


Locating Pins for Jigs & Fixtures

Set Screw Mount (h7)

Features: Short retaining part is used for thin locator. For Standard Grade, P dimension tolerance is ± 0.05 (for Precision Grade, ± 0.01 or ± 0.02), concentricity is 0.03 or 0.05 (for Precision Grade, 0.01 or 0.02).

Shouldered Type



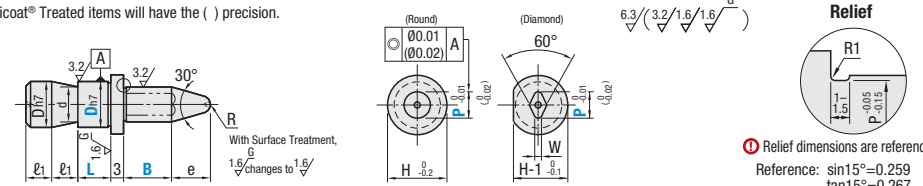
RoHS 10

Type	Circumference Groove	Shape	Material	Hardness
ELASA	D-LASA	Round	4137 Alloy Steel	Treated Hardness 35-40 HRC min.
		Diamond		
TELASA	R-LASA	Round	SCM415 Alloy Steel (JIS)	Carburized Treated Hardness 55 HRC min. (Depth 0.7-0.8) Anti-Carburizing on Threads
		Diamond		

Type	Circumference Groove	Shape	Material	Hardness	Surface Treatment
D-LASA	D-LASD	Round	D2 Tool Steel or Equivalent	55 HRC min. (Surface 3000 HV min.)	Dicoat® Treated
		Diamond			
R-LASA	R-LASD	Round	4137 Alloy Steel	35-40 HRC min. (Surface 750 HV min.)	Hard Chrome Plating
		Diamond			

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

Dicoat® Treated items will have the () precision.




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

Part Number				P	B	L	H	R	W	
Type	D _{h7}	0.1 mm Increment	1 mm Increment	1 mm Increment						
Hard Chrome (Round) ELASA	Dicoat® (Round) TELASA	Hard Chrome (Round) R-LASA	Dicoat® (Round) D-LASA	6 -0.012	3.0-7.0	2-30 (B ≤ Px4)	5-10	9	1	1-2
				8 0	3.0-9.0			11	1.5	
				10 -0.015	4.5-12.0			13	2	1-3
(Diamond) ELASD	(Diamond) TELASD	(Diamond) R-LASD	(Diamond) D-LASD	12 0	9.0-13.0			15	3	4
				16 -0.018	13.0-16.0			19	4	5

W Dimension D6, D8: W=2 when P>5.0; D10: W=1 when P<5.0; W=2 when 5.0 ≤ P ≤ 7.0; W=3 when P>7.0. B dimension of Dicoat treated products are to be specified from 5mm-

No Shoulder Type



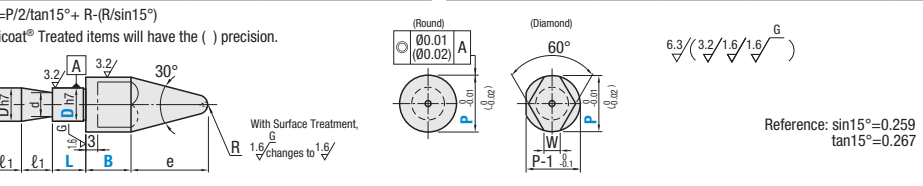
RoHS 10

Type	Circumference Groove	Shape	Material	Hardness
ELNSA	D-LNSA	Round	4137 Alloy Steel	35-40 HRC min.
		Diamond		
TELNSA	R-LNSA	Round	SCM415 Alloy Steel	Carburized Hardness 55 HRC min. (Depth 0.7-0.8) Anti-Carburizing on Thread
		Diamond		

Type	Circumference Groove	Shape	Material	Hardness	Surface Treatment
D-LNSA	D-LNSD	Round	D2 Tool Steel or Equivalent	55 HRC min. (Surface 3000 HV min.)	Dicoat® Treated
		Diamond			
R-LNSA	R-LNSD	Round	4137 Alloy Steel	35-40 HRC min. (Surface 750 HV min.)	Chrome Plating
		Diamond			

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

Dicoat® Treated items will have the () precision.



