

Locating Pins for Fixtures - Pedestal Pins / Height Adjusting Pins

Height Adjusting Washers / Locating Pin Holders for Fixtures Threaded / Tapped

The pocket is to collect dust (spatter etc.) generated during welding.

RoHS

Type	Material	Hardness
PKMFR (No Pocket Type)	SCM415	Carburized Treated Hardness: 55HRC - (Depth 0.7 - 0.8)
MFR (No Pocket Type)	SCM415	Carburized Treated Hardness: 55HRC - (Depth 0.7 - 0.8)

Part Number Type	H	D 1mm Increment	P 0.1mm Increment	B 1mm Increment	L 1mm Increment	T 1mm Increment	M
KMFR	18, 22, 25	12-20	8.0-12.0	5-10	3-10	15-40	6 8
MFR	28, 30	H-2>D	8.0-17.0				

Ordering Example: **KMFR30** - D15 - P8.0 - B8 - L5 - T18 - M6

Alterations

Wear Groove Example: Locating of work piece in both vertical and horizontal directions is possible. It is possible with the pocket to collect dust (spatter etc.) generated during welding. Usable as locating pins for arc welding processes, during which a large amount of spatter.

RoHS

Type	Material	Hardness
HUPNA (Threaded)	SCM435	Treated Hardness 35-40HRC
HUPND (Diamond)	SCM435	Treated Hardness 35-40HRC
THUPNA (Threaded)	SCM415	Carburized Treated Hardness: 55HRC - (Depth 0.7 - 0.8)
THUPND (Diamond)	SCM415	Carburized Treated Hardness: 55HRC - (Depth 0.7 - 0.8)

Reference: $\sin 15^\circ = 0.259$, $\sin 30^\circ = 0.5$, $\sin 45^\circ = 0.707$, $\sin 60^\circ = 0.866$, $\tan 15^\circ = 0.267$, $\tan 30^\circ = 0.577$, $\tan 45^\circ = 1$, $\tan 60^\circ = 1.732$

Threaded and **Set Screw** diagrams showing dimensions and tip shapes (A, B, C).

Tip Shape Selectable diagrams showing A Shape and B Shape with center hole details.

Part Number Type	Tip Shape	Dh7	P 0.1mm Increment	B 1mm Increment	L 1mm Increment	T 0.1mm Increment	H 1mm Increment	A	E (Shape A) 1mm Increment	W	
Threaded HUPNA HUPND THUPNA THUPND	A	6	3.0-7.0	5	8 10	9-20	30	6	8	1(2)	
		8	7.1-12.0	5	8 10 12 15	11-20	30	10	8	3	
		10	9.1-16.0	5	8 10 12 15	11-20	30	12	10	1(2)	
		12	12.1-20.0	5	8 10 12 15	11-20	30	14	10	3	
		14	14.1-25.0	5	8 10 12 15	11-20	30	16	10	3	
		16	18.1-32.0	5	8 10 12 15	11-20	30	18	10	3	
	Set Screw HUPTA HUPTD THUPTA THUPTD	B	10T	4.5-12.0	5-50 (B≤Px4)	(5) (8) 10 12 15	5.0-20.0	13-25	90	1-15	1-3
			12	4.5-12.0	5-50 (B≤Px4)	(8) 10 12 15 18	15-30	120	15	5	4
			14	9.0-14.0	5-50 (B≤Px4)	(8) 10 12 15 18	15-30	120	15	5	4
			16	14.1-25.0	5-50 (B≤Px4)	(10) 12 15 18 20	19-35	120	15	5	4
			18	18.1-32.0	5-50 (B≤Px4)	(10) 12 15 18 20	19-35	120	15	5	4
			20	18.1-32.0	5-50 (B≤Px4)	(10) 12 15 18 20	19-35	120	15	5	4

Ordering Example: **HUPNA** A 10 - P4.8 - B10 - L10 - T20.0 - H20 - A60 - E5

Alterations: **HUPTA**10 - P8.0 - B10 - T10.0 - H15 - A30 - KD

Alterations table showing Flat Position, Flat Machining, Wrench Flats, and Thread Dia. with diagrams and codes (KC, KD, SC, MC).

Spec. table detailing ordering codes and specifications for each alteration type.

RoHS

Type	Material	Hardness
HUK	SCM435	Hardening 35-40HRC
THUK	SCM415	Carburized Treated Hardness: 55HRC - (Depth 0.7 - 0.8)

Part Number Type	D	P 0.1mm Increment	T 0.1mm Increment	H 1mm Increment
HUK THUK	6	8.0-12.0		10-20
	8	10.0-16.0		12-20
	10	12.0-20.0	5.0-20.0	14-25
	12	14.0-25.0		16-30
	16	18.0-32.0		20-35

Ordering Example: **HUK6** - P11.8 - T10.0 - H20

Feature: Can be used in combination with cylinder when workpiece insertion and extraction is difficult. Number of parts can be reduced by using Integrated Type.

Holder, Integrated and **Holder** diagrams showing dimensions and tip shapes.

Integrated, Threaded and **Integrated, Tapped** diagrams showing dimensions and tip shapes.

Tip Shape Selectable diagrams showing A Shape and B Shape with center hole details.

Part Number Type	Dg6	P(H7)	L 1mm Increment	F 1mm Increment	M Threaded	M Tapped
Holder (Threaded) (Tapped) YGID YGIDB	16	8	70-200	5-25	6 8 10	8 10
	20	8 10 12			8 10	10 14
	25	10 12 16				10 14 18
	30	12 16				

Part Number Type	Tip Shape	Dg6	P 0.1mm Increment	B 1mm Increment	L 1mm Increment	A	E (Shape A) 1mm Increment	M Threaded	M Tapped	R
Integrated (Threaded) (Tapped) YGIDP YGIDPB	A	12	6.0-11.0	5-35 (B≤Px4)	60-150	30	1-10	6 8 10	8 10	3
		20	6.0-16.0			60		6 8 10 8 10	10 14	
	B	25	6.0-16.0			90		8 10	10 14 18	
		30	16.0-24.0			120			10 14 18	4

Ordering Example: **YGIDP** B 20 - P12.8 - B30 - L100 - A30 - M8

Alterations table showing Flat Machining, Wrench Flats, Side Hole, and Thread Length with diagrams and codes (KD, SC, RH, FC).

