

Locating Pins for Fixtures

Precision Grade, Shouldered

■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

RoHS



① Dicoat® Treated / TiCN Thread Shape

② e=P/2tan15°+R-(R/sin15°)

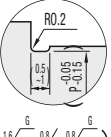
③ DicoatR Treated / TiCN Treated items do not come with a center hole.

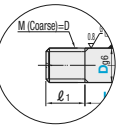
Type	Material	Hardness
LANAN	Round	EN 1.7220
LANDN	Diamond	Equiv.
TLANAN	Round	EN 1.7242
TLANDN	Diamond	Equiv.

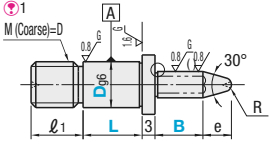
Reference: sin15°=0.259 tan15°=0.267

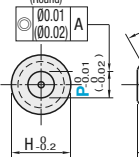
Type	Material	Hardness	Surface Treatment
R-ANAN	Round	EN 1.7220	35~40HRC
R-ANDN	Diamond	Equiv.	Hard Chrome Plating
D-ANAN	Round	EN 1.2379	55HRC ~ (Surface 3000HV)
D-ANDN	Diamond	Equiv.	Dicoat® Treated
H-ANAN	Round	EN 1.2379	55HRC ~ (Surface 3000HV)
H-ANDN	Diamond	Equiv.	TiCN Treatment

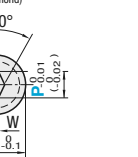
④ Dicoat® Treated / TiCN items will have the () precision and Thread Shape will be ①.











Part Number		D _{g6}		P		B		L		Selection		Unit Price	
Type													
Hardened (Round)	LANAN	6	8	10	12	15	18	20	25	30	35		
Carburized (Round)	TLANAN	8	10	12	15	18	20	25	30	35			
Hard Chrome (Round)	R-ANAN	10	12	15	18	20	25	30	35				
Dicoat (Round)	D-ANAN	12	15	18	20	25	30	35					
TiCN (Round)	H-ANAN	16											

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 ⑥ L dimension in () is not applicable to Diamond Shape, Dicoat® and TiCN treatment.

⑦ B Dimension 5 mm ~ will be selected for Dicoat® Treated / TiCN Treated items.

Set Screw

RoHS



① e=P/2tan15°+R-(R/sin15°)

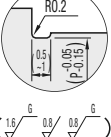
② Dicoat® Treated / TiCN Treated items do not come with a center hole.

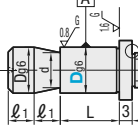
Type	Material	Hardness
LATAN	Round	EN 1.7220
LATDN	Diamond	Equiv.
TLATAN	Round	EN 1.7242
TLATDN	Diamond	Equiv.

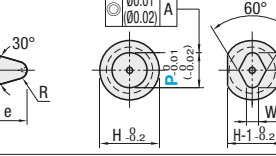
Reference: sin15°=0.259 tan15°=0.267

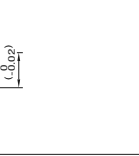
Type	Material	Hardness	Surface Treatment
D-ATAN	Round	EN 1.2379	55HRC ~ (Surface 3000HV)
D-ATDN	Diamond	Equiv.	Dicoat® Treated
R-ATAN	Round	EN 1.7220	35~40HRC
R-ATDN	Diamond	Equiv.	Hard Chrome Plating
H-ATAN	Round	EN 1.2379	55HRC ~ (Surface 3000HV)
H-ATDN	Diamond	Equiv.	TiCN Treatment

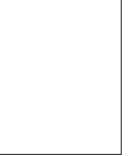
④ Dicoat® Treated/TiCN items will have the () precision and Thread Shape will be ①.











Part Number		D _{g6}		P		B		L		Selection		Unit Price	
Type													
Hardened (Round)	LATAN	6	8	10	12	15	18	20	25	30	35		
Carburized (Round)	TLATAN	8	10	12	15	18	20	25	30	35			
Hard Chrome (Round)	R-ATAN	10	12	15	18	20	25	30	35				
Dicoat (Round)	D-ATAN	12	15	18	20	25	30	35					
TiCN (Round)	H-ATAN	16											

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 ⑥ B Dimension 5 mm ~ will be selected for Dicoat® Treated / TiCN Treated items.

Ordering Example

Part Number

Type

D

P

B

L

LANAN

8

P5.0

B15

L10

LATAN

6

P6.8

B14

Alterations

Part Number

Type

D

P

B

L

LANAN

10

P4.5

B10

L5

KD

Alterations	Wear Groove Alterations	Flat Position	Flat Machining	Wrench Flats	Thread Dia.	Thread Length	Upper Relief Radius Change
Code	MK	KC	KD	SC	MC	FC	RTC
	Drill 4 grooves at B Dimension. The wear and tear of the grooves indicate the degree of wear. ① Applicable to Hardening, Carburized and Round Shape Products only. ② When used together with RTC, the groove starts from the area of R value + 1 mm. 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°. ① Applicable to Diamond Shape Type only.	Ordering Code KD Machining on one side. ① H-P=2 ② Applicable to Round Shape Type only.	Ordering Code SC Adds wrench flats. ① H-P=1 ② Applicable to Round Shape Type only.	Ordering Code MC Changes the thread diameter. ① D/3:M-C-D ② Applicable to Threaded only.	Ordering Code FC Changes the thread length. FC=1mm Increment D6-10 M-FC:Mx3 D12-16 M-FC:Mx2.5 D20 M-FC:Mx2 ① Applicable to Threaded only. ② Not applicable to Dicoat® and TiCN treatment.	Ordering Code RTC Changes the relief to the following radius R. ① R1 R2 R3 ② Applicable when B:5

Locating Pins for Fixtures

Tip Shape Selectable, Precision Grade, Shouldered

■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

RoHS



① Only the Shape B Dicoat® Treated items do not come with a center hole.

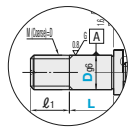
Type	Material	Hardness
SLANA	Round	EN 1.7220
SLAND	Diamond	Equiv.
TSLANA	Round	EN 1.7242
TLAND	Diamond	Equiv.

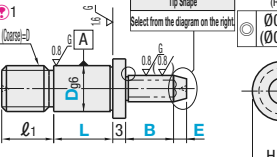
Reference: sin15°=0.259 tan15°=0.267 sin30°=0.5 sin45°=0.707 sin60°=0.866 tan30°=0.577 tan45°=1 tan60°=1.732

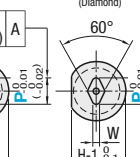
Type	Material	Hardness	Surface Treatment
R-SANA	Round	EN 1.7220	35~40HRC
R-SAND	Diamond	Equiv.	Hard Chrome Plating
D-SANA	Round	EN 1.2379	55HRC ~ (Surface 3000HV)
D-SAND	Diamond	Equiv.	Dicoat® Treated

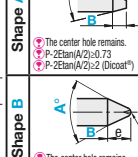
④ Dicoat® Treated items will have the () precision and Thread Shape will be ①.











Part Number		D _{h7}		P		B		L		Selection		Unit Price	
Type													
Hardened (Round)	SLANA	6	8	10	12	15	18	20	25	30	35		
Carburized (Round)	TSLANA	8	10	12	15	18	20	25	30	35			
Hard Chrome (Round)	R-SANA	10	12	15	18	20	25	30	35				
Dicoat (Round)	D-SANA	12	15	18	20	25	30	35					

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 ⑥ L dimension in () is not applicable to Diamond Shape and Dicoat® treatment.

⑦ Angle A*30 is not applicable to Tip Shape B. Select from Precision Grade, Shouldered (P.1693).

Set Screw

RoHS



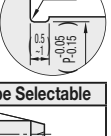
① Only the Shape B DicoatR Treated items do not come with a center hole.

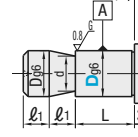
Type	Material	Hardness
SLATA	Round	EN 1.7220
SLATD	Diamond	Equiv.
TSLAT	Round	EN 1.7242
TLATD	Diamond	Equiv.

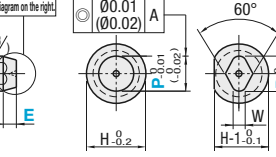
Reference: sin15°=0.259 tan15°=0.267 sin30°=0.5 sin45°=0.707 sin60°=0.866 tan30°=0.577 tan45°=1 tan60°=1.732

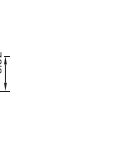
Type	Material	Hardness	Surface Treatment
R-SATA	Round	EN 1.7220	35~40HRC
R-SATD	Diamond	Equiv.	Hard Chrome Plating
D-SATA	Round	EN 1.2379	55HRC ~ (Surface 3000HV)
D-SATD	Diamond	Equiv.	DicoatR Treated

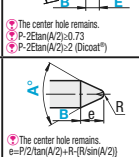
④ Dicoat® Treated items will have the () precision and Thread Shape will be ①.











Part Number		D _{h7}		P		B		L		Selection		Unit Price	
Type													
Hardened (Round)	SLATA	6	8	10	12	15	18	20	25	30	35		
Carburized (Round)	TSLAT	8	10	12	15	18	20	25	30	35			
Hard Chrome (Round)	R-SATA	10	12	15	18	20	25	30	35				
Dicoat (Round)	D-SATA	12	15	18	20	25	30	35					

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 ⑥ B Dimension 5 mm ~ will be selected for Dicoat® Treated / TiCN Treated items.

Ordering Example

Part Number

Type

D

P

B

L

A

E

SLANA

A

6

P6.8

B14

L8

A30

E2

SLATA

B

8

P7.5

B15

A60

Alterations

Part Number

Type

D

P

B

L

A

E

SLANA

B

10

P4.5

B10

L5

A60

KD

Alterations	Wear Groove Alterations	Flat Position	Flat Machining	Wrench Flats	Thread Dia.	Thread Length	Upper Relief Radius Change
Code	MK	KC	KD	SC	MC	FC	RTC
	Drill 4 grooves at B Dimension. The wear and tear of the grooves indicate the degree of wear. ① Applicable to Hardening, Carburized and Round Shape Products only. ② When used together with RTC, the groove starts from the area of R value + 1 mm. 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°. ① Applicable to Diamond Shape Type only.	Ordering Code KD Machining on one side. ① H-P=2 ② Applicable to Round Shape Type only.	Ordering Code SC Adds wrench flats. ① H-P=1 ② Applicable to Round Shape Type only.	Ordering Code MC Changes the thread diameter. ① D/3:M-C-D ② Applicable to Threaded only.	Ordering Code FC Changes the thread length. FC=1mm Increment D6-10 M-FC:Mx3 D12-16 M-FC:Mx2.5 D20 M-FC:Mx2 ① Applicable to Threaded only. ② Not applicable to Dicoat® and TiCN treatment.	Ordering Code RTC Changes the relief to the following radius R. ① R1 R2 R3 ② Applicable when B:5

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).

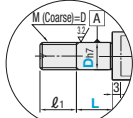
Threaded



Type	Material	Hardness
ELNNA	Round	EN 1.7220
ELNND	Diamond	Equiv.
TELNNA	Round	EN 1.7242
TELND	Diamond	Equiv.

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

① Dicoat® Treated / TiCN Thread Shape

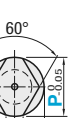
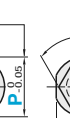
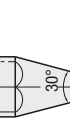
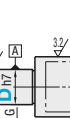
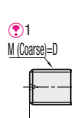


② $e = P/2 \tan 15^\circ + R - (R/\sin 15^\circ)$

③ Dicoat® Treated / TiCN Treated items do not come with a center hole.

Type	Material	Hardness	Surface Treatment
R-LNNA	Round	EN 1.7220	35~40HRC
R-LNND	Diamond	Equiv.	(Surface 750HV ~)
D-LNNA	Round	EN 1.2379	55HRC ~
D-LNND	Diamond	Equiv.	(Surface 3000HV)
H-LNNA	Round	EN 1.2379	55HRC ~
H-LNND	Diamond	Equiv.	(Surface 3000HV)

④ Dicoat® Treated / TiCN Treated items will have the () precision and Thread Shape will be ①.



Part Number	Type	Dh7	P	B	L	Selection	L1	R	W	Unit Price
Hardened (Round)	6	0	8.0~12.0	5	8	10	6	3	3	
Carburized (Round)	8	0	10.0~16.0	5	8	10	12	4	3.5	
Hard Chrome (Round)	10	0	12.0~20.0	(S) (8)	10	12	15	12	4	4
Dicoat (Round)	10T	-0.015	12.0~20.0	(S) (8)	10	12	15	15	5	5
TiCN (Round)	12	0	14.0~25.0	(8)	10	12	15	15	6	6
Diamond (Diamond)	16	-0.018	18.0~32.0	(10)	12	15	18	20	18	8
Diamond (Diamond)	20	-0.021	22.0~35.0	12	15	18	20	22	8	9

⑤ L dimension in () is not applicable to Diamond Shape, Dicoat® and TiCN treatment.

⑥ B Dimension is selectable from 5 mm ~ for Dicoat® Treated / TiCN Treated Products/Diamond Shape.

