Shapes and Materials of Precision Linear Shafts

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Induction hardened shafts for linear motion applications.

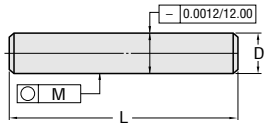
Shapes	Material: Case Hardened Steel, Induction Hardened, -	Material: Case Hardened Steel, Induction Hardened, Hard Chrome Plating	Material: 440C Stainless Steel, Induction Hardened, -	Pages
D	U-SFJ U-SFJS	U-PSFJ U-PSFJS	U-SSFJ U-SSFJS	P.39
	D: 1/8, 3/16, 1/4, 3/8, 1/2, 5/8, 3/4, 1", 1-1/4, 1-1/2			
D	U-SFJT	U-PSFJT	U-SSFJT	P.41
	D: 1/4, 3/8, 1/2, 5/8, 3/4, 1", 1-1/4, 1-1/2			
D	U-SFJW U-SFJWS	U-PSFJW U-PSFJWS	U-SSFJW U-SSFJWS	P.43
	D: 1/4, 3/8, 1/2, 5/8, 3/4, 1", 1-1/4, 1-1/2			
D	U-SFAN	U-PSFAN	U-SSFAN	P.45
	D: 1/4, 3/8, 1/2, 5/8, 3/4, 1", 1-1/4, 1-1/2			
D	U-SFAM	U-PSFAM	U-SSFAM	P.47
	D: 1/4, 3/8, 1/2, 5/8, 3/4, 1", 1-1/4, 1-1/2			
D	U-SFAD	U-PSFAD	U-SSFAD	P.49
	D: 1/4, 3/8, 1/2, 5/8, 3/4, 1", 1-1/4, 1-1/2			

Shapes	Material: Case Hardened Steel, Induction Hardened, –	Material: Case Hardened Steel, Induction Hardened, Hard Chrome Plating	Material: 440C Stainless Steel, Induction Hardened, –	Pages
D	U-SFAG	U-PSFAG	U-SSFAG	P.51
	D: 3/8, 1/2, 5/8, 3/4, 1", 1-1/4, 1-1/2			
D	U-SFAH	U-PSFAH	U-SSFAH	P.53
	D: 3/8, 1/2, 5/8, 3/4, 1", 1-1/4, 1-1/2			
D	U-SFAA	U-PSFAA	U-SSFAA	P.55
	D: 3/8, 1/2, 5/8, 3/4, 1", 1-1/4, 1-1/2			
D	U-SFAR	U-PSFAR	U-SSFAR	P.57
	D: 1/4, 3/8, 1/2, 5/8, 3/4, 1", 1-1/4			
D	U-SPJ	U-PSPJ	–	P.59
	D: 1/4, 3/8, 1/2, 5/8, 3/4, 1", 1-1/4, 1-1/2			
D	U-SPJT	U-PSPJT	–	P.61
	D: 1/4, 3/8, 1/2, 5/8, 3/4, 1", 1-1/4, 1-1/2			
D	U-SPJW	U-PSPJW	–	P.63
	D: 1/4, 3/8, 1/2, 5/8, 3/4, 1", 1-1/4, 1-1/2			

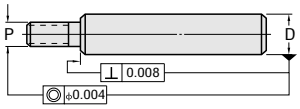
Basic Specifications of MISUMI's Precision Linear Shafts

Accuracy Standards

Circularity and Straightness



Concentricity and Perpendicularity



Circularity

Circularity of D over	Circularity of D up to	Circularity M
0.1250	0.5000	0.00015
0.5000	0.7500	0.00020
0.7500	1.5000	0.00025

Length Tolerance

Dimension L over	Dimension L up to	Tolerance (±)
0.38	6.00	0.010
6.00	24.00	0.030
24.00	60.00	0.050

Straightness

Straightness of 0.0012 inch per foot TIR cumulative.

Material, Hardness and Surface Treatment

Unplated Shafts

Method	Material	Hardness	Hardening Depth (D Section Only)
Induction Hardening	Case Hardened Steel	58 HRC~	0.020" (D = 1/8 to 3/8) 0.028" (D = 1/2 to 3/4) 0.040" (D = 1" to 1-1/2)
	440C Stainless Steel	56 HRC~	0.020" (D = 1/8 to 1/2) 0.028" (D = 5/8 to 1-1/2)

Hard Chrome Plated Shafts

Method	Material	Plating Hardness
Induction Hardening	Case Hardened Steel	750 HV

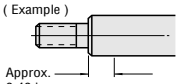
Plating Thickness: 0.0002" or more on D section only

Hard Chrome Plating: Applied on the polished D dimension surface of induction hardened Case Hardened Steel/440C Stainless Steel base material.

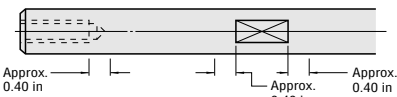
In the example below, induction hardening and hard chrome plating are applied only on ////D part. The other areas are not induction hardened or hard chrome plated.

Shaft edge (Thread effective length + about 0.40 in.) may have less hardness due to annealing.

(Example)



• All Male Thread



• Female Thread (Following Sizes)
When D ≤ 1.00, T ≥ D/2 Size Female Thread
When D = 1.50, T1.25
All NPT Threads

The areas that are not applied with either hardening or hard chrome plating on around 0.40 in. of the following:

- Retaining Ring
- Wrench Flats (Modification with SC, WSC)
- V-Groove (Modification with VC, WVC)/Set Screw Flat (Modification with FC, WFC)