Spec. table detailing ordering codes and specifications for each alteration type.

Locating Pins for Fixtures

Standard Grade, No Shoulder

Features: For Standard Grade, P Dim. 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).

Threaded

Type	Material	Hardness	Type	Material	Hardness	Surface Treatment
ELNNA Round	SCM435	Hardening 35-40HRC	R-LNNA Round	SCM435	35-40HRC (Surface 750HV ~)	Hard Chrome Plating
ELNND Diamond	SCM435	Hardening 35-40HRC	R-LNND Diamond	SCM435	35-40HRC (Surface 750HV ~)	Hard Chrome Plating
TELNNA Round	SCM415	Carburized 55HRC~ (depth 0.7~0.8) / Anti-carburizing on Threads	D-LNNA Round	SKD11 Equivalent	55HRC~ (Surface 3000HV)	Dicoat® Treated
TELNND Diamond	SCM415	Carburized 55HRC~ (depth 0.7~0.8) / Anti-carburizing on Threads	D-LNND Diamond	SKD11 Equivalent	55HRC~ (Surface 3000HV)	TiCN Treatment

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

① Dicoat® Treated / TiCN Thread Shape

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

② Dicoat® Treated / TiCN Treated items do not come with a center hole.

Part Number	Type	D _{H7}	P	B	L Selection	L ₁	R	W	Unit Price											
									ELNNA	ELNND	TELNNA	TELNND	R-LNNA	R-LNND	D-LNNA	D-LNND	H-LNNA	H-LNND		
6	Hardened (Round)	6	8.0-12.0	5	5 8 10	6	3	3												
8	Carburized (Round)	8	10.0-16.0	5	5 8 10 12 15	10	4	3.5												
10	Hard Chrome (Round)	10	12.0-20.0	5	(5) (8) 10 12 15	12	4	4												
10T	Dicoat (Round)	10T	12.0-20.0	5	(5) (8) 10 12 15	15	5	5												
12	TiCN (Diamond)	12	14.0-25.0	8	(8) 10 12 15 18	15	6	6												
16	Dicoat (Diamond)	16	18.0-32.0	10	(10) 12 15 18 20	18	8	8												
20	TiCN (Diamond)	20	22.0-35.0	12	12 15 18 20	22	8	9												

③ L dimension in () is not applicable to Diamond Shape, Dicoat® and TiCN treatment.
④ B Dimension is selectable from 5 mm ~ for Dicoat® Treated / TiCN Treated Products/Diamond Shape.

Set Screw

Type	Material	Hardness	Type	Material	Hardness	Surface Treatment
ELNTA Round	SCM435	Hardening 35-40HRC	R-LNTA Round	SCM435	35-40HRC (Surface 750HV ~)	Hard Chrome Plating
ELNTD Diamond	SCM435	Hardening 35-40HRC	R-LNTD Diamond	SCM435	35-40HRC (Surface 750HV ~)	Hard Chrome Plating
TELNTA Round	SCM415	Carburized 55HRC~ (depth 0.7~0.8) / Anti-carburizing on Threads	D-LNTA Round	SKD11 Equivalent	55HRC~ (Surface 3000HV)	Dicoat® Treated
TELNTD Diamond	SCM415	Carburized 55HRC~ (depth 0.7~0.8) / Anti-carburizing on Threads	D-LNTD Diamond	SKD11 Equivalent	55HRC~ (Surface 3000HV)	TiCN Treatment

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

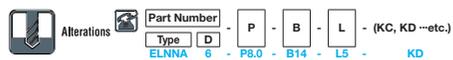
① Dicoat® Treated / TiCN Treated items will have the () precision.

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

② Dicoat® Treated / TiCN Treated items do not come with a center hole.

Part Number	Type	D _{H7}	P	B	L	L ₁	d	R	Applicable Set Screw	W	Unit Price									
											ELNTA	ELNTD	TELNTA	TELNTD	R-LNTA	R-LNTD	D-LNTA	D-LNTD	H-LNTA	H-LNTD
6	Hardened (Round)	6	8.0-12.0	5	5 8 4 3	M5	3													
8	Carburized (Round)	8	10.0-16.0	5	5 8 5 4	M5	3.5													
10	Hard Chrome (Round)	10	12.0-20.0	10	8 7 4	M6	4													
10T	Dicoat (Round)	10T	12.0-20.0	5	5 8 7 5	M6	5													
12	TiCN (Diamond)	12	14.0-25.0	12	10 9 6	M8	6													
16	Dicoat (Diamond)	16	18.0-32.0	12	10 13 8	M8	8													
20	TiCN (Diamond)	20	22.0-35.0	12	10 17 8	M8	9													

③ B Dimension is selectable from 5 mm ~ for Dicoat® Treated / TiCN Treated Products / Diamond Shape.



Alterations	Wear Groove Alterations	Flat Position	Flat Machining	Thread Dia.	Thread Length
Code	MK	KC	KD	MC	FC
Drill 4 grooves at B Dimension. The wear and tear of the grooves indicate the degree of wear. ④ Applicable to Hardening, Carburized and Round Shape Products only Groove Depth: 0.2mm (±0.05mm) Groove Shape: V Groove (90°)	Ordering Code KC Changes the flat position to 90° from the standard position 0°. ④ Applicable to Diamond Shape Type only.	Ordering Code KD Machining on one side. ④ D3: M-C ④ Mmin3 ④ Applicable to Threaded only.	Ordering Code MC8 Changes the thread diameter. ④ D3: M-C ④ Mmin3 ④ Applicable to Threaded only.	Ordering Code FC15 Changes the thread length. FC=1mm Increment D6-10 : M-FC: Mx3 D12, 16 : M-FC: Mx2.5 D20 : M-FC: Mx2 ④ Applicable to Threaded only. ④ Not applicable to Dicoat® and TiCN treatment.	