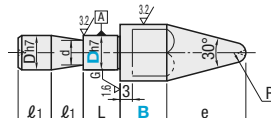
Set Screw



Type	Material	Hardness
ELNTA	Round	EN 1.7220
ELNTD	Diamond	Equiv.
TELNTA	Round	EN 1.7242
TELNTD	Diamond	Equiv.

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

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



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

③ Dicoat® Treated / TiCN Treated items do not come with a center hole.

Part Number	Type	Dh7	P	B	L	Selection	L1	d	R	Applicable Set Screw	W	Unit Price
Hardened (Round)	6	0	8.0~12.0	5	8	4	3	M5	3			
Carburized (Round)	8	0	10.0~16.0	5	8	5	4	M5	3.5			
Hard Chrome (Round)	10	0	12.0~20.0	10	8	7	4	M6	4			
Dicoat (Round)	10T	-0.015	12.0~20.0	5	8	7	5	M6	5			
TiCN (Round)	12	0	14.0~25.0	12	10	9	6	M8	6			
Diamond (Diamond)	16	-0.018	18.0~32.0	12	10	13	8	M8	8			
Diamond (Diamond)	20	-0.021	22.0~35.0	12	10	17	8	M8	9			

④ B Dimension is selectable from 5 mm ~ for Dicoat® Treated / TiCN Treated Products / Diamond Shape.

Part Number	Type	D	P	B	L	(Threaded)
ELNNA	10	-	P12.0	-	B10	-
ELNTA	6	-	P10.0	-	B15	-

Part Number	Type	D	P	B	L	(KC, KD --etc.)
ELNNA	6	-	P8.0	-	B14	-
ELNTA	6	-	P8.0	-	B14	-

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 wears. ① Applicable to Hardening, Carburized and Round Shape Products only Groove Depth: 0.2mm (±0.05mm) Groove Shape: V Groove (90°)	① Ordering Code KC Changes the flat position to 90° from the standard position 0°. ② Applicable to Diamond Shape Type only.	① Ordering Code KD Machining on one side. ② Applicable to Round Shape Type only.	① Ordering Code MC8 Changes the thread diameter. ② Applicable to Hardening, Carburized and Round Shape Products only Groove Depth: 0.2mm (±0.05mm) Groove Shape: V Groove (90°)	① 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 ② Applicable to Threaded only. ③ 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).

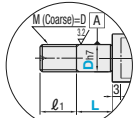
Threaded



Type	Material	Hardness
SELNNA	Round	EN 1.7220
SELNND	Diamond	Equiv.
TSELNNA	Round	EN 1.7242
TSELND	Diamond	Equiv.

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

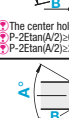
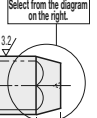
① Dicoat® Treated / TiCN Thread Shape



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

Type	Material	Hardness	Surface Treatment
D-SLNNA	Round	EN 1.2379	55HRC ~
D-SLNND	Diamond	Equiv.	(Surface 3000HV)

③ Dicoat® Treated items will have the () precision and Thread Shape will be ①.



Tip Shape Selectable	Shape A	Shape B
	The center hole remains. ① $P \cdot 2 \tan(A/2) \geq 0.73$ ② $P \cdot 2 \tan(A/2) \geq 2$ (Dicoat®)	The center hole remains. ① $e = P/2 \tan(A/2) + R - (R/\sin(A/2))$

Part Number	Type	Tip Shape	Dh7	P	B	L	Selection	A	E	L1	R	W	Unit Price
Hardened (Round)	6	0	8.0~12.0	5	8	10	6	3	3				
Carburized (Round)	8	0	10.0~16.0	5	8	10	12	4	3.5				
Dicoat (Round)	10	0	12.0~20.0	(S) (8)	10	12	15	12	4	4			
TiCN (Round)	10T	-0.015	12.0~20.0	(S) (8)	10	12	15	15	5	5			
Diamond (Diamond)	12	0	14.0~25.0	(8)	10	12	15	15	6	6			
Diamond (Diamond)	16	-0.018	18.0~32.0	(10)	12	15	18	20	18	8			
Diamond (Diamond)	20	-0.021	22.0~35.0	12	15	18	20	22	8	9			

④ Angle A*30 is not applicable to Tip Shape B. Select from Standard Grade, No Shoulder (P.1691).

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

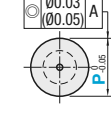
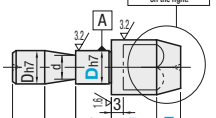
Set Screw



Type	Material	Hardness
SELNTA	Round	EN 1.7220
SELNTD	Diamond	Equiv.
TSELNTA	Round	EN 1.7242
TSELNTD	Diamond	Equiv.

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

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



Tip Shape Selectable	Shape A	Shape B
	The center hole remains. ① $P \cdot 2 \tan(A/2) \geq 0.73$ ② $P \cdot 2 \tan(A/2) \geq 2$ (Dicoat®)	The center hole remains. ① $e = P/2 \tan(A/2) + R - (R/\sin(A/2))$

Part Number	Type	Tip Shape	Dh7	P	B	L	Selection	A	E	L1	d	R	Applicable Set Screw	W	Unit Price
Hardened (Round)	6	0	8.0~12.0	5	8	4	3	M5	3						
Carburized (Round)	8	0	10.0~16.0	5	8	5	4	M5	3.5						
Dicoat (Round)	10	0	12.0~20.0	10	8	7	4	M6	4						
TiCN (Round)	10T	-0.015	12.0~20.0	5	8	7	5	M6	5						
Diamond (Diamond)	12	0	14.0~25.0	12	10	9	6	M8	6						
Diamond (Diamond)	16	-0.018	18.0~32.0	12	10	13	8	M8	8						
Diamond (Diamond)	20	-0.021	22.0~35.0	12	10	17	8	M8	9						

④ Angle A*30 is not applicable to Tip Shape B. Select from Standard Grade, No Shoulder (P.1691).

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

Part Number	Type	Tip Shape	D	P	B	L	A	E	(KC, KD --etc.)
SELNNA	A	16	-	P18.0	-	B21	-	L15	-
SELNTA	B	10	-	P14.0	-	B10	-	A60	-

Part Number	Type	Tip Shape	D	P	B	L	A	E	(KC, KD --etc.)
SELNNA	A	6	-	P8.0	-	B14	-	A30	-
SELNTA	B	10	-	P14.0	-	B10	-	A60	-

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 wears. ① Applicable to Hardening, Carburized and Round Shape Products only Groove Depth: 0.2mm (±0.05mm) Groove Shape: V Groove (90°)	① Ordering Code KC Changes the flat position to 90° from the standard position 0°. ② Applicable to Diamond Shape Type only.	① Ordering Code KD Machining on one side. ② Applicable to Round Shape Type only.	① Ordering Code MC8 Changes the thread diameter. ② Applicable to Hardening, Carburized and Round Shape Products only Groove Depth: 0.2mm (±0.05mm) Groove Shape: V Groove (90°)	① 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 ② Applicable to Threaded only. ③ 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

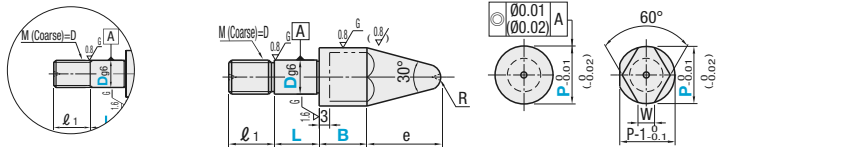


RoHS

Type	Material	Hardness
LNNAN	Round	EN 1.7220
LNNND	Diamond	Equiv.
TLNNAN	Round	EN 1.7242
TLNND	Diamond	Carburized 55HRC~ (Depth 0.7 ~ 0.8) / Anti-carburizing on Threads

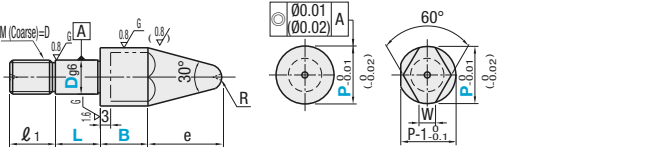
Reference: $\sin 15^\circ = 0.259 \tan 15^\circ = 0.267$

1 Dicoat® Treated Thread Shape



Type	Material	Hardness	Surface Treatment
R-NNAN	Round	EN 1.7220	35~40HRC
R-NNND	Diamond	Equiv.	(Surface 750HV ~)
D-NNAN	Round	EN 1.2379	55HRC~ (Surface 3000HV)
D-NNND	Diamond	Equiv.	Dicoat® Treated

1 Dicoat® Treated items will have the () precision and Thread Shape will be 1. $\frac{6.3}{\sqrt{1.5}} \frac{0.8}{\sqrt{0.8}} \frac{0.8}{\sqrt{0.8}}$



Part Number		P	B	L	L1	R	W	Unit Price							
Type	Dg6							LNNAN	LNNND	TLNNAN	TLNND	R-NNAN	R-NNND	D-NNAN	D-NNND
Hardened (Round)	6	-0.004 -0.012	8.0-12.0	5 8 10	6 3 3	10 4 3.5	12 4 4								
	8	-0.005 -0.014													
	10	-0.005 -0.014													
	10T	-0.006 -0.017													
Carburized (Round)	6	-0.004 -0.012	10.0-16.0	(5) (8) 10 12 15	15 5 5	15 6 6	18 8 8								
	8	-0.005 -0.014													
	10	-0.005 -0.014													
	10T	-0.006 -0.017													
Hard Chrome (Round)	6	-0.004 -0.012	12.0-20.0	(8) 10 12 15 18	22 8 9	22 8 9	22 8 9								
	8	-0.005 -0.014													
	10	-0.005 -0.014													
	10T	-0.006 -0.017													
Dicoat® (Round)	6	-0.004 -0.012	14.0-25.0	(10) 12 15 18 20	22 8 9	22 8 9	22 8 9								
	8	-0.005 -0.014													
	10	-0.005 -0.014													
	10T	-0.006 -0.017													
(Diamond)	6	-0.004 -0.012	18.0-32.0	12 15 18 20	22 8 9	22 8 9	22 8 9								
	8	-0.005 -0.014													
	10	-0.005 -0.014													
	10T	-0.006 -0.017													
(Diamond)	6	-0.004 -0.012	22.0-35.0	12 15 18 20	22 8 9	22 8 9	22 8 9								
	8	-0.005 -0.014													
	10	-0.005 -0.014													
	10T	-0.006 -0.017													

⊗ 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



RoHS

Type	Material	Hardness
LNTAN	Round	EN 1.7220
LNTDN	Diamond	Equiv.
TLNTAN	Round	EN 1.7242
TLNTDN	Diamond	Carburized 55HRC~ (Depth 0.7 ~ 0.8) / Anti-carburizing on Threads

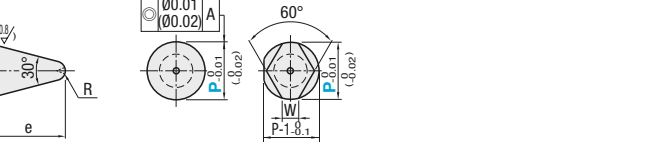
Reference: $\sin 15^\circ = 0.259 \tan 15^\circ = 0.267$

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

 $\frac{6.3}{\sqrt{1.5}} \frac{0.8}{\sqrt{0.8}} \frac{0.8}{\sqrt{0.8}}$

Type	Material	Hardness	Surface Treatment
R-NTAN	Round	EN 1.7220	35~40HRC
R-NTDN	Diamond	Equiv.	(Surface 750HV ~)
D-NTAN	Round	EN 1.2379	55HRC~ (Surface 3000HV)
D-NTDN	Diamond	Equiv.	Dicoat® Treated

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



Part Number		P	B	L	L1	d	R	Applicable Set Screw	W	Unit Price							
Type	Dg6									LNTAN	LNTDN	TLNTAN	TLNTDN	R-NTAN	R-NTDN	D-NTAN	D-NTDN
Hardened (Round)	6	-0.004 -0.012	8.0-12.0	5 8 4 3	M5 3	M5 3.5	M6 4	M6 5	M8 6								
	8	-0.005 -0.014															
	10	-0.005 -0.014															
	10T	-0.006 -0.017															
Carburized (Round)	6	-0.004 -0.012	10.0-16.0	5 8 4 3	M5 3	M5 3.5	M6 4	M6 5	M8 6								
	8	-0.005 -0.014															
	10	-0.005 -0.014															
	10T	-0.006 -0.017															
Hard Chrome (Round)	6	-0.004 -0.012	12.0-20.0	5 8 4 3	M5 3	M5 3.5	M6 4	M6 5	M8 6								
	8	-0.005 -0.014															
	10	-0.005 -0.014															
	10T	-0.006 -0.017															
Dicoat® (Round)	6	-0.004 -0.012	14.0-25.0	5 8 4 3	M5 3	M5 3.5	M6 4	M6 5	M8 6								
	8	-0.005 -0.014															
	10	-0.005 -0.014															
	10T	-0.006 -0.017															
(Diamond)	6	-0.004 -0.012	18.0-32.0	5 8 4 3	M5 3	M5 3.5	M6 4	M6 5	M8 6								
	8	-0.005 -0.014															
	10	-0.005 -0.014															
	10T	-0.006 -0.017															
(Diamond)	6	-0.004 -0.012	22.0-35.0	5 8 4 3	M5 3	M5 3.5	M6 4	M6 5	M8 6								
	8	-0.005 -0.014															
	10	-0.005 -0.014															
	10T	-0.006 -0.017															

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

Ordering Example

Part Number	Type	D	P	B	L
LNNAN	6	-	P8.0	B14	L10
LNTAN	8	-	P12.0	B12	

Alterations

Part Number	Type	D	P	B	L	(KD, MC)
LNNAN	10	-	P12.0	B10	L5	KD

Alterations	Wear Groove Alterations	Flat Machining	Thread Dia.	Flat Position	Thread Length
Code	MK	KD	MC	KC	FC
	Drill 4 grooves at B Dimension. The wear and tear of the grooves indicate the degree of wear. ⚡ Applicable to Hardening, Carburized and Round Shape Products only Groove Depth: 0.2mm (±0.05mm) Groove Shape: V Groove (90°)	Entering Code KD Machining on one side. ⚡ Applicable to Round Shape Type only.	Entering Code MC8 Changes the thread diameter. ⚡ D/3:M-D Mmin3 ⚡ Applicable to Threaded only.	Entering Code KC Changes the flat position to 90° from the standard position 0°. ⚡ Applicable to Diamond Shape Type only.	Entering Code FC15 Changes the thread length. FC=1mm Increment D6-10 : M<FC-MM3 D12-16 : M<FC-MM2.5 D20 : M<FC-MM2 ⚡ Applicable to Threaded only. ⚡ Not applicable to Dicoat® and TON treatment.

