

# Locating Pin for Jigs & Fixtures

## Precision

**Features:** For Precision Grade, P dimension tolerance is  $\pm 0.01$  or  $\pm 0.02$  (for Standard Grade,  $\pm 0.05$ ), concentricity is 0.01 or 0.02 (for Standard Grade, 0.03 or 0.05).

**Threaded**

RoHS 10

Type	Material	Hardness
LNNAN Round	4137 Alloy Steel	Hardened 35~40 HRC min.
LNNND Diamond		
TLNNAN Round	SCM415 Alloy Steel (JIS)	Carburized 55 HRC min. (Depth 0.7~0.8) Anti-Carburizing on Threads
TLNNND Diamond		

Reference:  $\sin 15^\circ = 0.259$   
 $\tan 15^\circ = 0.267$

Type	Material	Hardness	Surface Treatment
R-NNAN Round	4137 Alloy Steel	35~40 HRC min. (Surface 750 HV min.)	Hard Chrome Plating
R-NNND Diamond			
D-NNAN Round	D2 Tool Steel Equivalent	55 HRC min. (Surface 3000 HV min.)	Dicoat® Treated
D-NNND Diamond			

**Hardened / Carburized / Chrome Plated**

1 Dicoat® Treated Thread Shape

$e = P/2 \tan 15^\circ + R - (R/\sin 15^\circ)$

Dicoat® Treated items do not come with a center hole.

**Dicoat® Treated**

Dicoat® Treated will have the ( ) precision and Thread Shape will be 1.

Part Number				P	B	L	$\ell_1$	R	W
Type				0.1 mm Increment	1 mm Increment	Selection			
Hardened (Round) LNNAN	Carburized (Round) TLNNAN	Hard Chrome (Round) R-NNAN	Dicoat® (Round) D-NNAN	6	8.0-12.0	5 8 10	6	3	3
				8	10.0-16.0	5 8 10 12 15	10	4	3.5
				10	12.0-20.0	(5) (8) 10 12 15	12	5	4
				12	14.0-25.0	(8) 10 12 15 18	15	6	6
				16	18.0-32.0	(10) 12 15 18 20	18	8	8
(Diamond) LNNND	(Diamond) LATDN	(Diamond) R-NNND	(Diamond) D-NNND	20	22.0-35.0	12 15 18 20	22	8	9

⊗ L dimension in ( ) is not applicable to Diamond Shape and Dicoat® treatment. ⊕ B Dimension is selectable from 5 mm for Dicoat® Treated / Diamond Shape.

**Set Screw Type**

RoHS 10

Type	Material	Hardness
LNTAN Round	4137 Alloy Steel	Hardened 35~40 HRC min.
LNTDN Diamond		
TLNTAN Round	SCM415 Alloy Steel (JIS)	Carburized Treated Hardness: 55 HRC min. (Depth 0.7~0.8) Anti-Carburizing on Threads
TLNTDN Diamond		

Reference:  $\sin 15^\circ = 0.259$   
 $\tan 15^\circ = 0.267$

Type	Material	Hardness	Surface Treatment
R-NTAN Round	4137 Alloy Steel	35~40 HRC min. (Surface 750 HV min.)	Hard Chrome Plating
R-NTDN Diamond			
D-NTAN Round	D2 Tool Steel Equivalent	55 HRC min. (Surface 3000 HV min.)	Dicoat® Treated
D-NTDN Diamond			

**Hardened / Carburized / Chrome Plated**

$e = P/2 \tan 15^\circ + R - (R/\sin 15^\circ)$

Dicoat® Treated items do not come with a center hole.

**Dicoat® Treated**

Dicoat® Treated items will have the ( ) precision.

