
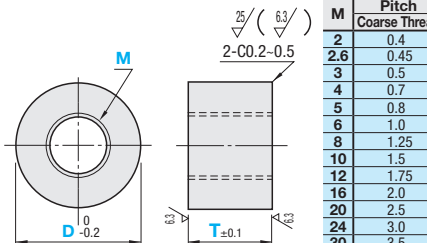


Metal Washer

Tapped



T Dimension Selectable	T Dimension Configurable	Dimension Configurable	M Material	S Surface Treatment
Coarse Thread	Coarse Thread	Coarse Thread		
-	-	FWTAC	S45C Equivalent	-
WTAB	TWTAB	FWTAB		Black Oxide
WTAM	TWTAM	FWTAM		Electroless Nickel Plating
-	-	FWTAA	2000Series Aluminum Alloy	Clear Anodize
-	-	FWTAAB		Black Anodize
WTAS	TWTAS	FWTAS	SUS304	-



M	Pitch
2	0.4
2.6	0.45
3	0.5
4	0.7
5	0.8
6	1.0
8	1.25
10	1.5
12	1.75
16	2.0
20	2.5
24	3.0
30	3.5

RoHS10

T Dimension Selectable

Part Number	Type	D	M Selection					T Selection	Unit Price				
			2	3	4	5	6		WTAB	WTAM	WTAS		
10	2	3	4	5			3	5	8	10			
12			4	5	6			5	8	10	15		
16				5	6	8		5	8	10	15		
20					6	8	10		8	10	15	20	
30						8	10	12		10	15	20	
40							10	12	16		10	15	20
50									16	20			
60										16	20		

T Dimension Configurable

Part Number	Type	D	M Selection					T	0.5mm Increment
			2	3	4	5	6		
6	2	3	4				3.0-20.0		
8	2	3	4						
10	2	3	4	5					
12			4	5	6				
16				5	6	8			
20					6	8	10		
30						8	10	12	

Ⓜ T ≤ Mx8 Ⓜ M2 → T ≤ Mx5

Dimension Configurable

Part Number	D	M Selection	T	0.5mm Increment	Unit Price				
					FWTAC	FWTAB	FWTAM	FWTAA	FWTAAB
6-10	(0.5mm Increment)		3.0-5.0						
10.5-20.0	(0.5mm Increment)		5.5-10.0						
21-30	(1mm Increment)	2 (3 ≤ T ≤ 10)	10.5-20.0						
31-40	(1mm Increment)	2.6 (3 ≤ T ≤ 13)	20.5-30.0						
41-50	(1mm Increment)	3 (3 ≤ T ≤ 24)	30.5-40.0						
51-60	(1mm Increment)	3 (3 ≤ T ≤ 32)	40.5-50.0						
61-80	(1mm Increment)	4 (3 ≤ T ≤ 40)	5.0-10.0						
81-100	(1mm Increment)	5 (3 ≤ T ≤ 48)	10.5-20.0						
		6 (3 ≤ T ≤ 50)	20.5-30.0						
		8 (4 ≤ T ≤ 50)	30.5-40.0						
		10 (5 ≤ T ≤ 50)	40.5-50.0						
		12 (6 ≤ T ≤ 50)	3.0-5.0						
		16 (6 ≤ T ≤ 50)	5.5-10.0						
		20 (8 ≤ T ≤ 50)	10.5-20.0						
		24 (10 ≤ T ≤ 50)	20.5-30.0						
		30 (12 ≤ T ≤ 50)	30.5-40.0						
			40.5-50.0						
			5.0-10.0						
			10.5-20.0						
			20.5-30.0						
			30.5-40.0						
			40.5-50.0						

Ⓜ (D-M) / 2 ≥ 2 Ⓜ T ≤ Mx8 Ⓜ M2, M2.6 → T ≤ Mx5

Ordering Example

Part Number - D - M - T

WTAB12 - 6 - 5


TWTAB12 - 6 - 5.5

FWTAM - D20 - M5 - T4.5

Alterations


Part Number - D - M - T - (WSC)

FWTAS - D15 - M6 - T15 - WSC10

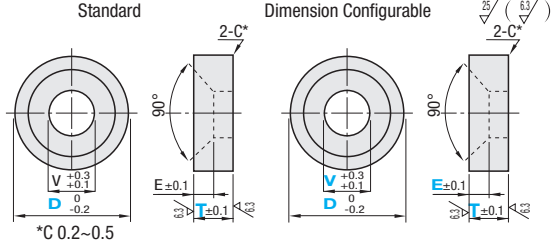
Alteration	Code	Spec.
	WSC	Adds two flats. Ordering Code WSC10 WSC=1mm Increment WSC ≥ M+4 Ⓜ Not available for D6 - D8. Ⓜ Not available for T Dimension Selectable/Configurable Type.