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



RoHS

Type	Material	Hardness
SLNNA	Round	EN 1.7220
SLNND	Diamond	Equiv.
TSNNA	Round	EN 1.7242
TSNND	Diamond	Carburized 55HRC~ (Depth 0.7 ~ 0.8) / Anti-carburizing on Threads

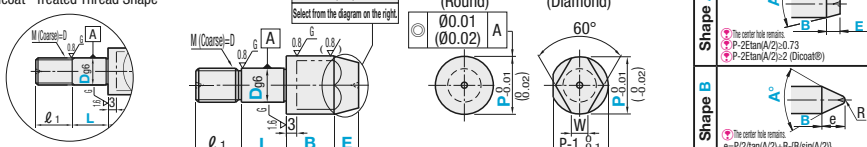
Reference: $\sin 15^\circ = 0.259 \tan 15^\circ = 0.267$

1 Dicoat® Treated Thread Shape

 $\frac{6.3}{\sqrt{1.5}} \frac{0.8}{\sqrt{0.8}} \frac{0.8}{\sqrt{0.8}}$

Type	Material	Hardness	Surface Treatment
R-SNNA	Round	EN 1.7220	35~40HRC
R-SNND	Diamond	Equiv.	(Surface 750HV ~)
D-SNNA	Round	EN 1.2379	55HRC~ (Surface 3000HV)
D-SNND	Diamond	Equiv.	Dicoat® Treated

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



Part Number		P 0.1mm Increment	B 1mm Increment	L Selection	A Selection	E 1mm Increment	L1	R	W	Unit Price								
Type	Tip Shape									Dg6	SLNNA	SLNND	TSNNA	TSNND	R-SNNA	R-SNND	D-SNNA	D-SNND
Hardened (SLNNA TSLNNA R-SNNA D-SNNA)	A (Tapered)	6	-0.004 -0.012	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	-0.005 -0.014	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						
	B (Taper R)	6	-0.006 -0.017	14.0-25.0	(8) 10 12 15 18	60 90 120												
		12		18.0-32.0	(10) 12 15 18 20													
		20	-0.007 -0.020	22.0-35.0	12 15 18 20													

*Angle A120 is not applicable to Tip Shape D. Select from Precision Grade No. Shoulder (D160P).

② L dimension in (L) is not applicable to Diamond Shape and Dicoat® treatment.

Locating Pins for Fixtures - Precision Grade, Configurable

Shouldered

■Features: Precision Grade Pins with wider selection of D/P/B/L/T Dimensions.

Threaded



⚙️ $e=P/2 \tan 15^\circ + R - (R/\sin 15^\circ)$
⚙️ Dicoat® Treated / TiCN Treated items do not come with a center hole.

Type	Material	Hardness	Surface Treatment	Surface Finish Relief
Round	Diamond			
FLANA	FLAND	EN 1.7220 Equiv.	Treated Hardness 35~40HRC	
FTLANA	FTLAND	EN 1.7242 Equiv.	Carburized Hardness 55HRC~	
FSLANA	FSLAND	EN 1.4301 Equiv.	-	
FCLANA	FCLAND	EN 1.4125 Equiv.	Treated Hardness 50~55HRC	

* Carburized: depth 0.7 ~ 0.8 / Anti-carburizing on Threads

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

Part Number	Type	D	P	B	L	T	ℓ1	H	R	M	W	Unit Price
		0.1mm Increment	0.1mm Increment	0.1mm Increment	0.1mm Increment	0.1mm Increment				(Case)		
		3	3.0-4.0	2.0-16.0	5-10		5	6	1	M3	1-2	
		4	3.0-5.0	2.0-20.0	5-10		6	7	1	M4	1-2	
		5	3.0-6.0	2.0-24.0	5-10		6	8	1	M5	1-2	
		6	3.0-7.0	2.0-28.0	5-10		6	9	1	M6	1-2	
		8	3.0-9.0	2.0-35.0	5-10		10	11	1.5	M8	1-2	
		10	5.0-12.0	3.0-35.0	8-15		12	13	2	M10	2-3	
		12	7.0-13.0	3.0-35.0	10-18		15	15	3	M12	4	
		16	13.0-16.0	5.0-35.0	12-20		18	19	4	M16	5	
		20	16.0-20.0	5.0-35.0	15-20		22	23	4	M20	5	

⚙️ B:Px4 ⚙️ (W) Dimension D:8: W=2 when P>5.0 D10: W=3 when P>7.0

Set Screw



⚙️ $e=P/2 \tan 15^\circ + R - (R/\sin 15^\circ)$
⚙️ Dicoat® Treated / TiCN Treated items do not come with a center hole.

Type	Material	Hardness	Surface Treatment	Surface Finish Relief
Round	Diamond			
FLATA	FLATD	EN 1.7220 Equiv.	Treated Hardness 35~40HRC	
FTLATA	FTLATD	EN 1.7242 Equiv.	Carburized Hardness 55HRC~	
FSLATA	FSLATD	EN 1.4301 Equiv.	-	
FCLATA	FCLATD	EN 1.4125 Equiv.	Treated Hardness 50~55HRC	

* Carburized: depth 0.7 ~ 0.8 / Anti-carburizing on Threads

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

Part Number	Type	D	P	B	L	T	ℓ1	H	d	R	Applicable Set Screw	W	Unit Price
		0.1mm Increment	0.1mm Increment	0.1mm Increment	0.1mm Increment	0.1mm Increment							
		6	3.0-7.0	2.0-28.0	5-10		8	9	4	1	M5	1-2	
		8	3.0-9.0	2.0-35.0	5-10		8	11	5	1.5	M5	1-2	
		10	5.0-12.0	3.0-35.0	8-15		8	13	7	2	M6	2-3	
		12	7.0-13.0	3.0-35.0	10-18		10	15	9	3	M6	4	
		16	13.0-16.0	5.0-35.0	10-20		10	19	13	4	M8	5	
		20	16.0-20.0	5.0-35.0	10-20		10	23	17	4	M8	5	

⚙️ B:Px4 ⚙️ (W) Dimension D6, D8: W=2 when P>5.0 D10: W=3 when P>7.0

Ordering Example
Part Number - P - B - L - T
FLANA6 - P6.8 - B10.5 - L5 - T3.1
FSLATA12 - P9.6 - B21.5 - L10 - T5.3

Alterations
Part Number - P - B - L - T - (KC, KD, SC, etc.)
FLANA6 - P6.8 - B10.5 - L5 - T3.1 - SC8
FSLATA12 - P9.6 - B21.5 - L10 - T5.3 - SC14

Alterations	Wear Groove Alterations	Flat Position	Flat Machining	Wrench Flats	Tip Angle Change	Relief	Upper Relief Radius Change
Code	MK	KC	KD	SC	RC	NNC	RTC
Spec.	Drill 4 grooves on the B dimension area. The wear and tear of the grooves indicate the degree of wear. ⚙️ Applicable to Hardening, Carburized and Round Shape Products only ⚙️ When used together with RTC, the groove starts from the area of R value + 1 mm. 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 only. ⚙️ H-P:2	Ordering Code SC Adds wrench flats. SC=1mm Increment SC>D SC<P ⚙️ Applicable to Round Shape Type only.	Ordering Code RC Changes the tip angle. Selection 60°, 90°, 120°	Ordering Code NNC Adds a relief at the thread end. ⚙️ Not applicable to Set Screw Type. ⚙️ For damage prevention, Dicoat® treatment is not applicable.	Ordering Code RTC Changes the relief to the following radius R. Selection R1 R2 R3 ⚙️ RTC=(H-P)/2 ⚙️ Applicable when B≥5

Locating Pins for Fixtures - Precision Grade, Configurable

No Shoulder

■Features: Precision Grade Pins with wider selection of D/P/B/L Dimensions.

Threaded



⚙️ $e=P/2 \tan 15^\circ + R - (R/\sin 15^\circ)$
⚙️ Dicoat® Treated / TiCN Treated items do not come with a center hole.

Type	Material	Hardness	Surface Treatment	Surface Finish Relief
Round	Diamond			
FLNNA	FLNND	EN 1.7220 Equiv.	Treated Hardness 35~40HRC	
FTLNNA	FTLNND	EN 1.7242 Equiv.	Carburized Hardness 55HRC~	
FSLNNA	FSLNND	EN 1.4301 Equiv.	-	
FCLNNA	FCLNND	EN 1.4125 Equiv.	Treated Hardness 50~55HRC	

* Carburized: depth 0.7 ~ 0.8 / Anti-carburizing on Threads

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

Part Number	Type	D	P	B	L	T	ℓ1	H	R	M	W	Unit Price
		0.1mm Increment	0.1mm Increment	0.1mm Increment	0.1mm Increment	0.1mm Increment				(Case)		
		3	4.0-6.0	2.0-16.0	5-10		5	2	M3	1.5		
		4	5.0-8.0	2.0-20.0	5-10		6	2	M4	2		
		5	6.0-10.0	2.0-24.0	5-10		6	3	M5	2		
		6	8.0-12.0	2.0-24.0	5-10		6	3	M6	3		
		8	10.0-16.0	2.0-26.0	5-10		10	4	M8	3.5		
		10	12.0-20.0	3.0-35.0	8-15		12	4	M10	4		
		12	14.0-25.0	3.0-35.0	10-18		15	6	M12	6		
		16	18.0-32.0	5.0-35.0	12-20		18	8	M16	8		
		20	22.0-35.0	5.0-35.0	15-20		22	8	M20	9		

⚙️ B:Px4 ⚙️ For Diamond Shape, B dimension 5.0 or more are applicable.

Set Screw



⚙️ $e=P/2 \tan 15^\circ + R - (R/\sin 15^\circ)$
⚙️ Dicoat® Treated / TiCN Treated items do not come with a center hole.

Type	Material	Hardness	Surface Treatment	Surface Finish Relief
Round	Diamond			
FLNTA	FLNTD	EN 1.7220 Equiv.	Treated Hardness 35~40HRC	
FTLNTA	FTLNTD	EN 1.7242 Equiv.	Carburized Hardness 55HRC~	
FSLNTA	FSLNTD	EN 1.4301 Equiv.	-	
FCLNTA	FCLNTD	EN 1.4125 Equiv.	Treated Hardness 50~55HRC	

* Carburized: depth 0.7 ~ 0.8 / Anti-carburizing on Threads

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

Part Number	Type	D	P	B	L	T	ℓ1	H	d	R	Applicable Set Screw	W	Unit Price
		0.1mm Increment	0.1mm Increment	0.1mm Increment	0.1mm Increment	0.1mm Increment							
		6	8.0-12.0	2.0-30.0	5-10		8	4	3	M5	3		
		8	10.0-16.0	2.0-35.0	5-10		8	5	4	M5	3.5		
		10	12.0-20.0	3.0-35.0	8-15		8	7	4	M6	4		
		12	14.0-25.0	3.0-35.0	10-18		10	9	6	M6	6		
		16	18.0-32.0	5.0-35.0	10-20		10	13	8	M8	8		
		20	22.0-35.0	5.0-35.0	10-20		10	17	8	M8	9		

⚙️ B:Px4 ⚙️ For Diamond Shape, B dimension 5.0 or more are applicable.

