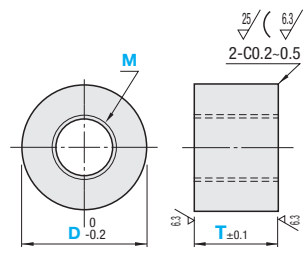


Tapped



T Dimension Selectable	T Dimension Configurable	Dimension Configurable	M Material	S Surface Treatment
Coarse Thread	Coarse Thread	Coarse Thread		
-	-	FWTAC	EN 1.1191 Equiv.	-
WTAB	TWTAB	FWTAB		Black Oxide
WTAM	TWTAM	FWTAM		Electroless Nickel Plating
-	-	FWTAA	Aluminum Alloy 2000 series	Clear Anodize
-	-	FWTAAAB		Black Anodize
WTAS	TWTAS	FWTAS	EN 1.4301 Equiv.	-



M	Pitch
	Coarse Thread
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

■T Dimension Selectable

Part Number		M Selection						T Selection				Unit Price		
Type	D											WTAB	WTAM	WTAS
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		15	20
	60										16	20		15

■T Dimension Configurable

Part Number		M										T	
Type	D	Selection										0.5mm Increment	
TWTAB TWTAM TWTAS	6	2	3	4									3.0~20.0
	8	2	3	4									
	10	2	3	4	5								
	12			4	5	6							3.5~20.0
	16				5	6	8						
	20					6	8	10					
	30						8	10	12				

! $T \leq M \times 8$

💡 M2 ... $T \leq M \times 5$

Part Number		T	Unit Price		
Type	D	0.5mm Increment	TWTAB	TWTAM	TWTAS
TWTAB TWTAM TWTAS	6~10	3.0~ 5.0			
		5.5~10.0			
		10.5~20.0			
	12, 16	3.5~ 5.0			
		5.5~10.0			
		10.5~20.0			
	20, 30	3.5~ 5.0			
		5.5~10.0			
		10.5~20.0			

■ Dimension Configurable

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

⚠ (D-M) / 2 ≥ 2

! $T \leq M \times 8$

⚠ M2, M2.6... $T \leq M \times 5$

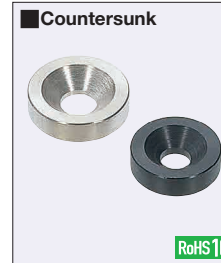


Alterations  Part Number - D - M - T - (WSC)
FWTAS - D15 - M6 - T15 - WSC10

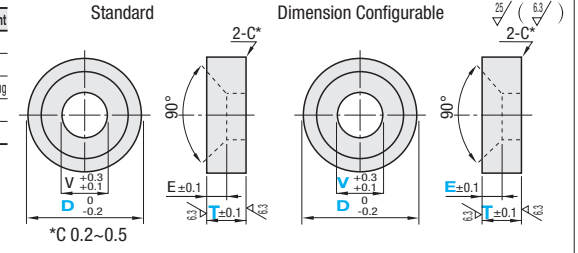
Alteration	Code	Spec.
	WSC	Adds two flats. <u>Ordering Code</u> WSC10 WSC=1mm Increment WSC=M+4 ⊗ Not available for D6 ~ D8. ⊗ Not available for T Dimension Selectable/Configurable Type.

Metal Washer

Countersunk / With Screw Holes



Standard	Dimension Configurable	M Material	S Surface Treatment
-	FWSRC	EN 1.1191	-
WSRB	FWSRB	Equiv.	Black Oxide
WSRM	FWSRM		Electroless Nickel Plating
-	FWSRA	Aluminum Alloy 2000 series	Clear Anodize
WSRS	FWSRS	EN 1.4301	-



Countersunk, Standard

Part Number		T	E	V	Unit Price		
Type	D	Selection			WSRB	WSRM	WSRS
WSRB WSRM WSRS	14	2.5	2.5	4.5			
		4					
		5					
	16	3	3	5.5			
		4					
		5					
	20	3.5	3.5	6.6			
		4					
		5					
	25	5	5	9			
		6					
	30	6	6	11			
8							

■ Countersunk, Dimension Configurable

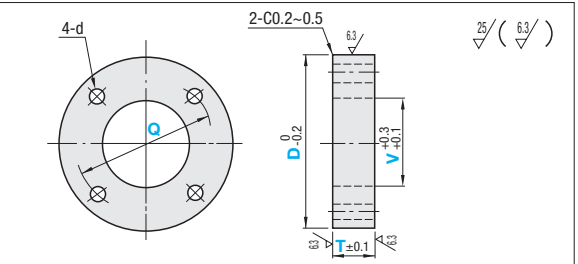
Part Number	D	V 0.5mm Increment (V3 or More)	E 0.5mm Increment	T 0.5mm Increment	Unit Price				
					FWSRC	FWSRB	FWSRM	FWSRA	FWSRS
FWSRC FWSRB FWSRM FWSRA FWSRS	10.0~20.0 (0.5mm Increment)	2.0	2.0~10.0 E≤T	2.0~ 5.0					
				5.5~10.0					
	21~30 (1mm Increment)			2.0~ 5.0					
		5.5~10.0							
	31~40 (1mm Increment)	2.0~ 5.0							
		5.5~10.0							
	41~50 (1mm Increment)	2.0~ 5.0							
		5.5~10.0							
	51~60 (1mm Increment)	2.0~ 5.0							
		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 $E=T$.



Type	Material	Surface Treatment
WBAC	EN 1.1191 Equiv.	-
WBAB		Black Oxide
WBAM		Electroless Nickel Plate
WBAA	Aluminum Alloy 2000 series	Clear Anodize
WBAS	EN 1.4301 Equiv.	-

[illegible]

⚠ $Q \geq V + d + 4$

⚠ $T \geq 2$ for WBAA.



Ordering Example	Part Number	D	V	E	Q	T
	WSRM14					2.5
	FWSRS	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.
T Dimension Tolerance  $T \pm 0.1$	TKC	Changes T dimension tolerance. <u>Ordering Code</u> TKC $T \pm 0.1 \Rightarrow \pm 0.01$ 🔴 Applicable to Countersunk Type only.
Blind Hole  R0.5 FC V	FC	Changes V hole to blind hole. <u>Ordering Code</u> FC3 FC=1mm Increment 🔴 Applicable to Screw Holes Type only. 🔴 T-FC≥2 🔴 V≥10 🔴 FC≥2