

# Lead Screw

## One End Stepped / One End Double Stepped

Can be used when Shaft Length (Stroke) is short.

Type				Material	Surface Treatment
One End Stepped		One End Double Stepped			
① Right-Hand Thread	② Right-Hand Thread with Keyway	③ Right-Hand Thread	④ Right-Hand Thread with Keyway		
MTSRA	MTSRB	MTSRC	MTSRD	S45C	Black Oxide Low Temperature Black Chrome Plating
MTSBRA	MTSBRB	MTSBRC	MTSBRD		
RMTSRA	RMTSRB	RMTSRC	RMTSRD		
MTSTRA		MTSTRC			

• Single Pitch Error...±0.02mm • Accumulated Pitch Error...±0.15/300mm

6.3 / (√3.2 / √)

Keyway machining details conform to Shaft Keyway Dimensions shown on the right-hand page.

### Right-Hand Thread

Part Number Type	D	1mm Increment		Q Selection	E 1mm Increment	D	Pitch P
		L	T, S				
① One End Stepped Right-Hand Thread MTSRA MTSBRA RMTSRA MTSTRA D≤32, L≤1000	8	50-500	2s≤S≤Q, Ex7 2s≤T≤Qx7 When Q, E≤9, T, S are five or less times of Q, E.	6	Q/2s≤E≤Q-1	8	1.5
	10	80-1000		6 7		10	2
	12			6 7 8 9		12	3
	14	100-1200		8 9 10		14	4
	16			9 10 12		16	5
	18			10 12 14 15		18	6
	20			10 12 14 15 17		20	8
	22	150-1200		12 14 15 16 17		22	10
	25			12 14 15 16 17 20		25	12
	28			14 15 16 17 20 25		28	14
32	17 20 25		32	16			
36	200-1200	20 25 30	36	18			
40		25 30 35 40	40	20			
50			50	25			

② One End Double Stepped Right-Hand Thread  
MTSRB  
MTSBRB  
RMTSRB  
D≤32, L≤1000

③ One End Double Stepped Right-Hand Thread  
MTSRC  
MTSBRC  
RMTSRC

④ One End Double Stepped Right-Hand Thread with Keyway  
MTSRD  
MTSBRD  
RMTSRD  
D≤32, L≤1000

When combined with position indicators, the standard Q diameters are 8 ~ 20. P811, 812

### Right-Hand Thread with Keyway

Part Number Type	D	1mm Increment		Q Selection	1mm Increment			MxPitch	D	Pitch P
		L	T, S		E	C	J			
② One End Stepped MTSRB MTSBRB RMTSRB D≤32, L≤1000	8	80-1000	2s≤S≤Q, Ex7 2s≤T≤Qx7 When Q, E≤9, T, S are five or less times of Q, E.	7 8 9	E=6 Q/2s≤E≤Q-2	C≤60 S-C-J=2	MxPitch Q=M M8x1.0 M10x1.0 M12x1.0 M14x1.0 M15x1.0 M17x1.0 M20x1.0 M25x1.5 M30x1.5 M35x1.5 M40x1.5	12	2	
	10	100-1200		8 9 10				14	3	
	12			9 10 12				16	4	
	14	150-1200		10 12 14 15				18	5	
	16			10 12 14 15 17				20	6	
	18			12 14 15 16 17 20				22	8	
	20			14 15 16 17 20 25				25	10	
	22	200-1200		17 20 25				28	12	
	25			20 25 30				32	14	
	28			25 30 35 40				36	16	
32			40	18						
36		50	20							
40			25							
50			30							

When combined with position indicators, the standard Q are 8 ~ 20. P811, 812

Part Number	L	S	Q	C	J	Part Number	L	T	Q	S	E	C	J	B
MTSRA16	456	S49	Q10			MTSRC16	456	T20	Q12	S10	E9	C5	J0	B10
MTSBR16	456	S10	Q12	C5	J0	MTSRD16	456	T20	Q12	S10	E8	C5	J0	B10

Unit price for the product is price in the table multiplied by price multiplier.  
Price in the table x Price Multiplier = Unit Price