Ordering Example
Part Number - P - B - L
FTLNNA12 - P14.2 - B15.1 - L10
FLNTA10 - P12.1 - B10.5 - L8

Alterations
Part Number - P - B - L - (KC, KD, RC, NNC)
FTLNNA12 - P14.2 - B15.1 - L10 - RC60
FLNTA10 - P12.1 - B10.5 - L8 - RC120

Alterations	Wear Groove Alterations	Flat Position	Flat Machining	Tip Angle Change	Relief
Code	MK	KC	KD	RC	NNC
Spec.	Drill 4 grooves on the B dimension area. The wear and tear of the grooves indicate the degree of wear. ⚙️ 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°. ⚙️ Applicable to Diamond Shape Type only.	Ordering Code KD Machining on one side. ⚙️ Applicable to Round Shape Type only.	Ordering Code RC Changes the tip angle. Selection 60°-90°-120° ⚙️ Applicable to Diamond Shape Type only.	Ordering Code NNC Adds a relief at the thread end. ⚙️ Not applicable to Set Screw Type. ⚙️ For damage prevention, Dicoat® treatment is not applicable.

Locating Pins for Fixtures - Standard Grade, Long Head



Locating Pins for Fixtures - Standard Grade, Screw Mounted



■Features: Height direction locating is possible by using together with Height Adjusting Washer (listed on our website). Polishing Relief Groove is smaller than the conventional products to avoid a workpiece getting stuck.

Shouldered

RoHS

Type	Threaded	Set Screw	M	H
LANAR	LATAR	EN 1.7220 Equiv.	Treated Hardness 35~40HRC	
TLANAR	TLATAR	EN 1.7242 Equiv.	Carburized Treated Hardness: 55HRC~ (Depth: 0.7 ~ 0.8) / Anti-carburizing on Threads	

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

Threaded

RoHS

Set Screw

RoHS

With Surface Treatment, $\frac{1.5}{\sqrt{6}}$ changes to $\frac{1.5}{\sqrt{6}}$.

⚙️ $e = P/2 \tan 15^\circ + R - (R/\sin 15^\circ)$ ⚙️ The center hole remains.

Part Number		P		B		L		Unit Price	
Type	Dh7	0.1mm Increment	1mm Increment	Selection	ℓ	L1	ℓ1	H	d
Hardened (Threaded)	6	0.012	5.0~7.0	20~30	5 8 10	6 8 8	9	4	1
Carburized (Threaded)	8	0	5.0~9.0	20~30	5 8 10 12 15	10 8 8	11	5	1.5
Hard Chrome (Threaded)	10	-0.015	4.5~12.0	20~40	5 8 10 12 15	12 10 8	13	7	2
LANAR	10T		4.5~12.0	20~40	5 8 10 12 15	15 5 8	13	7	2
TLANAR	12	0	9.0~13.0	30~50	8 10 12 15 18	18 12 10	15	9	3
LATAR	16	-0.018	13.0~16.0	30~50	10 12 15 18 20	18 12 10	19	13	4
TLATAR									
R-ANAR									
R-ATAR									

No Shoulder

RoHS

Type	Threaded	Set Screw	M	H
LNNAR	LNTAR	EN 1.7220 Equiv.	Treated Hardness 35~40HRC	
TLNNAR	TLNTAR	EN 1.7242 Equiv.	Carburized Treated Hardness: 55HRC~ (Depth: 0.7 ~ 0.8) / Anti-carburizing on Threads	

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

Threaded

RoHS

Set Screw

RoHS

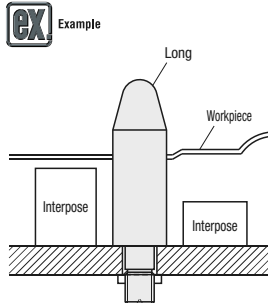
⚙️ $e = P/2 \tan 15^\circ + R - (R/\sin 15^\circ)$ ⚙️ The center hole remains.

⚙️ denoted locations for surface treated pins will be $\frac{1.5}{\sqrt{6}}$.

Part Number		P		B		L		Unit Price	
Type	Dh7	0.1mm Increment	1mm Increment	Selection	ℓ	L1	ℓ1	H	d
Hardened (Threaded)	6	0.012	8.0~12.0	5 8 10	6 8 8	4	3	M5	
Carburized (Threaded)	8	0	10.0~16.0	5 8 10 12 15	10 8 8	5	4	M5	
Hard Chrome (Threaded)	10	-0.015	12.0~20.0	5 8 10 12 15	12 10 8	7	4	M6	
LNNAR	10T		12.0~20.0	5 8 10 12 15	15 5 8	7	5	M6	
TLNNAR	12	0	14.0~25.0	8 10 12 15 18	15 12 10	9	6	M8	
LNTAR	16	-0.018	18.0~32.0	10 12 15 18 20	18 12 10	13	8	M8	
TLNTAR	20	-0.021	22.0~35.0	12 15 18 20	22 12 10	17	8	M8	
R-NNAR									
R-NTAR									

Ordering Example
Part Number - P - B - L
LNTAR 10 - P7.8 - B20
LNNAR 8 - P12.0 - B40 - L10

Alterations
Part Number - P - B - L - (KC, KD, SC, MC, RTC)
LATAR8 - P6.8 - B20 - SC



Wear Groove Alterations	Flat Machining	Wrench Flats	Thread Dia.	Upper Relief Radius Change	Tip Angle Change
Shouldered ⚙️ H-P/2 ⚙️ H-1.0 ⚙️ H-0.1	No Shoulder ⚙️ H-1.0 ⚙️ H-0.1	MC	MC	RTC	RC
Code MK	Code KD	Code SC	Code MC	Code RTC	Code RC
Drill 4 grooves at B Dimension. The wear and tear of the grooves indicate the degree of wear. ⚙️ Applicable to Hardening, Carburized and Round Shape Products only ⚙️ When used together with RTC, the groove starts from the area of R value + 1 mm. Groove Depth: 0.2mm (±0.05mm) Groove Shape: V Groove (60°)	Ordering Code KD Machining on one side.	Ordering Code SC Adds wrench flats. H 9 11 13 15 19 23 H 7 8 11 13 17 21 Mmm3 ⚙️ Applicable to Shouldered only.	Ordering Code MC8 Changes the thread diameter. ⚙️ D/3: M<D ⚙️ Applicable to Threaded only.	Ordering Code RTC2 Changes the relief to the following radius R. Section R1 R2 R3 ⚙️ Applicable to Shouldered only. ⚙️ RTC: (H-P)/2	Ordering Code RC60 Changes the tip angle. Section 60°, 90°, 120°

■Features: Screw Mounted Pins. Polishing Relief Groove is smaller than the conventional products to avoid a workpiece getting stuck.

Shouldered

RoHS

Type	Threaded	Set Screw	M	H
ELABA	ELABD	EN 1.7220 Equiv.	Treated Hardness 35~40HRC	
TELABA	TELABD	EN 1.7242 Equiv.	Carburized Treated Hardness: 55HRC~ (Depth: 0.7 ~ 0.8) / Anti-carburizing on Tapped Part	

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

Threaded

RoHS

Set Screw

RoHS

With Surface Treatment, $\frac{1.5}{\sqrt{6}}$ changes to $\frac{1.5}{\sqrt{6}}$.

⚙️ $e = P/2 \tan 15^\circ + R - (R/\sin 15^\circ)$ ⚙️ The center hole remains.

Part Number		P		B		L		Unit Price	
Type	Dh7	0.1mm Increment	1mm Increment	Selection	ℓ	L1	ℓ1	H	d
Hardened (Round)	6	0.012	3.0~7.0	10~16	5 9 1	M3	1~2		
Carburized (Round)	8	0	3.0~9.0	12~20	6 11 1.5	M4	1~2		
ELABA	10	-0.015	4.5~12.0	15~20	8 13 2	M5	1~3		
TELABA	10T		4.5~12.0	18~20	8 13 2	M6	1~3		
(Diamond)	12	0	7.0~13.0	15~20	8 15 3	M5	4		
ELABD	16	-0.018	13.0~16.0	21~32	12 19 4	M8	5		
TELABD	20	-0.021	16.0~20.0	21~40	12 23 4	M8	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

No Shoulder

RoHS

Type	Threaded	Set Screw	M	H
ELNBA	ELNBD	EN 1.7220 Equiv.	Treated Hardness 35~40HRC	
TELNBA	TELNBD	EN 1.7242 Equiv.	Carburized Treated Hardness: 55HRC~ (Depth: 0.7 ~ 0.8) / Anti-carburizing on Tapped Part	

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

Threaded

RoHS

Set Screw

RoHS

⚙️ $e = P/2 \tan 15^\circ + R - (R/\sin 15^\circ)$ ⚙️ The center hole remains.

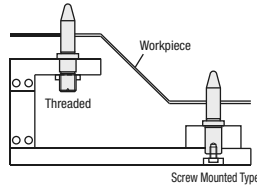
Part Number		P		B		L		Unit Price	
Type	Dh7	0.1mm Increment	1mm Increment	Selection	ℓ	L1	ℓ1	H	d
Hardened (Round)	6	0.012	8.0~12.0	9~16	5 3	M3	3		
Carburized (Round)	8	0	10.0~16.0	9~20	6 4	M4	3.5		
ELNBA	10	-0.015	12.0~20.0	10~20	8 4	M5	4		
TELNBA	10T		12.0~20.0	10~24	8 5	M6	4		
(Diamond)	12	0	14.0~25.0	10~32	8 6	M5	6		
ELNBD	16	-0.018	18.0~32.0	10~40	12 8	M8	8		
TELNBD	20	-0.021	22.0~35.0	10~40	12 8	M8	9		

⚙️ B Dimension is selectable from 5 mm ~ for Diamond Shape.

Ordering Example
Part Number - P - B - L
ELABA 8 - P6.8 - B14.0 - L10
ELNBA 10 - P14.0 - B25.0 - L15

Alterations
Part Number - P - B - L - (KC, KD, SC, MC, RTC)
ELABA10 - P7.0 - B14.0 - L12 - KD

Wear Groove Alterations	Flat Position	Flat Machining	Wrench Flats	Upper Relief Radius Change	Tip Angle Change
Shouldered ⚙️ H-P/2 ⚙️ H-1.0 ⚙️ H-0.1	No Shoulder ⚙️ H-1.0 ⚙️ H-0.1	No Shoulder ⚙️ H-1.0 ⚙️ H-0.1	MC	RTC	RC
Code MK	Code KC	Code KD	Code SC	Code RTC	Code RC
Drill 4 grooves at B Dimension. The wear and tear of the grooves indicate the degree of wear. ⚙️ Applicable to Hardening, Carburized and Round Shape Products only ⚙️ When used together with RTC, the groove starts from the area of R value + 1 mm. Groove Depth: 0.2mm (±0.05mm) Groove Shape: V Groove (60°)	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.	Ordering Code SC Adds wrench flats. H 9 11 13 15 19 23 H 7 8 11 13 17 21 Mmm3 ⚙️ Applicable to Round Shape with Shoulder Type only	Ordering Code RTC2 Changes the relief to the following radius R. Section R1 R2 R3 ⚙️ Applicable to Shouldered only. ⚙️ RTC: (H-P)/2 ⚙️ B:5	Ordering Code RC60 Changes the tip angle. Section 60°, 90°, 120°



Locating Pins for Fixtures - Standard Grade, Round Edge

Tip Shape Selectable

Locating Pins for Fixtures - Standard Grade, Bullet Nose

Part Number
Change
Printed in Purple

■ Features: Addition of a radius to the edge makes smooth insertion and extraction of workpiece. For damage prevention, radius is added to upper-lower surface of shoulder.

Shouldered

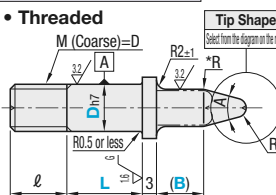


RoHS

Type	Retaining Part Shape	Shape	Material	Hardness
Threaded	Set Screw			
RANA	RATA	Round	EN 1.7220 Equiv.	Treated Hardness 35~40HRC
RAND	RATD	Diamond		
TRANA	TRATA	Round	EN 1.7242 Equiv.	Carburized Treated Hardness: 55HRC~ (Depth: 0.7 ~ 0.8) / Anti-carburizing on Threads
TRAND	TRATD	Diamond		

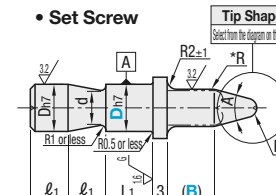
* A30=R10
A60, 90, 120=R3, however, for B Shape, only edge part will be removed as the tip becomes short.
Reference: $\sin 15^\circ=0.259$ $\tan 15^\circ=0.267$ $\sin 30^\circ=0.5$ $\tan 30^\circ=0.577$ $\sin 45^\circ=0.707$ $\tan 45^\circ=1$ $\sin 60^\circ=0.866$ $\tan 60^\circ=1.732$

Threaded

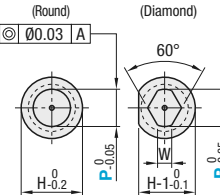


Tip Shape
Select from the diagram on the right.

Set Screw



Tip Shape
Select from the diagram on the right.



Tip Shape The center hole remains.