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

Part Number				P	B	L	R	W	
Type	D _{h7}	0.1 mm Increment	1 mm Increment	1 mm Increment					
Hardened (Round) ELNSA	Carburized (Round) TELNSA	Hard Chrome (Round) R-LNSA	Dicoat® (Round) D-LNSA	6 -0.012	8.0-12.0	2-30	5-10	3	3
				8 0	10.0-16.0			4	3.5
				10 -0.015	12.0-20.0			6	4
(Diamond) ELNSD	(Diamond) TELNSD	(Diamond) R-LNSD	(Diamond) D-LNSD	12 0	14.0-25.0			8	6
				20 -0.021	22.0-35.0			8	9

Part Number Example

Part Number: P - B - L

Type: D

ELNSA 6 - P5.0 - B10 - L5

ELNSA 8 - P12.0 - B15 - L8

Part Number Alterations

Part Number: P - B - L - (KC, KD, SC, RTC)

ELASA10 - P10.0 - B15 - L10 - KD


Alterations	Flat Position	Flat Machining	Wrench Flats	Upper Relief Radius Change
	Shouldered / No Shoulder	Shouldered H-P ≥ 2	No Flange	RTC
Code	KC	KD	SC	RTC
Spec.	Ordering Code: KC Changes the flat position to 90° from the standard position 0°. Applicable to Diamond Shape Type only.	Ordering Code: KD Machining on one side. Applicable to Round Shape only.	Ordering Code: SC Adds wrench flats. Selection: R1 R2 R3 Applicable to Shouldered only. RTC ≤ (H-P)/2 B ≥ 5	Ordering Code: RTC2 Changes the relief to the following radius R. Selection: R1 R2 R3 Applicable to Shouldered only. RTC ≤ (H-P)/2 B ≥ 5

Locating Pins for Jigs & Fixtures

Set Screw Mount (h7) & Pilot Tip Shape Selectable

Features: Short retaining part is used for thin locator. For Standard Grade, P dimension tolerance is ± 0.05 (for Precision Grade, ± 0.01 or ± 0.02), concentricity is 0.03 or 0.05 (for Precision Grade, 0.01 or 0.02).

Shouldered Type

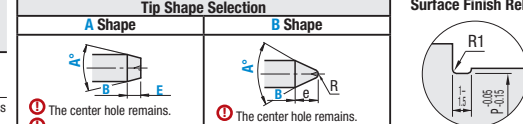


RoHS 10

Type	Circumference Groove	Notch	Shape	Material	Hardness
ELASA	D-LASA	ELACA	Round	4137 Alloy Steel	Treated Hardness 35-40 HRC min.
		ELACD	Diamond		
TELASA	R-LASA	TELACA	Round	4115 Alloy Steel	Carburized Treated Hardness 55 HRC min. (Depth 0.7-0.8)
		TELACD	Diamond		

Tip Shape Selection

A Shape B Shape



The center hole remains. e = P/2 tan(A/2) ≥ 0.73

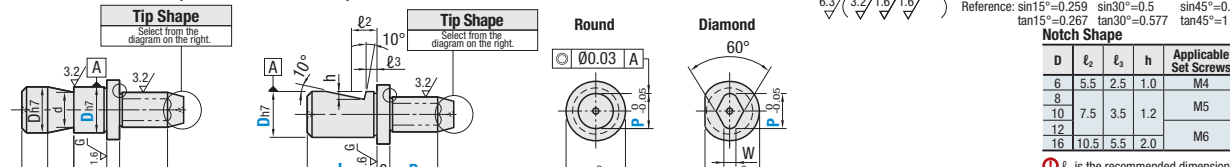
Relief dimensions are reference values.

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

Circumference Groove Shape

Notch Shape

Tip Shape: Select from the diagram on the right.




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

Part Number				P	B	L	A	E	H	R	W	
Type	Circumference Groove	Notch	Tip Shape	D _{h7}	0.1 mm Increment	1 mm Increment	Notch Shape Selection	(Shape A) 1 mm Inc.				
Hardened (Round) ELASA	Hardened (Round) TELASA	Hardened (Round) ELACA	Carburized (Round) TELACA	A (Tapered)	6 -0.012	3.0-8.0	10 12 16	30	1-10	9	1	1-2
				B (Taper R)	8 0	3.0-0.0	12 16 19	60		11	1.5	
					10 -0.015	4.5-12.0	12 16 19 20	90		13	2	1-3
(Diamond) ELASD	(Diamond) TELASD	(Diamond) ELACD	(Diamond) TELACD		12 0	9.0-14.0	12 16 19 20	120		15	3	4
					16 -0.018	13.0-18.0	19 20 25			19	4	5

W Dimension D6, D8: W=2 when P>5.0; D10: W=1 when P<5.0; W=2 when 5.0 ≤ P ≤ 7.0; W=3 when P>7.0. Conventional RC alteration (change of angle) can be substituted with Tip Shape B.