Locating Pins for Fixtures

Tip Shape Selectable, Standard Grade, No Shoulder

Features: For Standard Grade, P Dim. 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).

Threaded

Type	Material	Hardness	Type	Material	Hardness	Surface Treatment
SELNNA Round	SCM435	Hardening 35-40HRC	D-SLNNA Round	SKD11 Equivalent	55HRC ~ (Surface 3000HV)	Dicoat® Treated
SELNND Diamond	SCM435	Hardening 35-40HRC	D-SLNND Diamond	SKD11 Equivalent	55HRC ~ (Surface 3000HV)	Dicoat® Treated
TSELNNA Round	SCM415	Carburized 55HRC~ (depth 0.7~0.8) / Anti-carburizing on Threads	TSELNNA Round	SCM415	Carburized 55HRC~ (depth 0.7~0.8) / Anti-carburizing on Threads	Dicoat® Treated items will have the () precision and Thread Shape will be ①.
TSELNND Diamond	SCM415	Carburized 55HRC~ (depth 0.7~0.8) / Anti-carburizing on Threads	TSELNND Diamond	SCM415	Carburized 55HRC~ (depth 0.7~0.8) / Anti-carburizing on Threads	Dicoat® Treated items will have the () precision and Thread Shape will be ①.

Reference: $\sin 15^\circ = 0.259$ $\tan 15^\circ = 0.267$ $\sin 30^\circ = 0.5$ $\tan 30^\circ = 0.577$ $\sin 45^\circ = 0.707$ $\tan 45^\circ = 1$ $\sin 60^\circ = 0.866$ $\tan 60^\circ = 1.732$

① Dicoat® Treated - TiCN Thread Shape

Tip Shape Select from the diagram on the right.

② Only the Shape B Dicoat® Treated items do not come with a center hole.

Part Number	Type	Tip Shape	D _{H7}	P	B	L Selection	A Selection	E	L ₁	R	W	Unit Price								
												SELNNA	SELNND	TSELNNA	TSELNND	D-SLNNA	D-SLNND			
6	Hardened (Round)	A	6	8.0-12.0	5	5 8 10	*30	6	3	3										
8	Carburized (Round)	A	8	10.0-16.0	5	5 8 10 12 15	60	10	4	3.5										
10	Hard Chrome (Round)	A	10	12.0-20.0	5	(5) (8) 10 12 15	90	12	4	4										
10T	Dicoat (Round)	A	10T	12.0-20.0	5	(5) (8) 10 12 15	120	15	5	5										
12	TiCN (Diamond)	B	12	14.0-25.0	8	(8) 10 12 15 18	150	15	6	6										
16	Dicoat (Diamond)	B	16	18.0-32.0	10	(10) 12 15 18 20	180	18	8	8										
20	TiCN (Diamond)	B	20	22.0-35.0	12	12 15 18 20	220	22	8	9										

③ Angle A*30 is not applicable to Tip Shape B. Select from Standard Grade, No Shoulder (P.1691).
④ L dimension in () is not applicable to Diamond Shape and Dicoat® treatment.
⑤ B Dimension is selectable from 5 mm ~ for Dicoat® Treated / Diamond Shape.

Set Screw

Type	Material	Hardness	Type	Material	Hardness	Surface Treatment
SELNTA Round	SCM435	Hardening 35-40HRC	D-SLNTA Round	SKD11 Equivalent	55HRC ~ (Surface 3000HV)	Dicoat® Treated
SELNTD Diamond	SCM435	Hardening 35-40HRC	D-SLNTD Diamond	SKD11 Equivalent	55HRC ~ (Surface 3000HV)	Dicoat® Treated
TSELNTA Round	SCM415	Carburized 55HRC~ (depth 0.7~0.8) / Anti-carburizing on Threads	TSELNTA Round	SCM415	Carburized 55HRC~ (depth 0.7~0.8) / Anti-carburizing on Threads	Dicoat® Treated items will have the () precision.
TSELNTD Diamond	SCM415	Carburized 55HRC~ (depth 0.7~0.8) / Anti-carburizing on Threads	TSELNTD Diamond	SCM415	Carburized 55HRC~ (depth 0.7~0.8) / Anti-carburizing on Threads	Dicoat® Treated items will have the () precision.

Reference: $\sin 15^\circ = 0.259$ $\tan 15^\circ = 0.267$ $\sin 30^\circ = 0.5$ $\tan 30^\circ = 0.577$ $\sin 45^\circ = 0.707$ $\tan 45^\circ = 1$ $\sin 60^\circ = 0.866$ $\tan 60^\circ = 1.732$

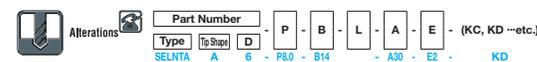
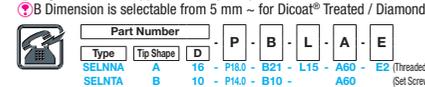
① Dicoat® Treated items will have the () precision.

Tip Shape Select from the diagram on the right.

② Only the Shape B Dicoat® Treated items do not come with a center hole.

Part Number	Type	Tip Shape	D _{H7}	P	B	L Selection	A Selection	E	L ₁	d	R	Applicable Set Screw	W	Unit Price							
														SELNTA	SELNTD	TSELNTA	TSELNTD	D-SLNTA	D-SLNTD		
6	Hardened (Round)	A	6	8.0-12.0	5	5 8 4 3	*30	6	3	3	M5	3									
8	Carburized (Round)	A	8	10.0-16.0	5	5 8 5 4	60	10	4	3.5	M5	3.5									
10	Hard Chrome (Round)	A	10	12.0-20.0	10	8 7 4	90	12	4	4	M6	4									
10T	Dicoat (Round)	A	10T	12.0-20.0	5	5 8 7 5	120	15	5	5	M6	5									
12	TiCN (Diamond)	B	12	14.0-25.0	12	10 9 6	150	15	6	6	M8	6									
16	Dicoat (Diamond)	B	16	18.0-32.0	12	10 13 8	180	18	8	8	M8	8									
20	TiCN (Diamond)	B	20	22.0-35.0	12	10 17 8	220	22	8	9	M8	9									

③ Angle A*30 is not applicable to Tip Shape B. Select from Standard Grade, No Shoulder (P.1691).
④ B Dimension is selectable from 5 mm ~ for Dicoat® Treated / Diamond Shape.