A Shape

B Shape

$e=P/2 \tan(A/2) + R_1 - (R_1 \sin(A/2))$

Part Number		Type		Tip Shape	Dh7	P 0.1mm Increment	B 1mm Increment	L Selection	A Selection	E (Shape A) 1mm Increment	ℓ	L1	ℓ1	d	Applicable Set Screw	H	R1	W	Unit Price				
[Threaded]	[Set Screw]																			RANA RATA	RAND RATD	TRANA TRATA	TRAND TRATD
Hardened (Round) RANA TRANA	Carburized (Round) RATA TRATA	A	0	-0.015	6	3.0~7.0	5~30 (R5P×4)	5 8 10	30 60 90 120	3~10	6	8	8	4	M5	9	1	1~2					
					8	3.0~9.0		5 8 10 12 15			10	8	5	M5	11	1.5	1~2						
					10	4.5~12.0		(5) (8) 10 12 15			12	10	8	7	M6	13	2	1~3					
					10T	4.5~12.0					18	5	8	7	M6	13	2	1~3					
Diamond (Round) RANA TRANAD	Diamond (Round) RATA TRATD	B	0	-0.018	10T	9.0~13.0	(8) 10 12 15 18				15	12	10	9	M8	15	3	4					
					16	13.0~16.0	(10) 12 15 18 20	18	12	10	13	M8	19	3	5								

① W Dimension D6, 8, 10, 10T: W=1 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 ② L dimension in () is not applicable to Diamond Shape.

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	Reference: $\sin 15^\circ = 0.259$ $\tan 15^\circ = 0.267$	$\sin 30^\circ = 0.5$ $\tan 30^\circ = 0.577$	$\sin 45^\circ = 0.707$ $\tan 45^\circ = 1$	$\sin 60^\circ = 0.866$ $\tan 60^\circ = 1.732$
Threaded	Set Screw						
LANQN	LATQN	EN 1.7220 Equiv.	Treated Hardness 35~40HRC				
TLANQN	TLATQN	EN 1.7242 Equiv.	Carburized Treated Hardness: 55HRC~(Depth: 0.7 ~ 0.8) / Anti-carburizing on Threads				

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

• Set Screw
Tip Shape
Select from the diagram on the right.

Tip Shape Selectable
shape A
The center hole remains.
 $e = P/2 \tan(A/2) \geq 0.73$
shape B
The center hole remains.
 $e = P/2 \tan(A/2) + R - (R/\sin(A/2))$

Part Number				P 0.1mm Increment	W 0.1mm Increment	B 1mm Increment	L Selection	A Selection	E (Shape A) 1mm Increment	L1	ℓ	ℓ1	H	d	R	Applicable Set Screw	Unit Price	
Type	Tip Shape	Dh7	LANQN LATQN														TLANQN TLATQN	
Hardened (Threaded) LANQN (Set Screw) LATQN	Carburized (Threaded) TLANQN (Set Screw) TLATQN	A (Tapered)	6	0 -0.012	7.0	5.0~17.0 (W≤P)	5 8 10	30 60 90 120	1~10	8	6	8	9	4	1	M5		
			8	0 -0.015	7.0~9.0		5 8 10 12 15			8	10	8	11	5	1.5	M5		
		B (Taper R)	10T		7.0~11.0		8 10 12 15			10	12	8	13	7	2	M6		
			12	0 -0.018	9.0~13.0		10 12 15 18			12	15	10	15	9	3	M8		
			16		13.0~17.0		12 15 18 20			12	18	10	19	13	4	M8		

No Shoulder



Type		Material	Hardness	Reference: $\sin 15^\circ = 0.259$ $\tan 15^\circ = 0.267$	$\sin 30^\circ = 0.5$ $\tan 30^\circ = 0.577$	$\sin 45^\circ = 0.707$ $\tan 45^\circ = 1$	$\sin 60^\circ = 0.866$ $\tan 60^\circ = 1.732$
Threaded	Set Screw						
LNNQN	LNTQN	EN 1.7220 Equiv.	Treated Hardness 35~40HRC				
TLNNQN	TLNTQN	EN 1.7242 Equiv.	Carburized Treated Hardness: 55HRC~(Depth: 0.7 ~ 0.8) / Anti-carburizing on Threads				

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

• Set Screw
Tip Shape
Select from the diagram on the right.

Tip Shape Selectable
shape A
The center hole remains.
 $e = P/2 \tan(A/2) \geq 0.73$
shape B
The center hole remains.
 $e = P/2 \tan(A/2) + R - (R/\sin(A/2))$

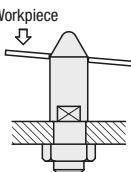
Part Number				P 0.1mm Increment	W 0.1mm Increment	B 1mm Increment	L Selection	A Selection	E (Shape A) 1mm Increment	L ₁	ℓ	ℓ ₁	d	R	Applicable Set Screw	Unit Price					
Type	Tip Shape	Dh7	LNNQN LNTQN													TLNNQN TLNTQN					
Hardened (Threaded) LNNQN (Set Screw) LNTQN	Carburized (Threaded) TLNNQN (Set Screw) TLNTQN	A (Tapered)	6	0 -0.012	9.0~12.0	5.0~30.0 (W≤P)	5 8 10	30 60 90 120	1~10	8	6	8	4	3	M5						
			8								10	8	5	4	M5						
		10	0 -0.015	13.0~20.0							8	10	8	7	4	M6					
		12		10 12 15							10	12	8	7	4	M6					
		B (Taper R)	10T		13.0~20.0					8 10 12 15			5	15	8	7	4	M6			
			12	0 -0.018	15.0~25.0		10 12 15 18			12	15	10	9	6	M8						
							19.0~32.0				12 15 18 20			12	18	10	13	8	M8		

	Ordering Example									
	Part Number			P	W	B	L	A	E	
	Type	Tip Shape	D							
	LANQN	A	6	P7.0	W5.0	B15	L8	A30	E8	
	LNNQN	B	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

Alterations	Flat Position		Thread Dia.	Upper Relief Radius Change
	Shouldered / No Shoulder			
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. ④ D/3<M<D M min 3 ④ Applicable to Threaded only.	Ordering Code RTC0.2 Changes R1 to R of the Selection below. Selection 0.2 R2 R3 ④ RTC≤(H-P)/2 ④ 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	Reference: $\sin 15^\circ = 0.259$ $\tan 15^\circ = 0.267$	$\sin 30^\circ = 0.5$ $\tan 30^\circ = 0.577$	$\sin 45^\circ = 0.707$ $\tan 45^\circ = 1$	$\sin 60^\circ = 0.866$ $\tan 60^\circ = 1.732$
Oval, Precision Grade	Oval, Standard Grade						
Threaded	Set Screw	EN 1.7220 Equiv.	Treated Hardness 35~40HRC				
LNLANF	LNLATF						
TLNLANF	TLNLATF	EN 1.7242 Equiv.	Carburized Treated Hardness: 55HRC~(Depth: 0.7 ~ 0.8) / Anti-carburizing on Threads				

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

• Set Screw
Tip Shape
Select from the diagram on the right.

Tip Shape Selectable
shape A
The center hole remains.
 $e = P/2 \tan(A/2) \geq 0.73$
shape B
The center hole remains.
 $e = P/2 \tan(A/2) + R - (R/\sin(A/2))$

• Precision Grade
• Standard Grade

Part Number				P 0.1mm Increment	W 0.1mm Increment	B 1mm Increment	L Selection	L ₁	L	ℓ ₁	H	d	R	Applicable Set Screw	Unit Price			
Type	Dg6		LNLANF LNLANF												TLNLANF TLNLANF	LNLATF LNLATF	TLNLATF TLNLATF	
Precision Grade (Threaded Hardening) LNLANF (Threaded Carburizing) TLNLANF	Standard Grade (Set Screw Hardening) LNLANF (Set Screw Carburizing) TLNLANF	6	-0.004 -0.012	5.0~9.0	3.0~17.0 (P≥W+2.0)	5~30 Standard Grade (B≤Wx4) Precision Grade (B≤Wx3)	5 8	8	6	8	9	4	1	M5				
		8	-0.005 -0.014	5.0~11.0			5 12 15	8	10	8	11	5	1.5	M5				
		10	-0.006 -0.017	7.0~13.0			10 12 15	10	12	8	13	7	2	M6				
		12	-0.006 -0.017	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	Reference: $\sin 15^\circ = 0.259$ $\tan 15^\circ = 0.267$	$\sin 30^\circ = 0.5$ $\tan 30^\circ = 0.577$	$\sin 45^\circ = 0.707$ $\tan 45^\circ = 1$	$\sin 60^\circ = 0.866$ $\tan 60^\circ = 1.732$
Oval, Precision Grade	Oval, Standard Grade						
Threaded	Set Screw	EN 1.7220 Equiv.	Treated Hardness 35~40HRC				
LNLNLF	LNLNLF						
TLNLNLF	TLNLNLF	EN 1.7242 Equiv.	Carburized Treated Hardness: 55HRC~(Depth: 0.7 ~ 0.8) / Anti-carburizing on Threads				

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

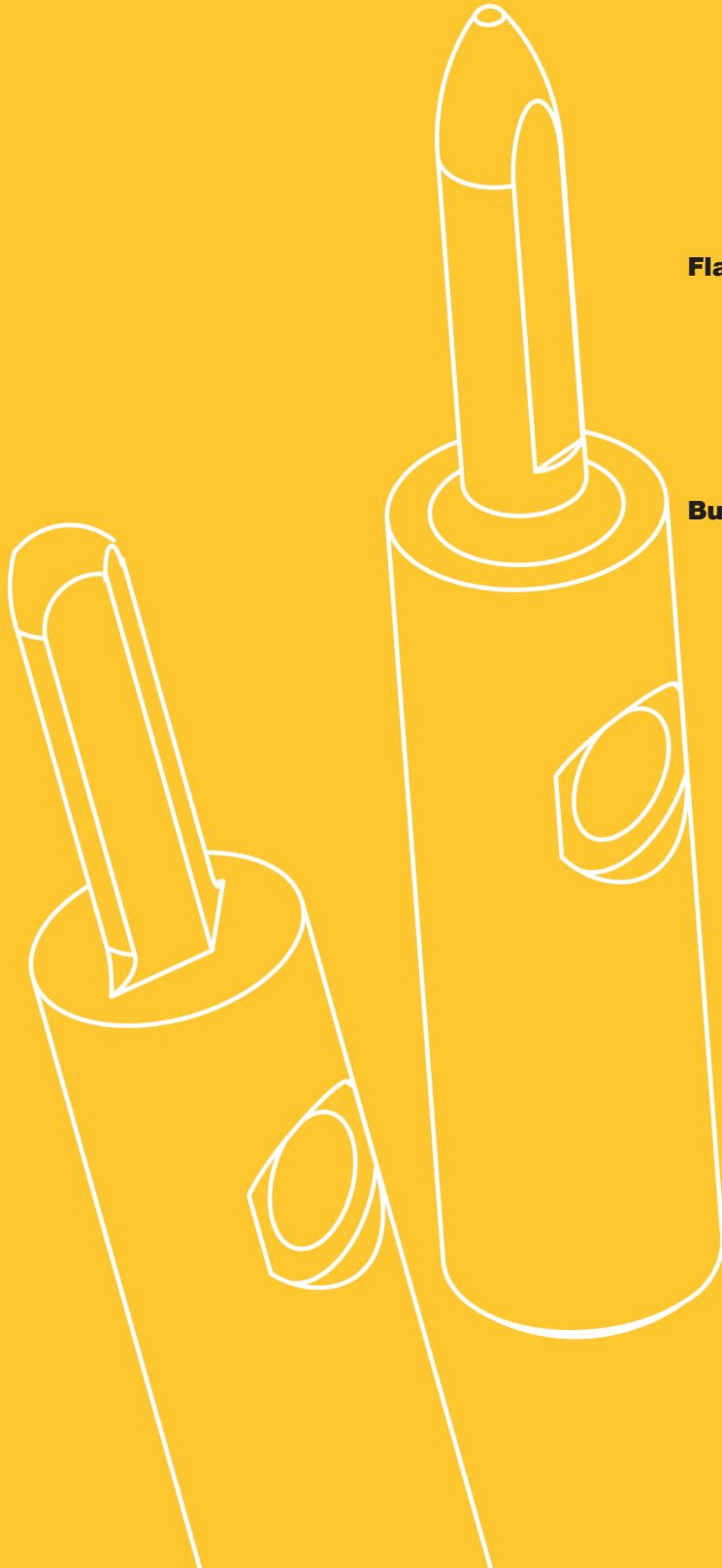
• Set Screw
Tip Shape
Select from the diagram on the right.

