Aluminum Alloy	8–9	50–200	0–50	±0.2	•	—	—	—	—	—	—
	10	100–800	0–100	±0.6	•	•	•	•	•	•	•
	11–14			±0.2	•	•	•	•	•	•	•
	15			±0.7	•	•	•	•	•	•	•
	16–19			±0.2	•	•	•	•	•	•	•
	20			±0.8	•	•	•	•	•	•	•
	21–24			±0.2	•	•	•	•	•	•	•
	25			±0.9	•	•	•	•	•	•	•
	26–29			±0.2	•	•	•	•	•	•	•
	30			±1.0	•	•	•	•	•	•	•
ENPD 2017 Aluminum Alloy	8–9	50–200	0–50	±0.2	•	—	—	—	—	—	—
	10	100–800	0–100	±0.6	•	•	•	•	•	•	•
	11–14			±0.2	•	•	•	•	•	•	•
	15			±0.7	•	•	•	•	•	•	•
	16–19			±0.2	•	•	•	•	•	•	•
	20			±0.8	•	•	•	•	•	•	•
	21–24			±0.2	•	•	•	•	•	•	•
	25			±0.9	•	•	•	•	•	•	•
	26–29			±0.2	•	•	•	•	•	•	•
	30			±1.0	•	•	•	•	•	•	•
ENPG 303 Stainless Steel	8–9	50–200	0–50	±0.2	•	—	—	—	—	—	—
	10	50–300	0–100		•	•	—	—	—	—	—
	11–15				•	•	—	—	—	—	—
	16–20				•	•	—	—	—	—	—
	21–25				•	•	—	—	—	—	—
	26–30				•	•	—	—	—	—	—

Precision Grade, Configurable Size

Part Number		1 mm Increment		B Paral.	Available Types						
Type	T	D	d d≤Dx0.8		D50–200	D201–300	D301–400	D401–500	D501–600	D601–700	D701–800
ENPS 1018 Carbon Steel or Equivalent	8–9	50–200	0–50	0.012	•	—	—	—	—	—	—
	10	50–600	0–100		•	•	•	•	•	•	—
	11–15				•	•	•	•	•	—	—
	16–20	100–800			•	•	•	•	•	•	•
	21–25				•	•	•	•	•	•	•
	26–30				•	•	•	•	•	•	•
ENPA 5052 Aluminum Alloy	8–9	50–200	0–50	0.03	•	—	—	—	—	—	—
	10	100–800	0–100		•	•	•	•	•	•	•
	11–14			0.05	•	•	•	•	•	•	•
	15				•	•	•	•	•	•	•
	16–19			0.07	•	•	•	•	•	•	•
	20				•	•	•	•	•	•	•
	21–24			0.09	•	•	•	•	•	•	•
	25				•	•	•	•	•	•	•
	26–29			0.11	•	•	•	•	•	•	•
	30				•	•	•	•	•	•	•
ENPJ 2017 Aluminum Alloy	8–9	50–200	0–50	0.03	•	—	—	—	—	—	—
	10	50–600	0–100		•	•	•	•	•	•	•
	11–14			0.05	•	•	•	•	•	•	•
	15				•	•	•	•	•	•	•
	16–19	100–800	0–100	0.07	•	•	•	•	•	•	•
	20				•	•	•	•	•	•	•
	21–24			0.09	•	•	•	•	•	•	•
	25				•	•	•	•	•	•	•
	26–29			0.11	•	•	•	•	•	•	•
	30				•	•	•	•	•	•	•
ENPU 303 Stainless Steel	8–9	50–200	0–50	0.03	•	—	—	—	—	—	—
	10	50–300	0–100		•	•	—	—	—	—	—
	11–15			0.05	•	•	—	—	—	—	—
	16–20			0.07	•	•	—	—	—	—	—
	21–25			0.09	•	•	—	—	—	—	—
	26–30			0.11	•	•	—	—	—	—	—

Part Number Example

Part Number	-	D	-	d
ENPNH15	-	200	-	8
ENPN19	-	670	-	18

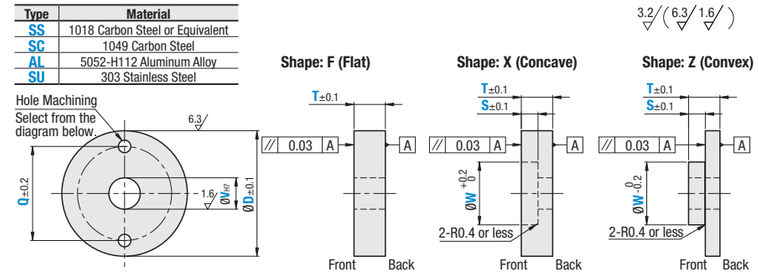
Machined Circular Plates

Machined Circular Plates

RoHS 10

Type	Material
SS	1018 Carbon Steel or Equivalent
SC	1049 Carbon Steel
AL	5052-H112 Aluminum Alloy
SU	303 Stainless Steel

Hole Machining
Select from the diagram below.

