Metal Collars

Standard / Precision Grade with Configurable Dimensions

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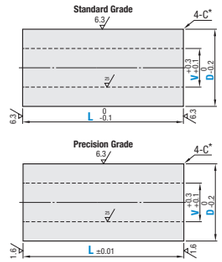
RoHS10

Type		Material	Surface Treatment
Standard Grade	Precision Grade		
FNCL	FAC	1018 Carbon Steel or Equivalent	—
FNCLC	FACS	1045 Carbon Steel or Equivalent	—
FNCLB	FABSC		Black Oxide
FNCLM	FAMSC		Electroless Nickel Plating
FNCLR	FARSC		Low Temp. Black Chrome Plating
FNCLBB	—	Brass JIS C36000 Brass	—
FNCA	FNCAA	2017 Aluminum Alloy	—
FNCLA	FAASC		Clear Anodize
FNCLAB	—		Black Anodize
FNCLSS	FSASC	304 Stainless Steel	—
FNCLSSR	FSASCR		Low Temp. Black Chrome Plating



*D=16 or less C0.1–0.2
D=16.5 or more C0.5 or less

Standard Grade

Part Number	V 0.5 mm Increment V 3 or more	D	L 0.1 mm Increment
FNCL FNCLC FNCLB FNCLM FNCLR FNCA FNCLBB FNCLA FNCLAB FNCLSS FNCLSSR	Selection 2.0 2.6 0.5 mm Increment 3.0–90.0	4.0–10.0 0.5 mm Increment	10.0-64.0
		10.5–20.0 0.5 mm Increment	10.0–100.0
		21–30 1 mm Increment	
		31–40 1 mm Increment	
		41–50 1 mm Increment	
		51–60 1 mm Increment	
		61–75 1 mm Increment	
		76–80 1 mm Increment	10.0-75.0 75.1–100.0**
		81–100 1 mm Increment	10.0-75.0 75.1–100.0**

Precision Grade

Part Number	V 0.5 mm Increment V 3 or more	D	L 0.1 mm Increment
FAC FACS FABSC FAMSC FARSC FNCAA FAASC FSASC FSASCR	Selection 2.0 2.6 0.5 mm Increment 3.0–90.0	4.0–10.0 0.5 mm Increment	10.0–100.0
		10.5–20.0 0.5 mm Increment	
		21–30 1 mm Increment	
		31–40 1 mm Increment	
		41–50 1 mm Increment	
		51–60 1 mm Increment	
		61–80* 1 mm Increment	
		81–100* 1 mm Increment	

- *Not available for FNCLBB, FNCLA, and FNCLAB.
- ** Not available for FNCLA, FNCLAB, and FNCA
- Machining Conditions

*1 Machining Limits of Collar Thickness and Overall Length
10.0≤L≤50.0 → (D-V)/2≥1
50.1≤L≤100.0 → (D-V)/2≥2

*2 Machining Limits of Collar Thickness and Overall Length
(Material: 2017 Aluminum Alloy, Brass)
4≤D≤10 → V≤D-2
10.5≤D≤30 → V≤D-4
31≤D≤60 → V≤D-6
61≤D≤80 → V≤D-8
81≤D≤100 → V≤D-10

*3 Machining Limits of V and Overall Length
L≤Vx8

- Machining Conditions *1, *2, *3
- No specification available for sizes without declaration of value.
- *Not available for FNCAA, FAASC, FSASC, and FSASCR.

Part Number Example

Part Number	-	D	-	V	-	L
FNCLB	-	V10.5	-	D19.5	-	L50.5
FAMSC	-	V10.5	-	D19.5	-	L50.5

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Standard / Precision Grade with Configurable Dimensions, *continued*

Part Number Alterations

Part Number	-	V	-	D	-	L	- (VKC / DKC / HKC)
FSASC	-	V10.5	-	D45	-	L70.5	- VKC

- When both I.D./O.D. tolerance Changes are specified, the concentricity is Ø0.02.
- Not available for the Hardened (Products with hardness indications).