No Shoulder Type

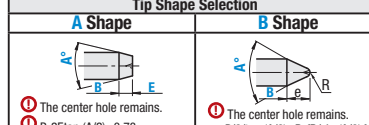


RoHS 10

Type	Circumference Groove	Notch	Shape	Material	Hardness
ELNSA	D-LNSA	ELNCA	Round	4137 Alloy Steel	35-40 HRC min.
		ELNCD	Diamond		
TELNSA	R-LNSA	TELNCA	Round	SCM415 Alloy Steel	Anti-Carburizing on Thread 55 HRC min. (Depth 0.7-0.8) Anti-Carburizing on Thread
		TELNCD	Diamond		

Tip Shape Selection

A Shape B Shape



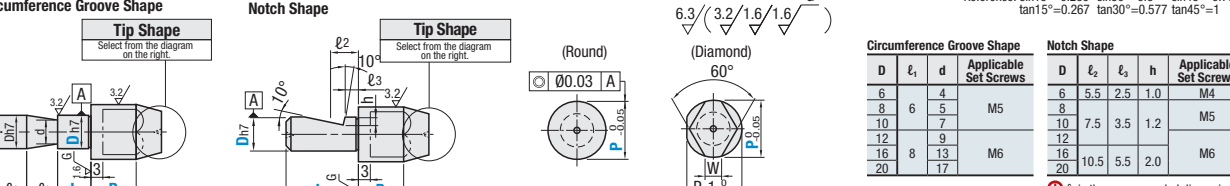
The center hole remains. e = P/2 tan(A/2) ≥ 0.73

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

Circumference Groove Shape

Notch Shape

Tip Shape: Select from the diagram on the right.



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

Part Number				P	B	L	A	E	R	W	
Type	Circumference Groove	Notch	Tip Shape	D _{h7}	0.1 mm Increment	1 mm Increment	Notch Shape Selection	(Shape A) 1 mm Increment			
Hardened (Round) ELNSA	Hardened (Round) TELNSA	Hardened (Round) ELNCA	Carburized (Round) TELNCA	A (Tapered)	6 -0.012	8.0-12.0	10 12 16	*30	1-10	3	3
				B (Taper R)	8 0	10.0-16.0	12 16 19	60		4	3.5
					10 -0.015	12.0-20.0	12 16 19	90		6	4
(Diamond) ELNSD	(Diamond) TELNSD	(Diamond) ELNCD	(Diamond) TELNCD		12 0	14.0-25.0	12 16 19 20	120		8	6
					20 -0.021	22.0-35.0	19 20 25			8	9

Conventional RC alteration (change of angle) can be substituted with Tip Shape B. B Dimension is selectable from 5 mm - for Diamond Shape.

Part Number Example

Part Number: P - B - L - A - E

Type: Tip Shape D

ELNSA B 6 - P8.0 - B10 - L10 - A60

Part Number Alterations

Part Number: P - B - L - A - E - (KC / KD / SC / RTC)

ELNSAB10 - P12.8 - B15 - L10 - A60 - KD

Alterations	Grooves for Wear Sign	Flat Position	Flat	Wrench Flats	Upper Relief Radius Change	Tip Angle Change
		Shouldered / No Shoulder	Shouldered H-P ≥ 2	No Flange	Dicoat® RTC	Others RTC
Code	MK	KC	KD	SC	RTC	RC
Spec.	Machine 4 grooves at B Dimension. The wear and tear of the grooves indicate the degree of wear. Applicable to Hardened, Carburized and Round Shape Products only. Applicable when B ≥ 4 When used together with RTC, the groove starts from the area of R value + 1 mm. Groove Depth: 0.2mm (±0.05 mm) Groove Shape: V Groove (90°)	Ordering Code: KC Changes the flat position to 90° from the standard position 0°. Applicable to Diamond shape only.	Ordering Code: KD Machining on one side. Applicable to Round Shape.	Ordering Code: SC Adds wrench flats. Selection: R1 R2 R3 Applicable to Round Shape with Shoulder only.	Ordering Code: RTC2 Changes the relief to the following radius R. Selection: R1 R2 R3 Applicable to Shouldered only. RTC ≤ (H-P)/2 B ≥ 5	Ordering Code: RC60 Changes the tip angle. Selection: 60°, 90°, 120°