Tip Shape Selectable
shape A
The center hole remains.
 $e = P/2 \tan(A/2) \geq 0.73$
shape B
The center hole remains.
 $e = P/2 \tan(A/2) + R - (R/\sin(A/2))$

• Precision Grade
• Standard Grade

Part Number				P 0.1mm Increment	W 0.1mm Increment	B 1mm Increment	L Selection	L ₁	L	ℓ ₁	d	R	Applicable Set Screw	Unit Price			
Type	D _{g6}	L _{NL} N _{NF}	TL _{NL} N _{NF}											L _{NL} N _{NF}	TL _{NL} N _{NF}	L _{NL} N _{NF}	TL _{NL} N _{NF}
Precision Grade (Threaded Hardening) (Set Screw Hardening)	Standard Grade (Threaded Hardening) (Set Screw Hardening)	6	-0.004 -0.012	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	L _{NL} N _{NF} TL _{NL} N _{NF}	TL _{NL} N _{NF} TL _{NL} N _{NF}	L _{NL} N _{NF} TL _{NL} N _{NF}	TL _{NL} N _{NF} TL _{NL} N _{NF}
		8	-0.005 -0.014	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				
TL _{NL} N _{NF}	TL _{NL} N _{NF}	TL _{NL} N _{NF}	TL _{NL} N _{NF}	16		20.0~32.0	15 18 20	12	18	10	13	6	M8				

CONFIGURABLE AND STANDARD RETRACTABLE LOCATING PINS



Round Head Shape

40-45

APS Small R Head

40

APS Large R Head

41

ARP Small R Head

42

ARP Large R Head

43

APQ Small R Head

44

APQ Large R Head

45

Flat Head Shape

46-49

APE Small R Head

46

APE Large R Head

47

ARE Small R Head

48

ARE-R Large

49

Bullet Head Shape

50-53

Small Head Retractable
Fully Configurable

50

Large Head Retractable
Fully Configurable

51

Small Head Retractable
Fully Configurable

52

Large Head Retractable
Fully Configurable

53

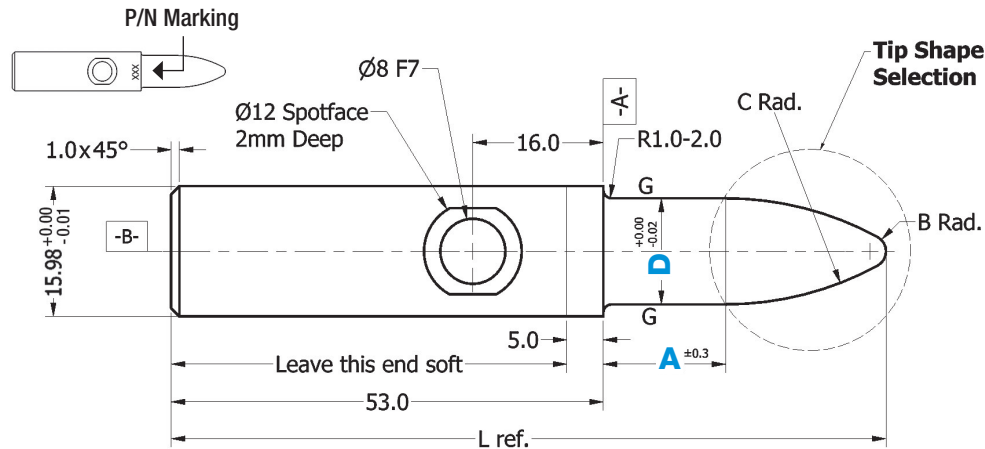


Locating Pins

APS-R SMALL HEAD



Retractable Locating Pins



3D CAD is available online.

Tip Shape Selection

A Shape	Bullet	
B Shape	Half Bullet	
C Shape	Sphere	

$$L_{ref.} = 53 + A + \sqrt{D \left(C - \frac{D}{4} \right)}$$

Type	Coating	Head Shape	Material	Hardness
APS	Standard NAAMS	Round	8620 Alloy Steel (JIS SNCM220)	Carburized 58 ~ 62HRC (Depth 0.5-0.7 after Grinding)
APSR	A Configurable			
	None - Plain T - TiN			
	P - Plain T - TiN			

Tolerance				
Dim.	Tol.	Finish (Ra)	Geometric	
0.0	± 0.3	6.0 µm		0.015 T.I.R to Datum A & B
0.00	± 0.03	3.0 µm		
0.000	± 0.015	1.6 µm		0.03 T.I.R

Standard NAAMS Pins

Type	D Head Dia. Callout (Actual)	A Lead Length										Retractable	Coating	B Rad	C Rad
		10 mm	15 mm	25 mm	35 mm	45 mm	55 mm	65 mm	75 mm	85 mm	95 mm				
APS (Hole -0.15)	06 (5.85)	1	2	3	4	5	6	-	-	-	-	R - Retractable	None - Plain T - TiN	1.0	18.0
	08 (7.85)	1	2	3	4	5	6	7	8	-	-			1.0	24.0
	10 (9.85)	1	2	3	4	5	6	7	8	9	0			2.0	30.0
	13 (12.85)	1	2	3	4	5	6	7	8	9	0			2.0	39.0
	16 (15.85)	1	2	3	4	5	6	7	8	9	0			2.0	48.0

Standard NAAMS specifications are controlled by the NAAMS organization and the latest version of these products will be produced in compliance to: www.naamsstandards.org.

Configurable NAAMS (A Configurable)

Type	Coating	Tip Shape	D Head Dia. Callout (Actual)	A Lead Length (1 mm Inc.)	B Rad	C Rad		
						Tip A	Tip B	Tip C
APSR (Hole -0.15)	P - Plain T - TiN	A	6 (5.85)	5 ~ 55	1.0	18.0	9.0	D/2
			8 (7.85)	5 ~ 75		24.0	12.0	D/2
		B	10 (9.85)	5 ~ 100	2.0	30.0	15.0	D/2
			13 (12.85)			39.0	19.5	D/2
		C	16 (15.85)			48.0	24.0	D/2

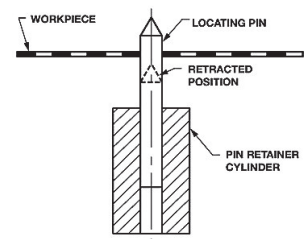
P/N Example (Standard NAAMS):

Part Number				
Type	D	A	Retractable	Coating
APS	08	4	R	T
APS	13	0		

P/N Example (Configurable NAAMS):

Part Number				
Type	Coating	Tip Shape	D	A
APSR	P	B	8	A35

Application Example

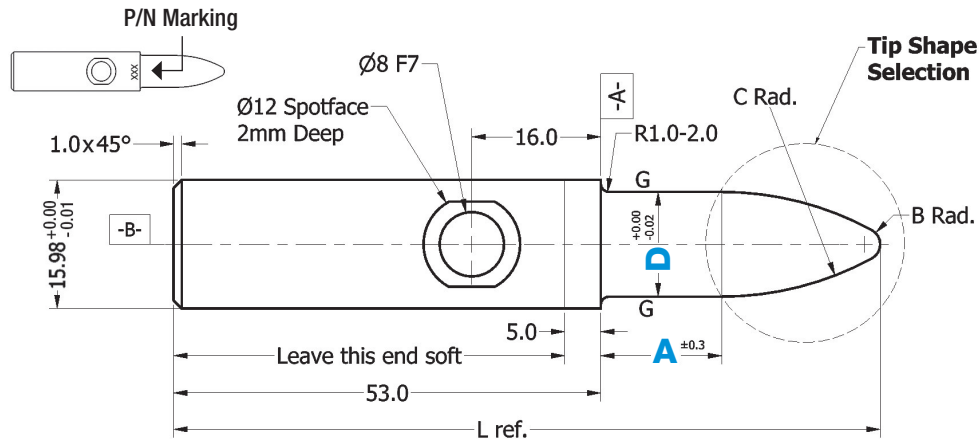


Respot Pins

ARP-R SMALL HEAD



Retractable Locating Pins



3D CAD is available online.

Tip Shape Selection

A Shape	Bullet	
B Shape	Half Bullet	
C Shape	Sphere	

$$L \text{ ref.} = 53 + A + \sqrt{D \left(C - \frac{D}{4} \right)}$$

Type	Coating	Material	Hardness
ARP	Standard NAAMS None - Plain T - TiN	8620 Alloy Steel (JIS SNCM220)	Carburized 58 ~ 62HRC (Depth 0.5-0.7 after Grinding)
ARPRS	A Configurable P - Plain T - TiN		

Tolerance				
Dim.	Tol.	Finish (Ra)	Geometric	
0.0	± 0.3	6.0 µm		0.015 T.I.R to Datum A & B
0.00	± 0.03	3.0 µm		
0.000	± 0.015	1.6 µm		0.03 T.I.R

Standard NAAMS Pins

Type	D Head Dia. Callout (Actual)	A Lead Length										Retractable	Coating	B Rad	C Rad
		10 mm	15 mm	25 mm	35 mm	45 mm	55 mm	65 mm	75 mm	85 mm	95 mm				
ARP (Hole -0.28)	06 (5.72)	1	2	3	4	5	6	-	-	-	-	R - Retractable	None - Plain T - TiN	1.0	18.0
	08 (7.72)	1	2	3	4	5	6	7	8	-	-			1.0	24.0
	10 (9.72)	1	2	3	4	5	6	7	8	9	0			2.0	30.0
	13 (12.72)	1	2	3	4	5	6	7	8	9	0			2.0	39.0
	16 (15.72)	1	2	3	4	5	6	7	8	9	0			2.0	48.0

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Configurable NAAMS (A Configurable)

Type	Coating	Tip Shape	D Head Dia. Callout (Actual)	A Lead Length (1 mm Inc.)	B Rad	C Rad		
						Tip A	Tip B	Tip C
ARP (Hole -0.28)	P - Plain T - TiN	A	6 (5.72)	5 ~ 55	1.0	18.0	9.0	D/2
			8 (7.72)	5 ~ 75		24.0	12.0	D/2
		B	10 (9.72)	5 ~ 100	2.0	30.0	15.0	D/2
			13 (12.72)			39.0	19.5	D/2
		C	16 (15.72)			48.0	24.0	D/2

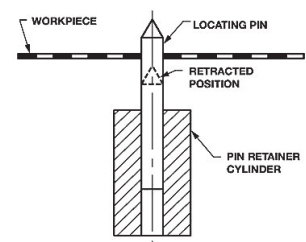
P/N Example (Standard NAAMS):

Part Number				
Type	D	A	Retractable	Coating
ARP	08	4	R	
ARP	08	4	R	T

P/N Example (Configurable NAAMS):

Part Number				-	A
Type	Coating	Tip Shape	D		
ARPRS	T	A	8	-	A42

Application Example

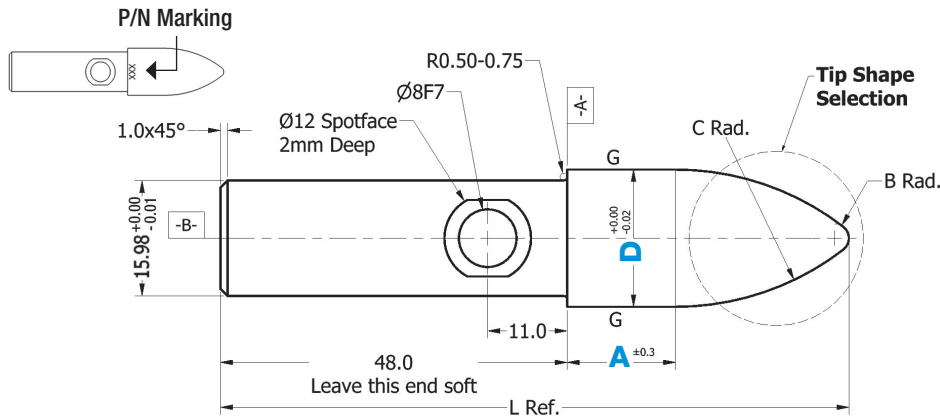




Respot Pins

ARP-R LARGE HEAD

Retractable Locating Pins



3D CAD is available online.