Alterations	Wear Groove Alterations	Flat Position	Flat Machining	Thread Dia.	Thread Length
Code	MK	KC	KD	MC	FC
Drill 4 grooves at B Dimension. The wear and tear of the grooves indicate the degree of wear. ④ Applicable to Hardening, Carburized and Round Shape Products only Groove Depth: 0.2mm (±0.05mm) Groove Shape: V Groove (90°)	Ordering Code KC Changes the flat position to 90° from the standard position 0°. ④ Applicable to Diamond Shape Type only.	Ordering Code KD Machining on one side. ④ D3: M-C ④ Mmin3 ④ Applicable to Threaded only.	Ordering Code MC8 Changes the thread diameter. ④ D3: M-C ④ Mmin3 ④ Applicable to Threaded only.	Ordering Code FC15 Changes the thread length. FC=1mm Increment D6-10 : M-FC: Mx3 D12, 16 : M-FC: Mx2.5 D20 : M-FC: Mx2 ④ Applicable to Threaded only. ④ Not applicable to Dicoat® and TiCN treatment.	

Locating Pins for Fixtures

Precision Grade, No Shoulder

Features: For Precision Grade, P Dim. Tolerance is -0.01 or -0.02 (for Standard Grade, -0.05), concentricity is 0.01 or 0.02 (for Standard Grade, 0.03 or 0.05).

Threaded

Type	Material	Hardness	Type	Material	Hardness	Surface Treatment	
LNNAN	Round	SCM435	R-NNAN	Round	35-40HRC	Hard Chrome	
LNNND	Diamond	SCM435	R-NNND	Diamond	(Surface 750HV ~)	Plating	
TLNNAN	Round	SCM415	D-NNAN	Round	SKD11	55HRC~	
TLNNND	Diamond	SCM415	D-NNND	Diamond	Equivalent	(Surface 3000HV)	Dicoat® Treated

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

① Dicoat® Treated Thread Shape

① Dicoat® Treated items will have the () precision and Thread Shape will be ①.1.

Part Number	Type	Dg6	P	B	L Selection	Unit Price																	
						L1	R	W	LNNAN	LNNND	TLNNAN	TLNNND	R-NNAN	R-NNND	D-NNAN	D-NNND							
Hardened (Round)	Carburized (Round)	Hard Chrome (Round)	Dicoat (Round)	DicoatR (Round)	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	4	4													
					10T	12.0-20.0	(5) (8) (10) (12) (15)	15	5	5													
(Diamond)	(Diamond)	(Diamond)	(Diamond)	(Diamond)	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													
					20	22.0-35.0	(12) (15) (18) (20)	22	8	9													

① L dimension in () is not applicable to Diamond Shape and Dicoat® treatment. ② B Dimension is selectable from 5 mm ~ for Dicoat® Treated / Diamond Shape.

Set Screw

Type	Material	Hardness	Type	Material	Hardness	Surface Treatment	
LNTAN	Round	SCM435	R-NTAN	Round	35-40HRC	Hard Chrome	
LNTDN	Diamond	SCM435	R-NTDN	Diamond	(Surface 750HV ~)	Plating	
TLNTAN	Round	SCM415	D-NTAN	Round	SKD11	55HRC~	
TLNTDN	Diamond	SCM415	D-NTDN	Diamond	Equivalent	(Surface 3000HV)	Dicoat® Treated

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

① Dicoat® Treated items will have the () precision.

① Dicoat® Treated items do not come with a center hole.

Part Number	Type	Dg6	P	B	L	L1	d	R	Applicable Set Screw	W	Unit Price												
											LNTAN	LNTDN	TLNTAN	TLNTDN	R-NTAN	R-NTDN	D-NTAN	D-NTDN					
Hardened (Round)	Carburized (Round)	Hard Chrome (Round)	Dicoat (Round)	DicoatR (Round)	6	8.0-12.0	5	8	4	3	M5	3											
					8	10.0-16.0	5	8	5	4	M5	3.5											
					10	12.0-20.0	10	8	7	4	M6	4											
					10T	12.0-20.0	5	8	7	5	M6	5											
(Diamond)	(Diamond)	(Diamond)	(Diamond)	(Diamond)	12	14.0-25.0	12	10	9	6	M8	6											
					16	18.0-32.0	12	10	13	8	M8	8											
					20	22.0-35.0	12	10	17	8	M8	9											

① B Dimension is selectable from 5 mm ~ for Dicoat® Treated / Diamond Shape.

Ordering Example

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

Part Number: LNTAN 8 - P12.0 - B12

Alterations

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

Alterations	Wear Groove Alterations	Flat Machining	Thread Dia.	Flat Position	Thread Length
Code: MK	Code: KD	Code: MC	Code: KC	Code: FC	
Drill 4 grooves at B dimension. The wear and tear of the grooves indicate the degree of wear.	Endring Code KD Changes the flat position to 90° from the standard position 0°.	Endring Code MC Changes the thread diameter.	Endring Code KC Changes the flat position to 90° from the standard position 0°.	Endring Code FC Changes the thread length.	

Locating Pins for Fixtures

Tip Shape Selectable, Precision Grade, No Shoulder

Features: For Precision Grade, P Dim. Tolerance is -0.01 or -0.02 (for Standard Grade, -0.05), concentricity is 0.01 or 0.02 (for Standard Grade, 0.03 or 0.05). Tip shape is selectable.

