

# Locating Pin for Jigs & Fixtures

Precision with Shoulder / Pilot Shape Selectable, *continued*

**Threaded**

RoHS10

Type	Material	Hardness
SLANA_	Round 4137 Alloy Steel	Hardened 35~40 HRC min.
SLAND_	Diamond	
TSLANA_	Round SCM415 Alloy Steel (JIS)	Carburized 55 HRC min. (Depth 0.7~0.8)
TSLAND_	Diamond	Anti-Carburizing on Threads

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

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

**Hardened / Carburized / Chrome Plated**      **Dicoat® Treated**

**Tip Shape**  
Select from the diagram on the right.

**Surface Finish Relief**  
R0.2

**Pilot-Tip Shape Selection**

**A Shape**

- The center hole remains.
- $P \geq 2 \tan(A/2) \geq 0.73$
- $P \geq 2 \tan(A/2) \geq 2$  (Dicoat®)

**B Shape**

- The center hole remains.
- $e = P/2 \tan(A/2) + R \cdot R / \sin(A/2)$

Part Number		P		B		L		A		E		L		H		R		W	
Type	Tip Shape	D <sub>67</sub>	0.1 mm Increment	1 mm Increment	Selection	A Selection	(Shape A) 1 mm Increment	ℓ <sub>1</sub>	H	R	W	ℓ <sub>1</sub>	H	d	R	Applicable Set Screw	W		
Hardened (Round) SLANA	A (Tapered)	6	-0.004 -0.012	3.0~7.0	5 8 10	*30	1~10	6	9	1	1	8	9	4	1	M5	1~2		
		8	-0.005 -0.014	3.0~9.0	5 8 10 12 15	60		10	11	1.5	(2)								
		10	-0.005 -0.014	4.5~12.0	(5) (8) 10 12 15	90		12	13	2	1~3								
		10T	-0.006 -0.017	9.0~13.0	(5) (8) 10 12 15	120		15	15	3	4								
Carburized (Round) TSLANA	A (Tapered)	6	-0.004 -0.012	3.0~7.0	5 8 10	*30	1~10	6	9	1	1	8	9	4	1	M5	1~2		
		8	-0.005 -0.014	3.0~9.0	5 8 10 12 15	60		10	11	1.5	(2)								
		10	-0.005 -0.014	4.5~12.0	(5) (8) 10 12 15	90		12	13	2	1~3								
Hard Chrome (Round) R-SANA	A (Tapered)	6	-0.004 -0.012	3.0~7.0	5 8 10	*30	1~10	6	9	1	1	8	9	4	1	M5	1~2		
		8	-0.005 -0.014	3.0~9.0	5 8 10 12 15	60		10	11	1.5	(2)								
		10	-0.005 -0.014	4.5~12.0	(5) (8) 10 12 15	90		12	13	2	1~3								
Dicoat® (Round) D-SANA	A (Tapered)	6	-0.004 -0.012	3.0~7.0	5 8 10	*30	1~10	6	9	1	1	8	9	4	1	M5	1~2		
		8	-0.005 -0.014	3.0~9.0	5 8 10 12 15	60		10	11	1.5	(2)								
		10	-0.005 -0.014	4.5~12.0	(5) (8) 10 12 15	90		12	13	2	1~3								
(Diamond) SLAND	B (Taper R)	12	-0.006 -0.017	9.0~13.0	(8) 10 12 15 18	120	1~10	15	15	3	4	10	15	9	3	M8	4		
		16	-0.006 -0.017	13.0~16.0	(10) 12 15 18 20	120		18	19	4	5								

⊙ W Dimension D6, D8: W=2 when P>5.0, D10, 10T: W=1 when P<5.0, W=2 when 5.0≤P≤7.0, W=3 when P>7.0 ⊗ L dimension in ( ) is not applicable to Diamond Shape and Dicoat® treatment.  
 ⊗ Angle A \*30 is not applicable to Tip Shape B. Select from Precision with Shoulder Type (P.1542)