Tip Shape Selection	
A Shape	Bullet
B Shape	Half Bullet
C Shape	Sphere

$$L \text{ ref.} = 48 + A + \sqrt{D \left(C - \frac{D}{4} \right)}$$

Type	Coating	Material	Hardness
ARP	Standard NAAMS None - Plain T - TiN	8620 Alloy Steel (JIS SNCM220)	Carburized 58 ~ 62HRC (Depth 0.5-0.7 after Grinding)
ARPL	A Configurable P - Plain T - TiN		

Tolerance				
Dim.	Tol.	Finish (Ra)	Geometric	
0.0	± 0.3	6.0 µm	$\perp$	0.015 T.I.R to Datum A & B
0.00	± 0.03	3.0 µm	$\parallel$	
0.000	± 0.015	1.6 µm	$\odot$	0.03 T.I.R

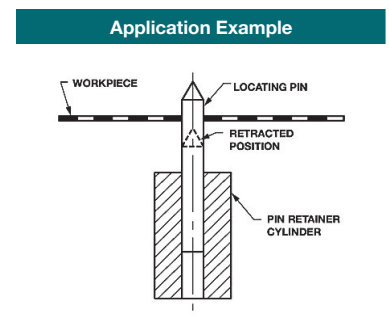
Standard NAAMS Pins															
Type	D Head Callout	A Lead Length										Retractable	Coating (Optional)	B Rad	C Rad
		15 mm	20 mm	30 mm	40 mm	50 mm	60 mm	70 mm	80 mm	90 mm	100 mm				
ARP (Hole -0.28)	19 (18.72)	1	2	3	4	5	6	7	8	9	0	R - Retractable	None - Plain	2.0	38.0
	25 (24.72)	1	2	3	4	5	6	7	8	9	0		T - TiN	2.0	50.0

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Configurable NAAMS (A Configurable)								
Type	Coating	Tip Shape	D Head Dia. Callout (Actual)	A Lead Length (1 mm Inc.)	B Rad	C Rad		
						Tip A	Tip B	Tip C
ARPL (Hole -0.28)	P - Plain	A	19 (18.72)	5 ~ 100	2.0	38.0	19.0	D/2
	T - TiN	B C	25 (24.72)			50.0	25.0	D/2

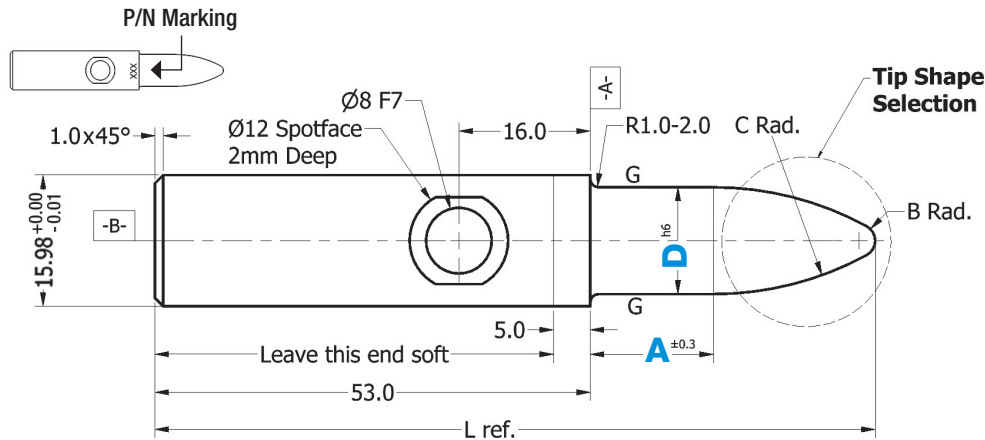
P/N Example (Standard NAAMS):				
Part Number				
Type	D	A	Retractable	Coating
ARP	19	4	R	T
	25	0		

P/N Example (Configurable NAAMS):					
Part Number					
Type	Coating	Tip Shape	D	-	A
APSL	P	A	19	-	A42
	T	C	25	-	A99



Locating Pins

APQ-R SMALL HEAD



3D CAD is available online.

Tip Shape Selection

A Shape	Bullet	
B Shape	Half Bullet	
C Shape	Sphere	

$$L \text{ ref.} = 53 + A + \sqrt{D \left(C - \frac{D}{4} \right)}$$

Type	Coating	Material	Hardness
APQ	Standard NAAMS None - Plain T - TiN	8620 Alloy Steel (JIS SNCM220)	Carburized 58 ~ 62HRC (Depth 0.5-0.7 after Grinding)
APQRS	A Configurable P - Plain T - TiN		

Tolerance				
Dim.	Tol.	Finish (Ra)	Geometric	
0.0	± 0.3	6.0 µm		0.015 T.I.R to Datum A & B
0.00	± 0.03	3.0 µm		
0.000	± 0.015	1.6 µm		0.03 T.I.R

Standard NAAMS Pins

Type	D Head Callout	A Lead Length								Retractable	Coating (Optional)	B Rad	C Rad
		10 mm	15 mm	25 mm	35 mm	45 mm	55 mm	65 mm	75 mm				
APQ (Hole h6)	08	1	2	3	4	5	6	7	8	R - Retractable	None - Plain T - TiN	1.0	24.0
	10	1	2	3	4	5	6	7	8			2.0	30.0
	13	1	2	3	4	5	6	7	8			2.0	39.0

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Configurable NAAMS (A Configurable)

Type	Coating	Tip Shape	D Head Callout	A Lead Length (1 mm Inc.)	B Rad	C Rad		
						Tip A	Tip B	Tip C
APQRS (Hole h6)	P - Plain T - TiN	A B C	8	5 ~ 100	2.0	24.0	12.0	D/2
			10			30.0	15.0	D/2
			13			39.0	19.5	D/2

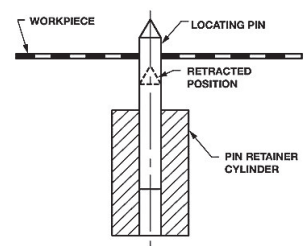
P/N Example (Standard NAAMS):

Part Number				
Type	D	A	Retractable	Coating
APQ	08	4	R	T

P/N Example (Configurable NAAMS):

Part Number				-	A
Type	Coating	Tip Shape	D		
APQRS	T	A	8	-	A42

Application Example

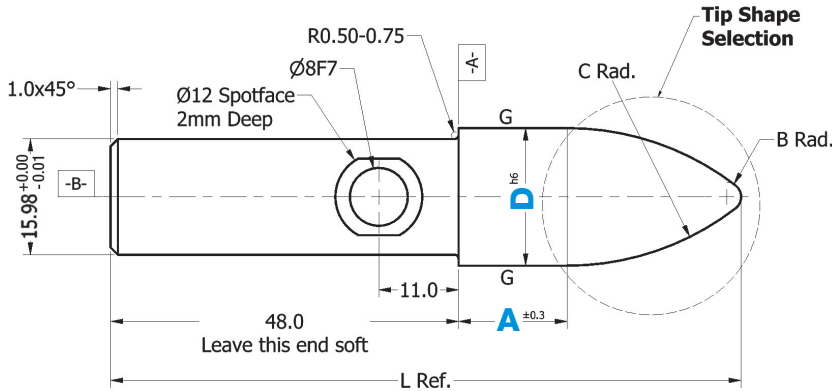




Locating Pins

APQ-R LARGE HEAD

3D CAD is available online.



$$L \text{ ref.} = 48 + A + \sqrt{D \left(C - \frac{D}{4} \right)}$$



Tip Shape Selection		
A Shape	Bullet	
B Shape	Half Bullet	
C Shape	Sphere	

Type	Coating	Material	Hardness
APQ	Standard NAAMS None - Plain T - TiN	8620 Alloy Steel (JIS SNCM220)	Carburized 58 ~ 62HRC (Depth 0.5-0.7 after Grinding)
APQRL	A Configurable P - Plain T - TiN		

Tolerance				
Dim.	Tol.	Finish (Ra)	Geometric	
0.0	± 0.3	6.0 µm		0.015 T.I.R to Datum A & B
0.00	± 0.03	3.0 µm		
0.000	± 0.015	1.6 µm		0.03 T.I.R

Standard NAAMS Pins													
Type	D Head Callout	A Lead Length								Retractable	Coating	B Rad	C Rad
APQ (Hole h6)	16	1	2	3	4	5	6	7	8	R - Retractable	None - Plain T - TiN	2.0	48.0
	18	1	2	3	4	5	6	7	8			2.0	38.0
	20	1	2	3	4	5	6	7	8			2.0	38.0
	25	1	2	3	4	5	6	7	8			2.0	50.0
	30	1	2	3	4	5	6	7	8			2.0	50.0
	35	1	2	3	4	5	6	7	8			2.0	50.0
	40	1	2	3	4	5	6	7	8			2.0	50.0

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Configurable NAAMS (A Configurable)									
Type	Coating	Tip Shape	D Head Callout	A Lead Length (1 mm Inc.)	B Rad	C Rad			
APQRL (Hole h6)	P - Plain T - TiN	A B C	16	5 ~ 100	2.0	Tip A	Tip B	D/2	
			18			48.0	24.0		
			20			38.0	19.0		
			25			38.0	19.0		
			30			50.0	25.0		
			35			50.0	25.0		
			40			50.0	25.0		
			40			50.0	25.0		

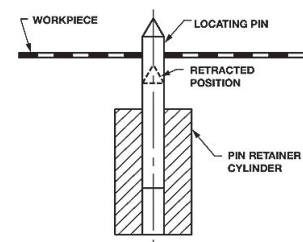
P/N Example (Standard NAAMS):

Part Number				
Type	D	A	Retractable	Coating
APQ	18	4	R	T

P/N Example (Configurable NAAMS):

Part Number					
Type	Coating	Tip Shape	D		A
APQRL	T	A	19	-	A42

Application Example

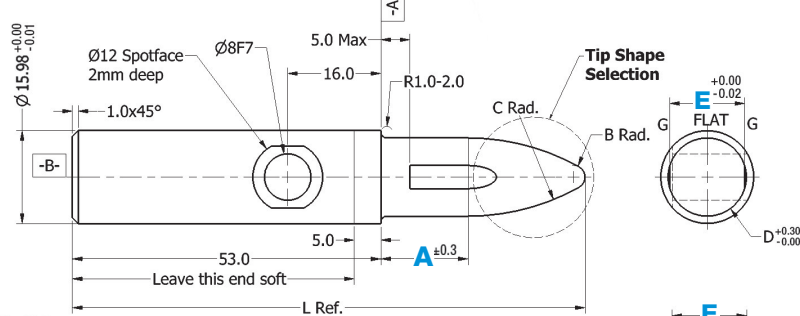


Locating Pins

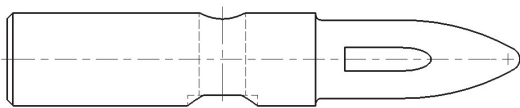
APE-R SMALL HEAD



-Front Hole



-Side Hole



$$L \text{ ref.} = 53 + A + \sqrt{D \left(C - \frac{D}{4} \right)}$$



3D CAD is available online.

Tip Shape Selection

A Shape	Bullet	
B Shape	Half Bullet	
C Shape	Sphere	

Type	Retractable	Coating	Material	Hardness
APE	Standard NAAMS	R - Front Hole S - Side Hole	8620 Alloy Steel (JIS SNCM220)	Carburized 58 ~ 62HRC (Depth 0.5-0.7 after Grinding)
APERS	A Configurable	Front Hole		
APESS		Side Hole		

Tolerance				
Dim.	Tol.	Finish (Ra)	Geometric	
0.0	± 0.3	6.0 µm		0.015 T.I.R to Datum A & B
0.00	± 0.03	3.0 µm		
0.000	± 0.015	1.6 µm		0.03 T.I.R

Standard NAAMS

Type	E Flat Callout (Actual)	A Lead Length										Retractable	Coating (Optional)	D Diameter	B Rad	C Rad
		10 mm	15 mm	25 mm	35 mm	45 mm	55 mm	65 mm	75 mm	85 mm	95 mm					
APE (Slot -0.15)	06 (5.85)	1	2	3	4	5	6	-	-	-	-	R - Front Hole	None - Plain T - TiN	7.09	1.0	18.0
	08 (7.85)	1	2	3	4	5	6	7	8	-	-			8.81	1.0	24.0
	10 (9.85)	1	2	3	4	5	6	7	8	9	0	S - Side Hole		10.63	2.0	30.0
	13 (12.85)	1	2	3	4	5	6	7	8	9	0			13.46	2.0	39.0

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Configurable NAAMS (A Configurable)

Type	Coating	Tip Shape	E Flat Callout (Actual)	A Lead Length (1 mm Inc.)	D Diameter	B Rad	C Rad		
							Tip A	Tip B	Tip C
APERS (Front Hole) APESS (Side Hole) (Slot -0.15)	P - Plain	A	6 (5.85)	10 ~ 55	7.09	1.0	18.0	9.0	D/2
			8 (7.85)	10 ~ 75	8.81		24.0	12.0	D/2
	T - TiN	B	10 (9.85)	10 ~ 100	10.63	2.0	30.0	15.0	D/2
			13 (12.85)		13.46		39.0	19.5	D/2

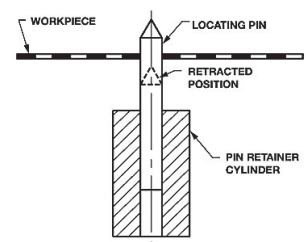
P/N Example (Standard NAAMS):

Part Number				
Type	E	A	Retractable	Coating
APE	08	4	R	T

P/N Example (Configurable NAAMS):

Part Number				
Type	Coating	Tip Shape	E	
APERS	P	C	10	A22
APESS	T	A	8	A42

Application Example



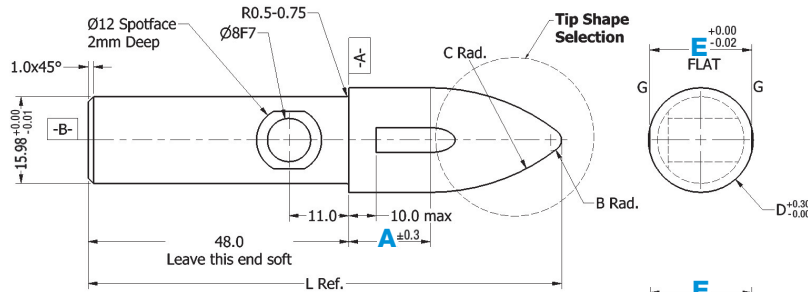


Locating Pins

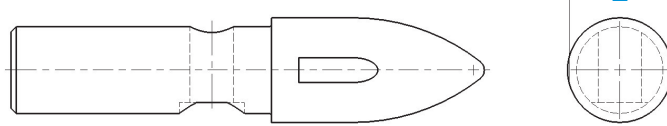
APE-R LARGE HEAD

3D CAD is available online.