Alteration	Code	Spec.
I.D. Tolerance	VKC	Changes the I .D. Tolerance to H7. **Ordering Code:** VKC Machining Conditions When V≥8 and L≥Vx5, adds a relief at the center as shown below. D≥6V≥3

D	D-V
6–10	D–V≥2
10.5–20	D–V≥3
21–30	D–V≥6
31–40	D–V≥8
41–50	D–V≥10
51–60	D–V≥12
61–70	D–V≥14
71–80	D–V≥16
81–90	D–V≥18
91–100	D–V≥20

Alteration	Code	Spec.
O.D. Tolerance	DKC (g6) HKC (h7)	Changes the O .D. Tolerance to g6 or h7. **Ordering Code:** DKC / HKC Machining Conditions D≥6 Not applicable for FNCLAB

D	D-V
6–10	D–V≥2
10.5–20	D–V≥3
21–30	D–V≥6
31–40	D–V≥8
41–50	D–V≥10
51–60	D–V≥12
61–70	D–V≥14
71–80	D–V≥16
81–90	D–V≥18
91–100	D–V≥20

Alterations	C Chamfering (1-One Side Both Sides)	C Chamfering (1-One Side Both Sides)	Taper (1-One Side Both Sides)	Tapping	Set Screw Hole Alteration (1-Set 2-Set)	Slitting
Code	CC / WCC	CV / WCV	AC / WAC	VM (Coarse) VMA (Fine)	MC / WMC	SLC
Spec.	Chamfers C plane. **Ordering Code:** CC1.5 WCC2.5 CC, WCC=0.5mm Increment CC, WCC≤10 CC, WCC<(D-V)/2 L-CC≤5 L-(WCCx2)≤5	Chamfers C Plane. **Ordering Code:** CV1.5, WCV2.5 0.5mm Increment 0.5<CV / WCV≤10 D≤20 D≤16: (D-V)/2-0.7> CV / WCV, CC / WCC D≥16.5: (D-V)/2-1> CV / WCV, CC / WCC L-CV≥5 L-(WCV×2)≥5 CC/WCC and CV/WCV cannot be used together.	Adds a taper. **Ordering Code:** AC3.5-Q60 WAC5.0-Q30 AC, WAC=0.5mm Increment Q=Selection from 15, 20, 30 and 60 AC≤L-5 (D-V)/2≥tanQxAC(WAC)+0.5	Adds a tapped hole (Through). **Ordering Code:** VM4: Specify VM or VMA instead of V Ex: FNCL-VMA4-D10-L18 For the Machining Limits of tap dia. and full length (L), see the table below. Tap diameter ≤ D/2	Adds a tapped hole (coarse thread) at D part. **Ordering Code:** MC3 WMC5 Condition of thickness (D–V)/2: as table below. L≥MC / WMCx3 MC / WMC=Select from table below.	Adds a slit. **Ordering Code:** SLC Condition of thickness (D–V)/2: as table below. Slit width is fixed. D, V and L Dimension tolerances are the values before alteration. They may change after alteration depending on materials.

Tapped Hole Dia. VM/VMA	VM Pitch (Coarse)	VMA Pitch (Fine)	L max
4	0.7	0.5	20
5	0.8		30
6	1.0	0.75	35
8	1.25	1.0	40
10	1.5		50
12	1.75		55
16	2.0	1.5	90
18	—		100
20	2.5		

MC / WMC	(D–V)/2
3 4	3 or More
5 6 8	5 or More
10 12	8 or More

Outer Dia. D	SLC	(D-V)/2
10.0–20.0	1	5 or Less
20.5–40	2	10 or Less
41~	3	20 or Less

Alterations	Inner diameter dimension change (0.1mm unit designation)
Code	CVE
Spec.	Specify the inner diameter dimension in units of 0.1mm. **Ordering Code:** CVE15.2 1mm Increments CVE>13mm