### ① One End Stepped Right-Hand Thread

Part Number Type	D	Unit Price					
		Min. L - 200	L201-400	L401-600	L601-800	L801-1000	L1001-1200
MTSRA Price in the Table	8						
	10						
	12						
	14						
	16						
	18						
	20						
	22						
	25						
	28						
MTSBRA Price in the Table x 1.12	8						
	10						
	12						
	14						
	16						
	18						
	20						
	22						
	25						
	28						
MTSTRA Price in the Table x 1.12	8						
	10						
	12						
	14						
	16						
	18						
	20						
	22						
	25						
	28						

### ③ One End Double Stepped Right-Hand Thread

Part Number Type	D	Unit Price					
		Min. L - 200	L201-400	L401-600	L601-800	L801-1000	L1001-1200
MTSRC Price in the Table	8						
	10						
	12						
	14						
	16						
	18						
	20						
	22						
	25						
	28						
MTSBRC Price in the Table x 1.1	8						
	10						
	12						
	14						
	16						
	18						
	20						
	22						
	25						
	28						
MTSTRC Price in the Table x 1.1	8						
	10						
	12						
	14						
	16						
	18						
	20						
	22						
	25						
	28						

Alterations [Part Number] - L - S - Q - C - J - (MC, MQ ... etc.)  
MTSRB16 - 456 - S10 - Q12 - C5 - J0 - MC8

Alterations	Flat Machining	Retaining Ring Groove	Wrench Flats	Coarse Tapping	Threaded For Bearing Nut	Square Chamfering	Keyway
Code	FC (D part) FE (E part)	AE (E part)	SC (D part) SE (E part)	MC (Left End) MQ (Q part) ME (E part)	BQ (Q part)	ZQ (Q part) ZE (E part)	KQ (Q part) KE (E part)
Spec.	<ul style="list-style-type: none"> <li>FC/FE=0 or FC/FE≥2</li> <li>When Q (E)≤25, FY&lt;1.0</li> <li>When Q (E)≥26, FY&lt;2.0</li> <li>3s≤FY≤20</li> </ul>	<ul style="list-style-type: none"> <li>Not applicable to One End Stepped Type (including with Keyway).</li> <li>AE=0.1mm Increment</li> <li>AE=3s-T-11-P-11</li> <li>(For the m.v. value, see the table below.)</li> <li>Existing Code AE13.3</li> <li>AE=Applied on E part</li> </ul>	<ul style="list-style-type: none"> <li>SC is not applicable to One End Double Stepped Type</li> <li>SC, SE, SW, SY=1mm Increment</li> <li>SC=Applied on Q part</li> <li>SE=Applied on E part</li> </ul>	<ul style="list-style-type: none"> <li>E, 3, 4 is not applicable.</li> <li>E, 3, 4 is not applicable to Right-Hand Thread with Keyway</li> <li>MC=Applied on the Left End</li> <li>MQ=Applied on Q part</li> <li>ME=Applied on E part</li> <li>Existing Code MQ24</li> </ul>	<ul style="list-style-type: none"> <li>Not applicable when Q=7, 9, 16</li> <li>BQ=MX3</li> <li>BQ=Pitch×3</li> <li>BQ=Q-S, T-Pitch×3</li> <li>Only for One End Double Stepped Type, when 25:Q:4, Q:2:E:3</li> </ul>	<ul style="list-style-type: none"> <li>Not applicable to One End Double Stepped Type</li> <li>W=1mm Increment</li> <li>ZQ=Applied on Q part</li> <li>ZE=Applied on E part</li> <li>Existing Code Z015-W10-A10</li> <li>Specify ZE=Q</li> <li>Specify ZE=E</li> </ul>	<ul style="list-style-type: none"> <li>Not applicable to One End Stepped Type</li> <li>T-C-KQ≥2</li> <li>KQ(KQ)≥2</li> <li>When KQ, KE=Q, keyway R will be eliminated on the end.</li> <li>C≤60</li> <li>T-C-KQ≥2</li> <li>KQ(KQ)≥2</li> <li>When KQ, KE=Q, keyway R will be eliminated on the end.</li> </ul>
Ordering Code	FC5-PW10-FY1		SC3-SW10-SY7	MC2	BQ20	ZQ20	KQ8-C10

Specify an alteration position to be 2mm or more away from the stepped part. For details, see P.787

Do not specify multiple alterations in such a way that they overlap with each other in the rotating direction on the same shaft. For details, see P.787

When flat machining, wrench flats, square chamfering and keyway alterations are combined with each other, their orientations will be random. For details, see P.787

When adding multiple alterations, there must be 2mm or more clearance between each feature. For details, see P.787