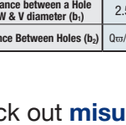
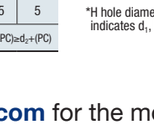
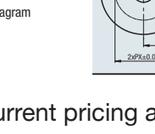
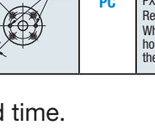
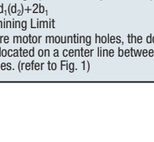


* For shape X and Z, there is a ØW for each.

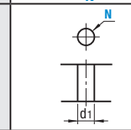
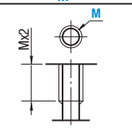
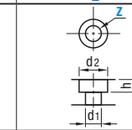
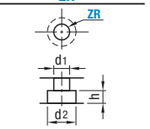
Circumference chamfering C0.5

Part Number			1 mm Increment				Selection			1 mm Increment
Type	Shape	T	D	V	W	S	H: No. of Holes	Hole Selection	Nominal Dia.	Q
SS 1018 Carbon Steel or Equivalent SC 1049 Carbon Steel AL 5052 Aluminum Alloy SU 303 Stainless Steel	F Flat X Concave Z Convex	8 10 15 20 25 30	60–300	10–100 V≤Dx0.8	20–260 W-V≥10 D-W≥20	5–25 T-S≥5	0 2 4 8 12	N Through hole M Tapped Hole Z Counterbore Hole ZR Back Surface Counterbore	5 6 8 10	35–280 Q>W+d_1(d_2)+2b_1 Refer to Machining Limits at the bottom of this page.

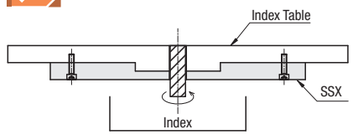
H: No. of Holes (Uniform Division)

0 (No Hole)	2 (2-Hole)	4 (4-Hole)	8 (8-Hole)	12 (12-Hole)
				

Hole Selection

Hole Type	Through Hole	Tapped Hole	Counterbore Hole	Back Surface Counterbore
Code	N	M	Z	ZR
Shape				
Machining Specifications	Dimension: d1 — Nominal Dia. 5: 5.5, 6: 6.5, 8: 9, 10: 11 The pilot hole for tapping goes through for Mx2<T. The pilot hole for tapping goes through for Mx2≥T		Dimension: d1 / h — Bolt Nominal 5: 5.5, 6: 6.5, 8: 9, 10: 11; d2: 9.5, 11, 14, 18 For bolt nominal diameter 6, T≥10 (When Shape Z, T–S≥10) For 8 and 10, T≥15 (T–S≥15, when shape Z)	

Application Example



Part Number Example

Part Number																
Type	Shape	T		D		V		W		S		H		Hole Selection Code - Nominal Diameter		Q
SS	F	10	-	D100	-	V20					-	H2	-	N5	-	Q60
SS	X	10	-	D100	-	V50	-	W60	-	S5	-	H4	-	M5	-	Q80

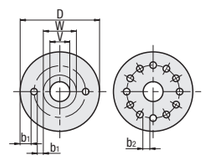
Part Number Alterations

Part Number																	
Type	Shape	T		D		V		W		S		H		Hole Selection Code - Nominal Diameter		Q	
SS	Z	20	-	D200	-	V30	-	W100	-	S10	-	H4	-	Z5	-	Q150	- WB-PC10-PX75 (WA, WB, WC, PC)

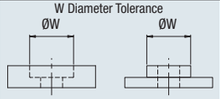
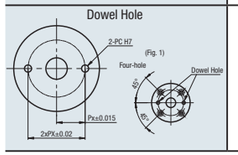
Machining Limits of Q & PX

Through Hole (N) Tapped Hole (M) Dowel Hole (PC)	Nominal Dia. 5	6	8	10
d_1	5.5	6.5	9	11
Min. Distance Between a Hole and D, W & V diameter (b_1)	4.5	5.5	7.5	9
Min. Distance Between Holes (b_2)	Q≥π/No. of Holes (H)-d_1(M)-(PC)≥d_1(M)+(PC)			

Counterbore Hole (Z) Back Surface Counterbore (ZR)	Nominal Dia. 5	6	8	10
d_2	9.5	11	14	18
Min. Distance between a Hole and D, W & V diameter (b_1)	2.5	3	4.5	5
Min. Distance Between Holes (b_2)	Q≥π/No. of Holes (H)-d_2-(PC)≥d_2+(PC)			



*H hole diameter in the diagram indicates d_1, M and d_2.

Alterations	Code	Spec.		
W Diameter Tolerance 	WA WB WC	Shape	Tolerance	Code
		X (Concave)	H7	WA
		Z (Convex)	g6	WB
			h6	WC
Dowel Hole 	PC	**Ordering Code:** PC (Selection), PX (Configurable) Ordering Example: PC10–PX50 PC Selection = 5, 6, 8, 10 Depth PC = Through (Effective Depth PC x 3) PX: 2PX>W+d_1(d_2)+2b_1 Refer to Machining Limit When there are motor mounting holes, the dowel holes will be located on a center line between the screw holes. (refer to Fig. 1)		