


Shoulder Bolts

Shaft Dia. Tolerance e9

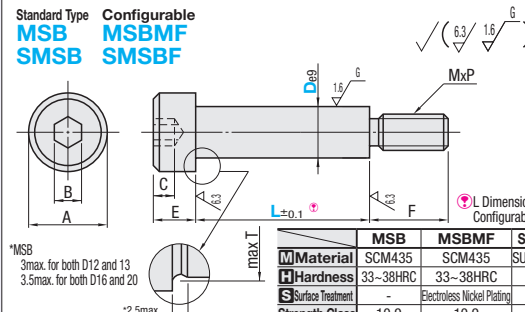
Shoulder Bolts
- Shaft Dia. Tolerance e9



RoHS10

Standard Type
MSB
SMSB

Configurable
MSBMF
SMSBF



$\sqrt{Ra} (6.3, 1.6, 0.6)$

$L \neq 0.1$

max T

2.5max

$\text{L Dimension Tolerance of Configurable Type is } \pm 0.05.$

	MSB	MSBMF	SMSB, SMSBF
M Material	SCM435	SCM435	SUS304 Equivalent
H Hardness	33-38HRC	33-38HRC	-
S Surface Treatment	-	Electroless Nickel Plating	-
Strength Class	10.9	10.9	A2-50

Standard Type

De9	A	B	C	E	MxP	T
4	6.5			3	2.5x0.45	4.5
4.5	7	2.5	1.6			5
5	8			3.5	3x0.5	5.5
5.5		9	3	2.2		6
6				2	4x0.7	6.5
6.5		10	4	2.5	5x0.8	7
8	-0.025	13	5	3	6x1.0	8.7
10	-0.061	16			8x1.25	10.8
12		17	6	4		12.8
13	-0.032	18	8	5	10x1.5	14
16	-0.075	24	10	7	12x1.75	17
20	-0.040	27	14	9	16x2.0	21
	-0.092					

Standard Type

Part Number Type	D	L (SMSB is applicable only to sizes marked with *.)										F	Unit Price																	
													MSB	SMSB																
MSB	4	*10	*15	*20	*25	*30	*35	*40					45	5																
	4.5	*10	*15	*20	*25	*30	*35	*40			45	50	6																	
	5	*10	*15	*20	*25	*30	*35	*40			45	50	7																	
	5.5	*10	*15	*20	*25	*30	*35	*40			45	50	55	7																
	6	*10	*15	*20	*25	*30	*35	*40			45	50	55	60	65	70	7													
	6.5	*10	*15	*20	*25	*30	*35	*40			*45	*50	55	60	65	70	75	80	9											
	8	*10	*15	*20	*25	*30	*35	*40	*45			*50	*55	*60	*65	*70	*75	*80	85	90	9									
	SMSB	10	*10	*15	*20	*25	*30	*35	*40	*45	*50	*55			*60	*65	*70	*75	*80	*85	*90	95	100	110	120	12				
		12	10	15	20	25	30	35	40	45	50	55			60	65	70	75	80	85	90	95	100			12		-		
		13	10	15	20	25	30	35	40	45	50	55			60	65	70	75	80	85	90	95	100			16		-		
16		10	15	20	25	30	35	40	45	50	55			60	65	70	75	80	85	90	95	100	110	120	130	16		-		
18																							110	120	130	140	150	18		-
20												40	50	60	70	80	90	100					110	120	130	140	150	24		-

Configurable

Part Number Type	De9	L 0.1mm Increment	F 0.5mm Increment	A	B	C	E	T	L:F Machining Conditions	Unit Price		
										MSBMF	SMSBF	
MSBMF SMSBF	4		10-40	M≤F≤Mx3	7	2.5	1.6	3	4.5	L+F≤46		
	4.5	-0.020	10-40		5	L+F≤46						
	5	-0.050	10-40		9	3	2.2	4	5.5	L+F≤47		
	5.5		10-40						6	L+F≤47		
	6		10-50		10	4	2.5	5	6.5	L+F≤59		
	6.5	-0.025	10-50						7	L+F≤59		
	8	-0.061	10-60		13	5	3	6	8.7	L+F≤70		
	10		10-60						16	L+F≤72		



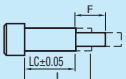
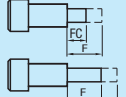
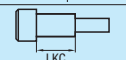
Ordering Example: Part Number - L - F
MSB10 - 50 - F10
SMSBF5.5 - L30 - F10

Configurable Type may have different part dimensions from the Standard Type.



Alterations: Part Number - (L)C - F - (FC, L)C
MSB10 - (L)C50.1 - F10 - (FC)10
SMSBF8 - L30 - F10 - LKC

No Low Quantity Surcharge is necessary for alterations orders. For orders of 1 - 19 pc(s), the Unit Price is applied.

Alterations	Code	Spec.
	L	Changes L dimension (machining) O.A.L. (LC) tolerance is ±0.05. Lmin≤LC≤Lmax Specified in 0.1mm ⚠ This alteration does not change the F dimension. To change the F dimension, combine FC alteration with it. ⚠ Applicable to MSB only.
	FC	Changes the thread part length. M≤FC≤Mx3 0.5mm Increment ⚠ 3≤FC≤7.5 only when D=4 ⚠ Applicable only when MSB and altered LC is combined.
	LKC	Changes L Dimension Tolerance L dimension tolerance is from ±0.05 to 0.1. ⚠ Applicable to MSBMF and SMSBF only.