Part Number				P	B	L	$\ell_1$	d	R	Applicable Set Screws	W
Type				0.1 mm Increment	1 mm Increment	Selection					
Hardened (Round) LNTAN	Carburized (Round) TLNTAN	Hard Chrome (Round) R-NTAN	Dicoat® (Round) D-NTAN	6	8.0-12.0	5	8	4	3	M5	3
				8	10.0-16.0	10	8	5	4		3.5
				10	12.0-20.0	5	5	7	5	M6	4
				12	14.0-25.0	12	10	9	6		6
				16	18.0-32.0	10	10	13	8		8
(Diamond) LNTDN	(Diamond) TLNTDN	(Diamond) R-NTDN	(Diamond) D-NTDN	20	22.0-35.0			17	8	M8	9

⊕ B Dimension is selectable from 5 mm for Dicoat® Treated / Diamond Shape. ⊕ D16, D20 unavailable for R-NTAN, D-NTAN, R-NTDN, D-NTDN

**Part Number Alterations**

Part Number: LNNAN 10 - P12.0 - B10 - L5 - KD

**Part Number Example**

Part Number: LNNAN 6 - P8.0 - B14 - L10

Alterations	Grooves for Wear Sign	Flat Machining	Thread Diameter	Flat Position	Thread Length
<b>Code</b>	<b>MK</b>	<b>KD</b>	<b>MC</b>	<b>KC</b>	<b>FC</b>
<b>Spec.</b>	Machine 4 grooves on B Dimension. The wear and tear of the grooves indicate the degree of wears. ⊕ Applicable to Hardened, Carburized and Round Shape Products only ⊕ Applicable when $B \geq 4$ Groove Depth: 0.2mm ( $\pm 0.05$ mm) Groove Shape: V Groove (90°)	<b>Ordering Code:</b> KD Machining on one side. ⊕ H-P $\geq 2$ ⊕ Applicable to Round Shape Type only.	<b>Ordering Code:</b> MC8 Changes the thread diameter. ⊕ D/3 $\leq$ M<D ⊕ Mmin3 ⊕ Applicable to Threaded Type only.	<b>Ordering Code:</b> KC Changes the flat position to 90° from the standard position 0°. ⊕ Applicable to Diamond Shape Type only.	<b>Ordering Code:</b> FC15 Changes the thread length. FC=1 mm Increment D6-10: M $\leq$ FC $\leq$ Mx3 D12, 16: M $\leq$ FC $\leq$ Mx2.5 D20: M $\leq$ FC $\leq$ Mx2 ⊕ Applicable to Threaded only. ⊗ Not applicable to Dicoat® and TiCN treatment.

# Locating Pin for Jigs & Fixtures

## Precision & Pilot Shape Selectable

**Features:** For Precision Grade, P dimension tolerance is  $\pm 0.01$  or  $\pm 0.02$  (for Standard Grade,  $\pm 0.05$ ), concentricity is 0.01 or 0.02 (for Standard Grade, 0.03 or 0.05). Tip shape is selectable.

**Threaded**

RoHS 10

Type	Material	Hardness
SLNNA Round	4137 Alloy Steel	35~40 HRC min.
SLNND Diamond		
TSLNNA Round	SCM415 Alloy Steel (JIS)	Carburized 55 HRC min. (Depth 0.7~0.8) Anti-Carburizing on Threads
TSLNND Diamond		

Reference:  $\sin 15^\circ = 0.259$   
 $\tan 15^\circ = 0.267$      $\sin 30^\circ = 0.5$   
 $\tan 30^\circ = 0.577$      $\sin 45^\circ = 0.707$   
 $\tan 45^\circ = 1$

Type	Material	Hardness	Surface Treatment
R-SNNA Round	4137 Alloy Steel	35~40 HRC min. (Surface 750 HV min.)	Hard Chrome Plating
R-SNND Diamond			
D-SNNA Round	D2 Tool Steel Equivalent	55 HRC min. (Surface 3000 HV min.)	Dicoat® Treated
D-SNND Diamond			

**Hardened / Carburized**

Tip Shape: Select from the diagram on the right.

**Dicoat® Treated**

Tip Shape: Select from the diagram on the right.