Threaded

Type	Material	Hardness	Type	Material	Hardness	Surface Treatment	
SLNNA	Round	SCM435	R-SNNA	Round	35-40HRC	Hard Chrome	
SLNND	Diamond	SCM435	R-SNND	Diamond	(Surface 750HV ~)	Plating	
TSNNA	Round	SCM415	D-SNNA	Round	SKD11	55HRC~	
TSNND	Diamond	SCM415	D-SNND	Diamond	Equivalent	(Surface 3000HV)	Dicoat® Treated

Reference: $\sin 15^\circ = 0.259$, $\sin 30^\circ = 0.5$, $\sin 45^\circ = 0.707$, $\sin 60^\circ = 0.866$, $\tan 15^\circ = 0.267$, $\tan 30^\circ = 0.577$, $\tan 45^\circ = 1$, $\tan 60^\circ = 1.732$

① Dicoat® Treated items will have the () precision and Thread Shape will be ①.1.

① Dicoat® Treated items do not come with a center hole.

Part Number	Type	Tip Shape	Dg6	P	B	L Selection	Unit Price																	
							L1	R	W	SLNNA	SLNND	TSNNA	TSNND	R-SNNA	R-SNND	D-SNNA	D-SNND							
Hardened (Round)	Carburized (Round)	Hard Chrome (Round)	Dicoat (Round)	DicoatR (Round)	DicoatR (Round)	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	4	4													
						10T	12.0-20.0	(5) (8) (10) (12) (15)	15	5	5													
(Diamond)	(Diamond)	(Diamond)	(Diamond)	(Diamond)	(Diamond)	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													
						20	22.0-35.0	(12) (15) (18) (20)	22	8	9													

① Angle A*30 is not applicable to Tip Shape B. Select from Precision Grade, No Shoulder (P1695). ② B Dimension is selectable from 5 mm ~ for Dicoat® Treated / Diamond Shape.

Set Screw

Type	Material	Hardness	Type	Material	Hardness	Surface Treatment	
SLNTA	Round	SCM435	R-SNTA	Round	35-40HRC	Hard Chrome	
SLNTD	Diamond	SCM435	R-SNTD	Diamond	(Surface 750HV ~)	Plating	
TSNTA	Round	SCM415	D-SNTA	Round	SKD11	55HRC~	
TSNTD	Diamond	SCM415	D-SNTD	Diamond	Equivalent	(Surface 3000HV)	DicoatR Treated

Reference: $\sin 15^\circ = 0.259$, $\sin 30^\circ = 0.5$, $\sin 45^\circ = 0.707$, $\sin 60^\circ = 0.866$, $\tan 15^\circ = 0.267$, $\tan 30^\circ = 0.577$, $\tan 45^\circ = 1$, $\tan 60^\circ = 1.732$

① Dicoat® Treated items will have the () precision and Thread Shape will be ①.1.

① Dicoat® Treated items do not come with a center hole.

Part Number	Type	Tip Shape	Dg6	P	B	L Selection	L1	d	R	Applicable Set Screw	W	Unit Price												
												SLNTA	SLNTD	TSNTA	TSNTD	R-SNTA	R-SNTD	D-SNTA	D-SNTD					
Hardened (Round)	Carburized (Round)	Hard Chrome (Round)	Dicoat (Round)	DicoatR (Round)	DicoatR (Round)	6	8.0-12.0	5	8	4	3	M5	3											
						8	10.0-16.0	5	8	5	4	M5	3.5											
						10	12.0-20.0	10	8	7	4	M6	4											
						10T	12.0-20.0	5	8	7	5	M6	5											
(Diamond)	(Diamond)	(Diamond)	(Diamond)	(Diamond)	(Diamond)	12	14.0-25.0	12	10	9	6	M8	6											
						16	18.0-32.0	12	10	13	8	M8	8											
						20	22.0-35.0	12	10	17	8	M8	9											

① Angle A*30 is not applicable to Tip Shape B. Select from Precision Grade, No Shoulder (P1695). ② B Dimension is selectable from 5 mm ~ for Dicoat® Treated / Diamond Shape.

Ordering Example

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

Part Number: SLNTA B 8 - P12.0 - B15 - L8 - A60

Alterations

Part Number: D-SNNA B 10 - P12.0 - B10 - L5 - A60 - KD

Alterations	Wear Groove Alterations	Flat Machining	Thread Dia.	Flat Position	Thread Length
Code: MK	Code: KD	Code: MC	Code: KC	Code: FC	
Drill 4 grooves at B dimension. The wear and tear of the grooves indicate the degree of wear.	Endring Code KD Changes the flat position to 90° from the standard position 0°.	Endring Code MC Changes the thread diameter.	Endring Code KC Changes the flat position to 90° from the standard position 0°.	Endring Code FC Changes the thread length.	

Locating Pins for Fixtures - Square Head

Tip Shape Selectable

■ **Features:** Square Head Locating Pins that secure workpiece at four points. Suitable for use with workpiece insertion and extraction.

Shouldered

Type		Material	Hardness
Threaded	Set Screw		
LANQN	LATQN	SCM435	Treated Hardness 35~40HRC
TLANQN	TLATQN	SCM415	Carburized Treated Hardness: 55HRC~(Depth: 0.7 ~ 0.8) / Anti-carburizing on Threads

Reference: $\sin 15^\circ = 0.259$, $\tan 15^\circ = 0.267$, $\sin 30^\circ = 0.5$, $\tan 30^\circ = 0.577$, $\sin 45^\circ = 0.707$, $\tan 45^\circ = 1$, $\sin 60^\circ = 0.866$, $\tan 60^\circ = 1.732$

Tip Shape Selectable

• Threaded M (Coarse)=D
• Set Screw
Center misalignment between D and P, W: 0.1 or less