**Part Number Example**

Type	Tip Shape	D	P	B	L	A	E
SLANA	A	6	P6.8	B14	L8	A30	E2

**Part Number Alterations**

Type	Tip Shape	D	P	B	L	A	E	(KC / KD / SC / MC)
R-SANA	B	10	P4.5	B10	L5	A60		KD

Alterations	Grooves for Wear Sign	Flat Position	Flat Machining	Wrench Flats	Thread Diameter	Thread Length	Upper Relief Radius Change												
Code	MK	KC	KD	SC	MC	FC	RTC												
Spec.	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 ≥ 4 ⊙ When used together with RTC, the groove starts from the area of R value + 1 mm. Groove Depth: 0.2mm (±0.06 mm) Groove Shape: V Groove (90°)	<b>Ordering Code: KC</b> Changes the flat position to 90° from the standard position 0°. ⊙ Applicable to Diamond Shape Type only.	<b>Ordering Code: KD</b> Adds wrench flats. ⊙ H-P≥2 ⊙ Applicable to Round Shape Type only.	<b>Ordering Code: SC</b> Changes the thread diameter. <table border="1"> <tr><th>H</th><td>9</td><td>11</td><td>13</td><td>15</td><td>19</td></tr> <tr><th>H<sub>1</sub></th><td>7</td><td>8</td><td>11</td><td>13</td><td>17</td></tr> </table> ⊙ D/3≤M<D Mmin3 ⊙ Applicable to Threaded Type only.	H	9	11	13	15	19	H <sub>1</sub>	7	8	11	13	17	<b>Ordering Code: MC8</b> Changes the thread diameter. ⊙ D/3≤M<D Mmin3 ⊙ Applicable to Threaded Type only.	<b>Ordering Code: FC15</b> Changes the thread length. FC=1 mm Increment D6~10: M≤FC≤Mx3 D12, 16: M≤FC≤Mx2.5 D20: M≤FC≤Mx2 ⊙ Applicable to Threaded only. ⊙ Not applicable to Dicoat® and TiCN treatment.	<b>Ordering Code: RTC1</b> Changes the relief to the following radius R. Selection: R1 R2 R3 RTC≤(H-P)/2 ⊙ Applicable when B≥5
H	9	11	13	15	19														
H <sub>1</sub>	7	8	11	13	17														

# Locating Pin for Jigs & Fixtures

Precision with Shoulder / Pilot Shape Selectable, *continued*

**Set Screw Flat Type**

RoHS10

Type	Material	Hardness
SLATA_	Round 4137 Alloy Steel	Hardened 35~40 HRC
SLATD_	Diamond	
TSLATA_	Round SCM415 Alloy Steel (JIS)	Carburized 55 HRC min. (Depth 0.7~0.8)
TSLATD_	Diamond	Anti-Carburizing on Threads

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

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

**Tip Shape**  
Select from the diagram on the right.

**Surface Finish Relief**  
R0.2

**Pilot-Tip Shape Selection**

**A Shape**

- The center hole remains.
- $P \geq 2 \tan(A/2) \geq 0.73$
- $P \geq 2 \tan(A/2) \geq 2$  (Dicoat®)