Part Number				P	B	L	$\ell_1$	R	W
Type				0.1 mm Increment	1 mm Increment	Selection			
Hardened (Round) SLNNA	Carburized (Round) TSLNNA	Hard Chrome (Round) R-SNNA	Dicoat® (Round) D-SNNA	6	8.0-12.0	5 8 10	6	3	3
				8	10.0-16.0	5 8 10 12 15	10	4	3.5
				10	12.0-20.0	(5) (8) 10 12 15	12	5	4
				12	14.0-25.0	(8) 10 12 15 18	15	6	6
				16	18.0-32.0	(10) 12 15 18 20	18	8	8
(Diamond) SLNND	(Diamond) TSLNND	(Diamond) R-SNND	(Diamond) D-SNND	20	22.0-35.0	12 15 18 20	22	8	9

⊗ Angle A \*30 is not applicable to Tip Shape B. Select from Precision, No Shoulder P.1542 ⊗ L dimension in ( ) is not applicable to diamond shape and Dicoat® treatment.

Part Number				P	B	L	A	E	$\ell_1$	R	W
Type				0.1 mm Increment	1 mm Increment	Selection	A Selection	(Shape A) 1 mm Inc.			
Hardened (Round) SLNNA	Carburized (Round) TSLNNA	Hard Chrome (Round) R-SNNA	Dicoat® (Round) D-SNNA	6	8.0-12.0	5 8 10	*30	1-10	6	3	3
				8	10.0-16.0	5 8 10 12 15			10	4	3.5
				10	12.0-20.0	(5) (8) 10 12 15	⊕ 2-30	1-10	12	5	4
				12	14.0-25.0	(8) 10 12 15 18			15	6	6
				16	18.0-32.0	(10) 12 15 18 20			18	8	8
(Diamond) SLNND	(Diamond) TSLNND	(Diamond) R-SNND	(Diamond) D-SNND	20	22.0-35.0	12 15 18 20	120	1-10	22	8	9

⊕ B Dimension is selectable from 5 mm - for Dicoat® Treated / Diamond Shape. ⊕ D16, D20 unavailable for R-SNNA, D-SNNA, R-SNND, D-SNND part types.

**Part Number Example**

Part Number: SLNND A 6 - P8.0 - B14 - L8 - A30 - E2

**Part Number Alterations**

Part Number: D-SNNA B 10 - P.12.0 - B10 - L5 - A60 - KD

Alterations	Grooves for Wear Sign	Flat Machining	Thread Diameter	Flat Position	Thread Length
<b>Code</b>	<b>MK</b>	<b>KD</b>	<b>MC</b>	<b>KC</b>	<b>FC</b>
<b>Spec.</b>	Machine 4 grooves on B Dimension. The wear and tear of the grooves indicate the degree of wears. ⊕ Applicable to Hardened, Carburized and Round Shape Products only ⊕ Applicable when $B \geq 4$ Groove Depth: 0.2mm ( $\pm 0.05$ mm) Groove Shape: V Groove (90°)	<b>Ordering Code:</b> KD Machining on one side. ⊕ Applicable to Round Shape Type only.	<b>Ordering Code:</b> MC8 Changes the thread diameter. ⊕ D/3 $\leq$ M<D ⊕ Mmin3 ⊕ Applicable to Threaded Type only.	<b>Ordering Code:</b> KC Changes the flat position to 90° from the standard position 0°. ⊕ Applicable to Diamond Shape Type only.	<b>Ordering Code:</b> FC15 Changes the thread length. FC=1 mm Increment D6-10: M $\leq$ FC $\leq$ Mx3 D12, 16: M $\leq$ FC $\leq$ Mx2.5 D20: M $\leq$ FC $\leq$ Mx2 ⊕ Applicable to Threaded only. ⊗ Not applicable to Dicoat® and TiCN treatment.

Locating Pins/Bushings for Locating Pins

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