

Round Stoppers / Round Stopper Shims

Counterbored / Tapped Holes Type

Round Stoppers – Counterbored Type

AST Standard Type

ASTNF Configurable Type

Material: 1045 Carbon Steel or Equivalent
Hardness: 45–50 HRC

RoHS10

Standard

Part Number Type	No.	D	H	d	D ₁	E	Applicable Screw
AST	3	12	8	3.4	6.5	3.5	M3
	4	16		4.4	8	4.5	M4
	5	19	10	5.4	9.5	5.5	M5
	6	20		6.6	11	6.5	M6
	8	25	15	9	14	8.6	M8
	10	28	16	11	17.5	11	M10
12	30	18	14	20	13.5	M12	

Configurable

Part Number Type	No.	D 1 mm Increment	H 1 mm Increment	d	D ₁	E	Applicable Screw
ASTNF	3	10–15	5–30 (H≥E+1)	3.4	6.5	3.5	M3
	4	10–25		4.4	8	4.5	M4
	5	12–35		5.4	9.5	5.5	M5
	6	15–40		6.6	11	6.5	M6
	8	16–50		9	14	8.6	M8
	10	22–50		11	17.5	11	M10
12	24–50	14	20	13.5	M12		

Round Stoppers – Tapped Hole Type

ASTM Standard Type

ASTMF Configurable Type

Material: 1045 Carbon Steel or Equivalent
Hardness: 45–50 HRC

RoHS10

Standard

Part Number Type	No.	D	H	M (Coarse)	B
ASTM	3	12	8	M3	10
	4	16		M4	14
	5	19	10	M5	17
	6	20		M6	22
	8	25	15	M8	22
	10	28	16	M10	24
12	30	18	M12	27	

Configurable

Part Number Type	No.	D 1 mm Increment	H 1 mm Increment	M (Coarse)	B
ASTMF	3	10–15	5–30 (H≥Mx4)	M3	D-2
	4	10–25		M4	
	5	12–35		M5	
	6	15–40		M6	
	8	16–50		M8	
	10	22–50		M10	
12	24–50	6–30	M12		

Part Number Example

Part Number - D - H

AST8
ASTNF3 - 12 - 10
ASTM6
ASTMF5 - 12 - 15

Application Example

Round Stoppers Shims for Standard Type

ASTC

Material: Low Carbon Steel

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ASTC

Part Number Type	No.	T Selection	d	D
ASTC	3	0.1 0.2 0.5 1	4	12
	4		5	16
	5		6	19
	6		8	20
	8		10	25
	10		12	28
12	14	30		

For Configurable Type Shims, refer to P.2352

Part Number Example

Part Number - T

ASTC3 - 0.1

Flat Stoppers / Flat Stopper Shims

T / L Dimension Selectable / Configurable / Hole Selection Type

Flat Stoppers – T / L Dimension Selectable & Configurable

Type	T, L Selectable	T, L Configurable	Material	Hardness
FSWN	FSWNF	1045 Carbon Steel or Equivalent	45–50 HRC	
FSWJ	FSWJF	Polyacetal	—	

For FSWJ and FSWJF, 1.6 is substituted for 1.6 part.

RoHS10

T, L Selectable Type

Part Number Type	A	T	L	d	d ₁	h
FSWN FSWJ	12	12 15 20	50 75 100	4.5	8	5
	15			5.5	9.5	6
	16			6.6	11	7
	19					
	25					

T, L Configurable Type

Part Number Type	A	T 1 mm Increment	L 5 mm Increment	d	d ₁	h
FSWNF FSWJF	12	10–20	35–100	4.5	8	5
	15			5.5	9.5	6
	16			6.6	11	7
	19					
	25					

Flat Stoppers – Hole Selection Type

FSWNSF 1 Hole

FSWNWF 2 Holes

Material: 1045 Carbon Steel or Equivalent
Hardness: 40–45 HRC

Counterbore Dimensions

Type	d	d ₁	h
Z4	4.5	8	5
Z5	5.5	9.5	6
Z6	6.6	11	7

RoHS10

Hole Selectable: One-Hole Type

Part Number Type	A	T 1 mm Increment	L 1 mm Increment	Hole Selection
FSWNSF	12	10–15	A≤L≤60	M (Tapped) Z (Counterbore)
	15			M4 M5 M6 Z4 Z5
	16			M4 M5 M6 Z4 Z5 Z6
	19			M6 Z6
	25			M6 Z6

Hole Selectable: Two-Hole Type

Part Number Type	A	T 1 mm Increment	L 1 mm Increment	X 1 mm Increment	Hole Selection
FSWNWF	12	10–15	35–100	10–30	M (Tapped) Z (Counterbore)
	15				M4 M5 M6 Z4 Z5 Z6
	16				M4 M5 M6 Z4 Z5 Z6
	19				M6 Z6
	25				M6 Z6

Part Number Example

Part Number - T - L - X - Hole Selection

FSWN12 - 15 - 75
FSWNSF16 - 12 - 16 - Z5
FSWNWF16 - 15 - 40 - X10 - M6

Application Example

Shim for Flat Stopper – Standard Type

Type	Material	Surface Treatment	T
FSWNC	304 Stainless Steel	—	0.1 0.2 0.3
		Black Oxide	0.5 1
	Low Carbon Steel	—	

RoHS10

FSWNC

Part Number Type	A	T Selection	L Selection	D
FSWNC	12	0.1 0.2 0.3	0.5 1	30
	15			50
	16			75
	19			100
	25			

Part Number Example

Part Number - T - L

FSWNC12 - 0.1 - 75

For Shims for T, L Configurable Flat Stoppers, see P.2352