**B Shape**

- The center hole remains.
- $e = P/2 \tan(A/2) + R \cdot R / \sin(A/2)$

Part Number		P		B		L		A		E		L		H		R		W	
Type	Tip Shape	Dg6	0.1 mm Increment	1 mm Increment	Selection	A Selection	(Shape A) 1 mm Inc.	ℓ <sub>1</sub>	H	d	R	Applicable Set Screw	W						
Hardened (Round) SLATA	A (Tapered)	6	-0.004 -0.012	3.0~7.0	5 8 10	*30	1~10	6	9	1	1	8	9	4	1	M5	1~2		
		8	-0.005 -0.014	3.0~9.0	5 8 10 12 15	60		10	11	1.5	(2)								
		10	-0.005 -0.014	4.5~12.0	(5) (8) 10 12 15	90		12	13	2	1~3								
		10T	-0.006 -0.017	9.0~13.0	(5) (8) 10 12 15	120		15	15	3	4								
Carburized (Round) TSLATA	A (Tapered)	6	-0.004 -0.012	3.0~7.0	5 8 10	*30	1~10	6	9	1	1	8	9	4	1	M5	1~2		
		8	-0.005 -0.014	3.0~9.0	5 8 10 12 15	60		10	11	1.5	(2)								
		10	-0.005 -0.014	4.5~12.0	(5) (8) 10 12 15	90		12	13	2	1~3								
Hard Chrome (Round) R-SATA	A (Tapered)	6	-0.004 -0.012	3.0~7.0	5 8 10	*30	1~10	6	9	1	1	8	9	4	1	M5	1~2		
		8	-0.005 -0.014	3.0~9.0	5 8 10 12 15	60		10	11	1.5	(2)								
		10	-0.005 -0.014	4.5~12.0	(5) (8) 10 12 15	90		12	13	2	1~3								
Dicoat® (Round) D-SATA	A (Tapered)	6	-0.004 -0.012	3.0~7.0	5 8 10	*30	1~10	6	9	1	1	8	9	4	1	M5	1~2		
		8	-0.005 -0.014	3.0~9.0	5 8 10 12 15	60		10	11	1.5	(2)								
		10	-0.005 -0.014	4.5~12.0	(5) (8) 10 12 15	90		12	13	2	1~3								
(Diamond) SLATD	B (Taper R)	12	-0.006 -0.017	9.0~13.0	(8) 10 12 15 18	120	1~10	15	15	3	4	10	15	9	3	M8	4		
		16	-0.006 -0.017	13.0~16.0	(10) 12 15 18 20	120		18	19	4	5								

⊙ W Dimension D6, D8: W=2 when P>5.0, D10, 10T: W=1 when P<5.0, W=2 when 5.0≤P≤7.0, W=3 when P>7.0 ⊗ Angle A \*30 is not applicable to Tip Shape B. Select from Standard Grade, Shouldered (P.1542)  
 ⊙ B Dimension 5 mm – will be selected for Dicoat® Treated / TiCN Treated items.

**Part Number Example**

Type	Tip Shape	D	P	B	L	A	E
SLATA	B	8	P7.5	B15	L8	A60	

**Part Number Alterations**

Type	Tip Shape	D	P	B	L	A	E	(KC / KD / SC / MC)
R-SANA	B	10	P4.5	B10	L5	A60		KD

Alterations	Grooves for Wear Sign	Flat Position	Flat Machining	Wrench Flats	Thread Diameter	Thread Length	Upper Relief Radius Change												
Code	MK	KC	KD	SC	MC	FC	RTC												
Spec.	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 ≥ 4 ⊙ When used together with RTC, the groove starts from the area of R value + 1 mm. Groove Depth: 0.2mm (±0.06 mm) Groove Shape: V Groove (90°)	<b>Ordering Code: KC</b> Changes the flat position to 90° from the standard position 0°. ⊙ Applicable to Diamond Shape Type only.	<b>Ordering Code: KD</b> Adds wrench flats. ⊙ H-P≥2 ⊙ Applicable to Round Shape Type only.	<b>Ordering Code: SC</b> Changes the thread diameter. <table border="1"> <tr><th>H</th><td>9</td><td>11</td><td>13</td><td>15</td><td>19</td></tr> <tr><th>H<sub>1</sub></th><td>7</td><td>8</td><td>11</td><td>13</td><td>17</td></tr> </table> ⊙ D/3≤M<D Mmin3 ⊙ Applicable to Threaded Type only.	H	9	11	13	15	19	H <sub>1</sub>	7	8	11	13	17	<b>Ordering Code: MC8</b> Changes the thread diameter. ⊙ D/3≤M<D Mmin3 ⊙ Applicable to Threaded Type only.	<b>Ordering Code: FC15</b> Changes the thread length. FC=1 mm Increment D6~10: M≤FC≤Mx3 D12, 16: M≤FC≤Mx2.5 D20: M≤FC≤Mx2 ⊙ Applicable to Threaded only. ⊙ Not applicable to Dicoat® and TiCN treatment.	<b>Ordering Code: RTC1</b> Changes the relief to the following radius R. Selection: R1 R2 R3 RTC≤(H-P)/2 ⊙ Applicable when B≥5
H	9	11	13	15	19														
H <sub>1</sub>	7	8	11	13	17														