RoHS

Part Number		P 0.1mm Increment	W 0.1mm Increment	B 1mm Increment	L Selection	A Selection	E (Shape A) 1mm Increment	L1	L2	L3	H	d	R	Applicable Set Screw	Unit Price	
Type	Tip Shape														LANQN LATQN	TLANQN TLATQN
Hardened (Threaded) LANQN LATQN	A (Tapered)	6	7.0	5.0~17.0 (W≤P)	5 8 10	1~10	1~10	8	6	8	9	4	1	M5		
		8	7.0~9.0		5 8 10 12 15			8	10	8	11	5	1.5	M5		
	10	7.0~11.0	8 10 12 15		10			12	8	13	7	2	M6			
	12	7.0~11.0	10 12 15 18		12			15	10	15	9	3	M8			
Carburized (Threaded) TLANQN TLATQN	A (Tapered)	6	7.0	5.0~17.0 (W≤P)	5 8 10	1~10	1~10	8	6	8	9	4	1	M5		
		8	7.0~9.0		5 8 10 12 15			8	10	8	11	5	1.5	M5		
	10	7.0~11.0	8 10 12 15		10			12	8	13	7	2	M6			
	12	7.0~11.0	10 12 15 18		12			15	10	15	9	3	M8			

No Shoulder

Type		Material	Hardness
Threaded	Set Screw		
LNNQN	LNTQN	SCM435	Treated Hardness 35~40HRC
TLNNQN	TLTQN	SCM415	Carburized Treated Hardness: 55HRC~(Depth: 0.7 ~ 0.8) / Anti-carburizing on Threads

Reference: $\sin 15^\circ = 0.259$, $\tan 15^\circ = 0.267$, $\sin 30^\circ = 0.5$, $\tan 30^\circ = 0.577$, $\sin 45^\circ = 0.707$, $\tan 45^\circ = 1$, $\sin 60^\circ = 0.866$, $\tan 60^\circ = 1.732$

Tip Shape Selectable

• Threaded M (Coarse)=D
• Set Screw
Center misalignment between D and P, W: 0.1 or less

RoHS

Part Number		P 0.1mm Increment	W 0.1mm Increment	B 1mm Increment	L Selection	A Selection	E (Shape A) 1mm Increment	L1	L2	L3	d	R	Applicable Set Screw	Unit Price	
Type	Tip Shape													LNNQN LNTQN	TLNNQN TLTQN
Hardened (Threaded) LNNQN LNTQN	A (Tapered)	6	9.0~12.0	5.0~30.0 (W≤P)	5 8 10	1~10	1~10	8	6	8	4	3	M5		
		8	11.0~16.0		5 8 10 12 15			8	10	8	5	4	M5		
	10	13.0~20.0	8 10 12 15		10			12	8	7	4	M6			
	12	13.0~20.0	10 12 15 18		12			15	10	9	6	M8			
Carburized (Threaded) TLNNQN TLTQN	A (Tapered)	6	9.0~12.0	5.0~30.0 (W≤P)	5 8 10	1~10	1~10	8	6	8	4	3	M5		
		8	11.0~16.0		5 8 10 12 15			8	10	8	5	4	M5		
	10	13.0~20.0	8 10 12 15		10			12	8	7	4	M6			
	12	13.0~20.0	10 12 15 18		12			15	10	9	6	M8			

Ordering Example: Part Number - P - W - B - L - A - E

LANQN 7 - P7.0 - W5.0 - B15 - L8 - A30 - E8

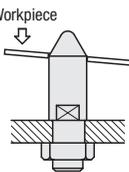
LNNQN 8 - P12.0 - W10.0 - B18 - L8 - A60

Alterations: Part Number - P - W - B - L - A - E - (KC, MC, RTC)

LNNQNA8 - P12.0 - W5.0 - B10 - L8 - A30 - E5 - KC

Alterations	Flat Position	Thread Dia.	Upper Relief Radius Change
	Shouldered / No Shoulder 0°	MC	RTC
Code	KC	MC	RTC
Spec.	Ordering Code KC Changes the flat position to 90° from the standard position 0°.	Ordering Code MC8 Changes the thread diameter. D/3 < M < D M min 3 Applicable to Threaded only.	Ordering Code RTC0.2 Changes R1 to R of the Selection below. Selection 0.2 R2 R3 RTC≤(H-P)/2 Applicable to Shouldered only.

Example Suitable for Use with Sloping Workpieces.



Locating Pins for Fixtures - Oval, Precision/Standard Grade

■ **Features:** P and W dimensions are configurable in 0.1mm increment for better fit to the size of oval holes machined on workpieces. Tolerances of P and W dimensions are 0.05 for Precision Type and 0.2 for Standard Type.

Shouldered

Type				Material	Hardness
Oval, Precision Grade	Oval, Standard Grade	Threaded	Set Screw		
LNLNF	LNLTF	NLNF	NLTF	SCM435	Treated Hardness 35~40HRC
TLNLNF	TLNLTF	TNLNF	TNLTF	SCM415	Carburized Treated Hardness: 55HRC~(Depth: 0.7 ~ 0.8) / Anti-carburizing on Threads

Reference: $\sin 15^\circ = 0.259$, $\tan 15^\circ = 0.267$, $\sin 30^\circ = 0.5$, $\tan 30^\circ = 0.577$, $\sin 45^\circ = 0.707$, $\tan 45^\circ = 1$, $\sin 60^\circ = 0.866$, $\tan 60^\circ = 1.732$

Tip Shape Selectable

• Threaded M (Coarse)=D
• Set Screw
Center misalignment between D and P, W: 0.1 or less