Metal Washer

Countersunk / With Screw Holes



Standard	Dimension Configurable	M Material	S Surface Treatment
-	FWSRC	S45C Equivalent	-
WSRB	FWSRB		Black Oxide
WSRM	FWSRM		Electroless Nickel Plating
-	FWSRA	2000Series Aluminum Alloy	Clear Anodize
WSRS	FWSRS		SUS304



Standard: *C 0.2-0.5

Dimension Configurable: *C 0.2-0.5

Countersunk, Standard

Part Number	Type	D	T Selection	E	V	Unit Price		
						WSRB	WSRM	WSRS
14			2.5	2.5	4.5			
16			3	3	5.5			
20			3.5	3.5	6.6			
25			5	5	9			
30			6	6	11			


Countersunk, Dimension Configurable

Part Number	D	V	E	T	Unit Price				
					FWSRC	FWSRB	FWSRM	FWSRA	FWSRS
10.0-20.0	(0.5mm Increment)	2.0	2.0-10.0	2.0-5.0					
21-30	(1mm Increment)	2.0	2.0-10.0	2.0-5.0					
31-40	(1mm Increment)	2.6	2.0-10.0	2.0-5.0					
41-50	(1mm Increment)	3-30	E=T	5.5-10.0					
51-60	(1mm Increment)	3-30	E=T	5.5-10.0					

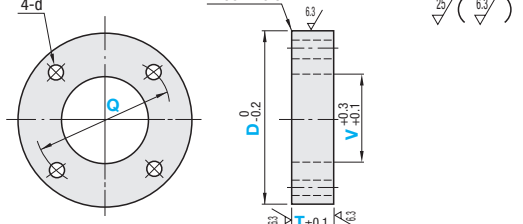
Ⓜ (D-V)/2-E ≥ 1 → 1mm or more is required for the min. thickness.

Ⓜ Circularity cannot be guaranteed because the thickness V becomes 0 when E=T.

With Screw Holes



Type	M Material	S Surface Treatment
WBAC	S45C Equivalent	-
WBAB		Black Oxide
WBAM		Electroless Nickel Plating
WBAA	2000Series Aluminum Alloy	Clear Anodize
WBAS	SUS304	-



RoHS10

Part Number	Type	D	V	Q	T	d	Applicable Screw	Unit Price														
								WBAC			WBAB			WBAM			WBAA			WBAS		
20			3.0-5.0	10.5-13.5		3.5	M3															
25			3.0-9.5	10.5-17		3.5	M3															
30			3.0-10.0	12-20		4.5	M4															
35			3.0-16.0	12-25		4.5	M4															
40			3.0-20.0	12-30	1-10	4.5	M4															
50			3.0-22.0	14-35		5.5	M5															
60			3.0-28.0	14-40		5.5	M5															

Ⓜ Q ≥ V+d+4 Ⓜ T ≥ 2 for WBAA.

Ordering Example

Part Number - D - V - E - Q - T

FWSRM14 - D17.5 - V6.5 - E3 - T7.5

WBAB30 - V8 - Q18 - T3

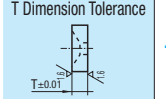
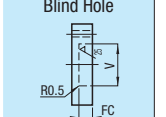
Alterations

Part Number - D - V - E - Q - T - (TKC, FC)

FWSRB - D15 - V5 - E3 - T3.0 - TKC

WBAS40 - V10 - Q25 - T10 - FC3

Ⓜ Alterations are available for Dimension Configurable Type only.

Alterations	Code	Spec.
	TKC	Changes T dimension tolerance. Ordering Code TKC T ± 0.1 → ± 0.01 Ⓜ Applicable to Countersunk Type only.
	FC	Changes V hole to blind hole. Ordering Code FC3 FC=1mm Increment Ⓜ Applicable to Screw Holes Type only. Ⓜ T-FC ≥ 2 Ⓜ V ≥ 10 Ⓜ FC ≥ 2