RoHS

Part Number		P 0.1mm Increment	W 0.1mm Increment	B 1mm Increment	L Selection	L1	L2	L3	H	d	R	Applicable Set Screw	Unit Price			
Type	Dg6												LNLNF LNLTF	TLNLNF TLNLTF	NLNF NLTF	TNLNF TNLTF
Precision Grade (Threaded Hardening) LNLNF LNLTF	6	5.0~9.0	3.0~17.0 (P≥W+2.0)	5~30 Standard Grade (B≤Wx3) Precision Grade (B≤Wx3)	5 8	8	6	8	9	4	1	M5				
		8			5.0~11.0	5 12 15	8	10	8	11	5	1.5	M5			
	10	7.0~13.0			10 12 15	10	12	8	13	7	2	M6				
	12	9.0~15.0			12 15 18	12	15	10	15	9	3	M6				
Standard Grade (Threaded Hardening) NLNF NLTF	8	5.0~9.0	3.0~17.0 (P≥W+2.0)	5~30 Standard Grade (B≤Wx3) Precision Grade (B≤Wx3)	5 8	8	6	8	9	4	1	M5				
		10			7.0~13.0	10 12 15	10	12	8	13	7	2	M6			
	12	9.0~15.0			12 15 18	12	15	10	15	9	3	M6				
	16	13.0~19.0			15 18 20	12	18	10	19	13	4	M8				

No Shoulder

Type				Material	Hardness
Oval, Precision Grade	Oval, Standard Grade	Threaded	Set Screw		
LNLNF	LNLTF	NLNF	NLTF	SCM435	Treated Hardness 35~40HRC
TLNLNF	TLNLTF	TNLNF	TNLTF	SCM415	Carburized Treated Hardness: 55HRC~(Depth: 0.7 ~ 0.8) / Anti-carburizing on Threads

Reference: $\sin 15^\circ = 0.259$, $\tan 15^\circ = 0.267$, $\sin 30^\circ = 0.5$, $\tan 30^\circ = 0.577$, $\sin 45^\circ = 0.707$, $\tan 45^\circ = 1$, $\sin 60^\circ = 0.866$, $\tan 60^\circ = 1.732$

Tip Shape Selectable

• Threaded M (Coarse)=D
• Set Screw
Center misalignment between D and P, W: 0.1 or less

RoHS

Part Number		P 0.1mm Increment	W 0.1mm Increment	B 1mm Increment	L Selection	L1	L2	L3	H	d	R	Applicable Set Screw	Unit Price			
Type	Dg6												LNLNF LNLTF	TLNLNF TLNLTF	NLNF NLTF	TNLNF TNLTF
Precision Grade (Threaded Hardening) LNLNF LNLTF	6	10.0~12.0	D+2≤W≤P-2	5~30 Standard Grade (B≤Wx4) Precision Grade (B≤Wx3)	5 8	8	6	8	4	3	M5					
		8			12.0~16.0	5 12 15	8	10	8	5	3	M5				
	10	14.0~20.0			10 12 15	10	12	8	7	3	M6					
	12	16.0~24.0			12 15 18	12	15	10	9	5	M8					
Standard Grade (Threaded Hardening) NLNF NLTF	8	10.0~12.0	D+2≤W≤P-2	5~30 Standard Grade (B≤Wx4) Precision Grade (B≤Wx3)	5 8	8	6	8	4	3	M5					
		10			12.0~16.0	5 12 15	8	10	8	5	3	M5				
	12	14.0~20.0			10 12 15	10	12	8	7	3	M6					
	16	20.0~32.0			15 18 20	12	18	10	13	6	M8					

Ordering Example: Part Number - P - W - B - L

NLNF 10 - P11.8 - W9.8 - B10 - L10

LNLNF 8 - P12.0 - W10.0 - B15 - L12

Alterations: Part Number - P - W - B - L - (KC, MC, RTC)

LNLNF10 - P7.8 - W5.8 - B5 - L10 - KC

Alterations	Flat Position	Thread Dia.	Upper Relief Radius Change	Tip Angle Change
	Shouldered	MC	RTC	RC
Code	KC	MC	RTC	RC
Spec.	Ordering Code KC Changes the flat position to 90° from the standard position 0°. Applicable to Shouldered Type only.	Ordering Code MC8 Changes the thread diameter. D/3 < M < D M min 3 Applicable to Threaded only.	Ordering Code RTC0.2 Changes R1 to R of the Selection below. Selection 0.2 R2 R3 RTC≤(H-P)/2 Applicable to Shouldered Type only.	Ordering Code RC60 Changes the tip angle. Selection 60°, 90°, 120°

Locating Pins for Fixtures - Standard Grade, Short Set Screw

Tip Shape Selectable, Circumference Groove / Notched

■ **Features:** Can be used for thin locators due to the short retaining part. For Standard Grade, P Dim. Tolerance is ± 0.05 , and concentricity is 0.03 or 0.05. Polishing Relief Groove is smaller than that with conventional products to avoid a workpiece getting stuck.

🔗 **For products uncovered by e-Catalog Standard, see P.131.**

Shouldered

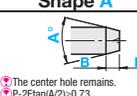


RoHS

Type	Material	Hardness
Notched		
ELASA ELACA Round	SCM435	Treated Hardness 35~40HRC
ELASD ELACD Diamond		
TELASA TELACA Round	SCM415	Carburized Treated Hardness: 55HRC~(Depth: 0.7 ~ 0.8)
TELASD TELACD Diamond		

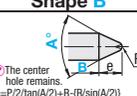
Tip Shape Selectable

Shape A



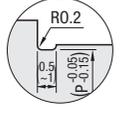
The center hole remains.
e=P/2tan(A/2); 0.73

Shape B



The center hole remains.
e=P/2tan(A/2)+R-(Rsin(A/2))

Surface Finish Relief



RO.2

• **Circumference Groove Shape** Tip Shape: Select from the diagram above.

• **Notch Shape** Tip Shape: Select from the diagram above.

Reference: $\sin 15^\circ=0.259$, $\tan 15^\circ=0.267$, $\sin 30^\circ=0.5$, $\tan 30^\circ=0.577$, $\sin 45^\circ=0.707$, $\tan 45^\circ=1$, $\sin 60^\circ=0.866$, $\tan 60^\circ=1.732$

Circumference Groove Shape				Notch Shape			
D	ℓ1	d	Applicable Set Screw	D	ℓ2	ℓ3	Applicable Set Screw
6	4	4	M5	6	5.5	2.5	M4
8	6	5	M5	8	7.5	3.5	M5
10	7	7	M6	10	10.5	5.5	M6
12	9	9	M6	12	13	7	M6
16	13	13	M6	16	16.5	10.5	M6

ℓ2 is the recommended dimension for the set screw tip part.

Part Number										Unit Price							
Type	Tip Shape	Dh7	P 0.1mm Increment	B 1mm Increment	L Circumference Groove Shape 1mm Increment	A Selection	E (Shape A) 1mm Increment	R	W	Circumference Groove				Notched			
[Circumference Groove]	[Notched]									ELASA	ELASD	TELASA	TELASD	ELACA	ELACD	TELACA	TELCAD
Hardened Carburized (Round)	Hardened Carburized (Round)	6	3.0-8.0	2-30	10 12 16	30	1-10	9	1-2								
ELASA	TELASA	8	3.0-10.0	2-30	12 16 19	60		11	1.5-2								
	ELACA	10	4.5-12.0	2-30	12 16 19 20	90		13	2-3								
	TELACA	12	9.0-14.0	2-30	12 16 19 20	120		15	3-4								
(Diamond) (Diamond)	(Diamond) (Diamond)	16	13.0-18.0	2-30	19 20 25			19	4-5								
ELASD	TELASD																
	ELACD																
	TELCAD																

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. Angle A = *30 is of the standard shape and thus, is not applicable to Tip Shape B of Circumference Groove. Select any of Circumference Groove Types (P.1749). Conventional RC Alteration (change of angle) can be substituted with Tip Shape B.

No Shoulder

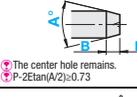


RoHS

Type	Material	Hardness
Notched		
ELNSA ELNCA Round	SCM435	Treated Hardness 35~40HRC
ELNSD ELNCD Diamond		
TELNSA TELNCA Round	SCM415	Carburized Treated Hardness: 55HRC~(Depth: 0.7 ~ 0.8)
TELNSD TELNCD Diamond		

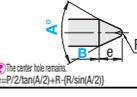
Tip Shape Selectable

Shape A



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

Shape B



The center hole remains.
e=P/2tan(A/2)+R-(Rsin(A/2))

Surface Finish Relief



RO.2

• **Circumference Groove Shape** Tip Shape: Select from the diagram above.

• **Notch Shape** Tip Shape: Select from the diagram above.

Reference: $\sin 15^\circ=0.259$, $\tan 15^\circ=0.267$, $\sin 30^\circ=0.5$, $\tan 30^\circ=0.577$, $\sin 45^\circ=0.707$, $\tan 45^\circ=1$, $\sin 60^\circ=0.866$, $\tan 60^\circ=1.732$

Circumference Groove Shape				Notch Shape			
D	ℓ1	d	Applicable Set Screw	D	ℓ2	ℓ3	Applicable Set Screw
6	4	4	M5	6	5.5	2.5	M4
8	6	5	M5	8	7.5	3.5	M5
10	7	7	M6	10	10.5	5.5	M6
12	9	9	M6	12	13	7	M6
16	13	13	M6	16	16.5	10.5	M6
20	17	17	M6	20	20.5	14.5	M6

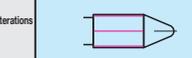
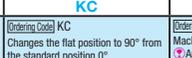
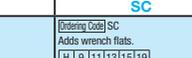
ℓ2 is the recommended dimension for the set screw tip part.

Part Number										Unit Price							
Type	Tip Shape	Dh7	P 0.1mm Increment	B 1mm Increment	L Circumference Groove Shape 1mm Increment	A Selection	E (Shape A) 1mm Increment	R	W	Circumference Groove				Notched			
[Circumference Groove]	[Notched]									ELNSA	ELNSD	TELNSA	TELNSD	ELNCA	ELNCD	TELNCA	TELNCD
Hardened Carburized (Round)	Hardened Carburized (Round)	6	8.0-12.0	2-30	10 12 16	30	1-10	3	3								
ELNSA	TELNSA	8	10.0-16.0	2-30	12 16 19	60		4	3.5								
	ELNCA	10	12.0-20.0	2-30	12 16 19	90		4	4								
	TELNCA	12	14.0-25.0	2-30	12 16 19 20	120		6	6								
(Diamond) (Diamond)	(Diamond) (Diamond)	16	18.0-32.0	2-30	19 20 25			8	8								
ELNSD	TELNSD	20	22.0-35.0	2-30	19 20 25			8	9								
	ELNCD																
	TELNCD																

Angle A = *30 is of the standard shape and thus, is not applicable to Tip Shape B of Circumference Groove. Select any of Circumference Groove Types (P.1749). Conventional RC Alteration (change of angle) can be substituted with Tip Shape B. For the Diamond Shape, the value of 5mm~ can be configured for the B dimension.

Ordering Example: Part Number - P - B - L - A - E (KC, KD...etc.)

ELNSAB10 - P23 - B15 - L10 - A60 - KD

Alterations	Wear Groove Alterations		Flat Position		Flat Machining		Wrench Flats		Upper Relief Radius Change	
	Shouldered	No Shoulder	Shouldered	No Shoulder	Shouldered	No Shoulder	Shouldered	No Shoulder	Shouldered	No Shoulder
										
Code	MK		KC		KD		SC		RTC	
	Drill 4 grooves at D Dimension. Abrasion management can be facilitated by checking the wear and tear of the grooves. Applicable to Hardening, Carburized and Round Shape prods. only. When combined with RTC, Groove starts from "R" value + 1 mm" area. Groove Depth: 0.2mm (±0.05mm) Groove Shape: V Groove (90°)		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 Type. KD cannot be combined with SC.		Ordering Code SC Adds wrench flats. Selection H 9 I 11 J 13 I 15 I 19 H 7 8 I 11 I 13 I 17 Applicable to Round Shape Type with Shoulder only.		Ordering Code RTC Changes the relief to the following radius R. Selection R1 R2 R3 Applicable to Shouldered Type only. RTC:(H-P)/2 B<5	