-Front Hole



-Side Hole



$$L \text{ ref.} = 48 + A + \sqrt{D \left(C - \frac{D}{4} \right)}$$



Tip Shape Selection

A Shape	Bullet	
B Shape	Half Bullet	
C Shape	Sphere	

Type	Retractable	Coating	Material	Hardness
APE	Standard NAAMS	R - Front Hole S - Side Hole	None - Plain T - TiN	8620 Alloy Steel (JIS SNCM220)
APERL	A Configurable	Front Hole	P - Plain	Carburized 58 ~ 62HRC (Depth 0.5-0.7 after Grinding)
APESL		Side Hole	T - TiN	

Tolerance				
Dim.	Tol.	Finish (Ra)	Geometric	
0.0	± 0.3	6.0 µm		0.015 T.I.R to Datum A & B
0.00	± 0.03	3.0 µm		
0.000	± 0.015	1.6 µm		0.03 T.I.R

Standard NAAMS

Type	E Flat Callout (Actual)	A Lead Length										Retractable	Coating (Optional)	D Diameter	B Rad	C Rad
		15 mm	20 mm	30 mm	40 mm	50 mm	60 mm	70 mm	80 mm	90 mm	100 mm					
APE (Slot -0.15)	16 (15.85)	1	2	3	4	5	6	7	8	9	0	R - Retractable Front Hole S - Retractable Side Hole	None - Plain T - TiN	16.35	2.0	48.0
	19 (18.85)	1	2	3	4	5	6	7	8	9	0			19.27	2.0	38.0
	25 (24.85)	1	2	3	4	5	6	7	8	9	0			25.17	2.0	50.0

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Configurable NAAMS (A Configurable)

Type	Coating	Tip Shape	E Flat Callout (Actual)	A Lead Length (1 mm Inc.)	D Diameter	B Rad	C Rad		
							Tip A	Tip B	Tip C
APERL (Front Hole)	P - Plain T - TiN	A	16 (15.85)	10 ~ 100	16.35	2.0	48.0	24.0	D/2
APERL (Side Hole)		B	19 (18.85)		19.27		38.0	19.0	D/2
APESL (Side Hole) (Slot -0.15)		C	25 (24.85)		25.17		50.0	25.0	D/2

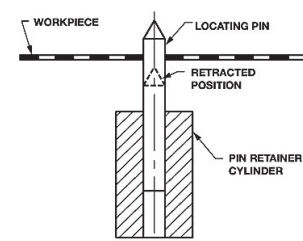
P/N Example (Standard NAAMS):

Part Number				
Type	E	A	Retractable	Coating
APE	19	4	R	T

P/N Example (Configurable NAAMS):

Part Number				-	A
Type	Coating	Tip Shape	E		
APERL	T	A	19	-	A42

Application Example



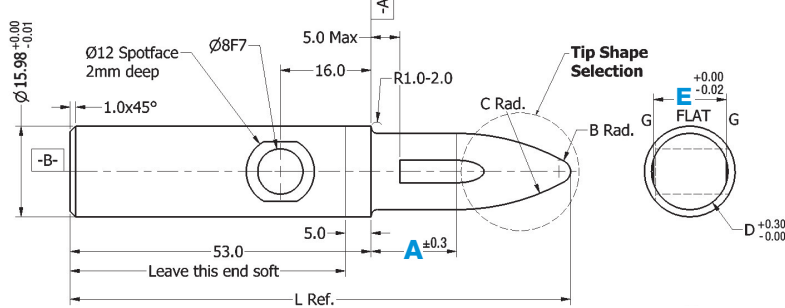
Respot Pins

ARE-R SMALL HEAD

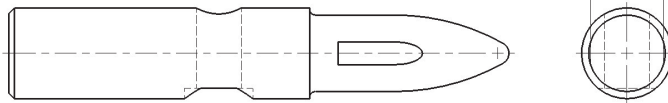


Retractable Locating Pins

-Front Hole



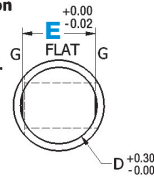
-Side Hole



$$L \text{ ref.} = 53 + A + \sqrt{D \left(C - \frac{D}{4} \right)}$$



Tip Shape Selection



3D CAD is available online.

Tip Shape Selection

A Shape	Bullet	C Rad.
B Shape	Half Bullet	C Rad.
C Shape	Sphere	C Rad.

Type	Retractable	Coating	Material	Hardness
ARE	Standard NAAMS	R - Front Hole S - Side Hole	None - Plain T - TiN	8620 Alloy Steel (JIS SNCM220)
ARERS	A Configurable	Front Hole	P - Plain	Carburized 58 ~ 62HRC (Depth 0.5-0.7 after Grinding)
ARESS		Side Hole	T - TiN	

Tolerance				
Dim.	Tol.	Finish (Ra)	Geometric	
0.0	± 0.3	6.0 µm	⊥	0.015 T.I.R to Datum A & B
0.00	± 0.03	3.0 µm	//	
0.000	± 0.015	1.6 µm	⊙	0.03 T.I.R

Standard NAAMS

Type	E Flat Callout (Actual)	A Lead Length										Retractable	Coating	For Slot	D Diameter	B Rad	C Rad
		10 mm	15 mm	25 mm	35 mm	45 mm	55 mm	65 mm	75 mm	85 mm	95 mm						
ARE (Slot -0.28)	06 (5.72)	1	2	3	4	5	6	-	-	-	-	R - Front Hole	None - Plain T - TiN	6x12	7.09	1.0	18.0
	08 (7.72)	1	2	3	4	5	6	7	8	-	-			8x14	8.81	1.0	24.0
	10 (9.72)	1	2	3	4	5	6	7	8	9	0	S - Side Hole		10x16	10.63	2.0	30.0
	13 (12.72)	1	2	3	4	5	6	7	8	9	0			13x19	13.46	2.0	39.0

Standard NAAMS specifications are controlled by the NAAMS organization and the latest version of these products will be produced in compliance to: www.naamsstandards.org.

Configurable NAAMS (A Configurable)

Type	Coating	Tip Shape	E Flat Callout (Actual)	A Lead Length (1 mm Inc.)	For Slot	D Diameter	B Rad	C Rad		
ARERS (Front Hole)	P - Plain	A	6 (5.72)	10 ~ 55	6x12	7.09	1.0	Tip A	Tip B	Tip C
ARESS (Side Hole)	T - TiN	B	8 (7.72)	10 ~ 75	8x14	8.81	1.0	18.0	9.0	D/2
		C	10 (9.72)	10 ~ 100	10x16	10.63	2.0	24.0	12.0	D/2
			13 (12.72)		13x19	13.46		30.0	15.0	D/2
								39.0	19.5	D/2

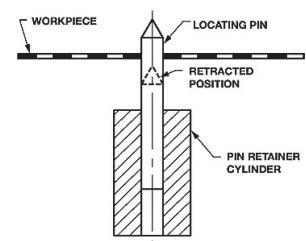
P/N Example (Standard NAAMS):

Part Number				
Type	E	A	Retractable	Coating
ARE	08	4	R	
ARE	13	0	S	T

P/N Example (Configurable NAAMS):

Part Number				
Type	Coating	Tip Shape	E	
ARERS	P	A	6	A42
ARESS	T	C	10	A99

Application Example

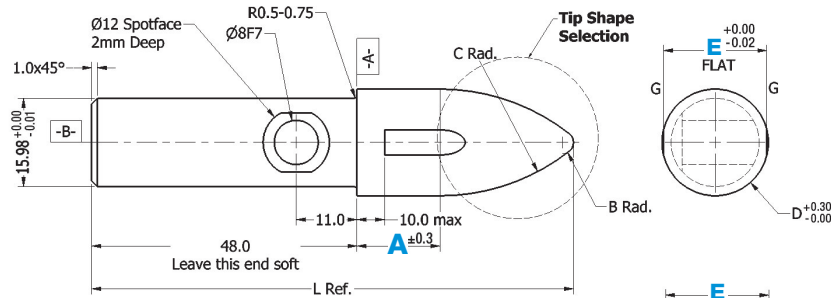




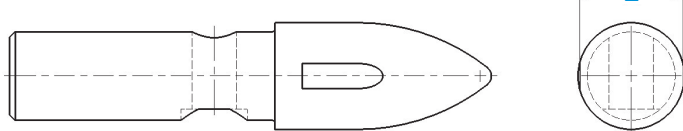
Respot Pins

ARE-R LARGE

-Front Hole



-Side Hole



3D CAD is available online.

Tip Shape Selection

A Shape	Bullet	
B Shape	Half Bullet	
C Shape	Sphere	

$$L \text{ ref.} = 48 + A + \sqrt{D \left(C - \frac{D}{4} \right)}$$



Type	Retractable	Coating	Material	Hardness
ARE	Standard NAAMS R - Front Hole S - Side Hole	None - Plain T - TiN	8620 Alloy Steel (JIS SNCM220)	Carburized 58 ~ 62HRC (Depth 0.5-0.7 after Grinding)
ARERL	A Configurable	Front Hole		
ARES		Side Hole		

Tolerance				
Dim.	Tol.	Finish (Ra)	Geometric	
0.0	± 0.3	6.0 µm		0.015 T.I.R to Datum A & B
0.00	± 0.03	3.0 µm		
0.000	± 0.015	1.6 µm		0.03 T.I.R

Standard NAAMS

Type	E Flat Callout (Actual)	A Lead Length										Retractable	Coating	For Slot	D Diameter	B Rad	C Rad
		15 mm	20 mm	30 mm	40 mm	50 mm	60 mm	70 mm	80 mm	90 mm	100 mm						
ARE (Slot -0.28)	16 (15.72)	1	2	3	4	5	6	7	8	9	0	R - Retractable Front Hole S - Retractable Side Hole	None - Plain T - TiN	16x22	16.35	2.0	48.0
	19 (18.72)	1	2	3	4	5	6	7	8	9	0			19x25	19.27	2.0	38.0
	25 (24.72)	1	2	3	4	5	6	7	8	9	0			25x31	25.17	2.0	50.0

Standard NAAMS specifications are controlled by the NAAMS organization and the latest version of these products will be produced in compliance to: www.naamsstandards.org.

Configurable NAAMS (A Configurable)

Type	Coating	Tip Shape	E Flat Callout (Actual)	A Lead Length (1 mm Inc.)	For Slot	D Diameter	B Rad	C Rad		
								Tip A	Tip B	Tip C
ARERL (Front Hole)	P - Plain T - TiN	A B C	16 (15.72)	10 ~ 100	16x22	16.35	2.0	48.0	24.0	D/2
ARES (Side Hole)			19 (18.72)		19x25	19.27		38.0	19.0	D/2
ARES (Slot -0.28)			25 (24.72)		25x31	25.17		50.0	25.0	D/2

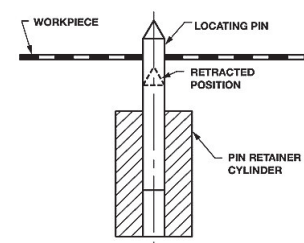
P/N Example (Standard NAAMS):

Part Number				
Type	E	A	Retractable	Coating
ARE	19	4	R	T
ARE	16	9	S	

P/N Example (Configurable NAAMS):

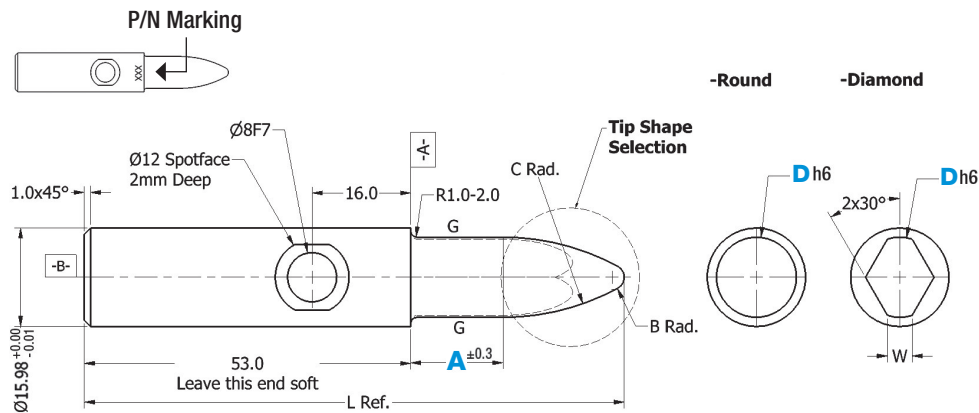
Part Number					
Type	Coating	Tip Shape	E	-	A
ARERL	P	A	25	-	A42
ARES	T	C	16	-	A99

Application Example



Locating Pins

SMALL HEAD RETRACTABLE FULLY CONFIGURABLE



3D CAD is available online.

Tip Shape Selection		
A Shape	Bullet	
B Shape	Half Bullet	
C Shape	Sphere	

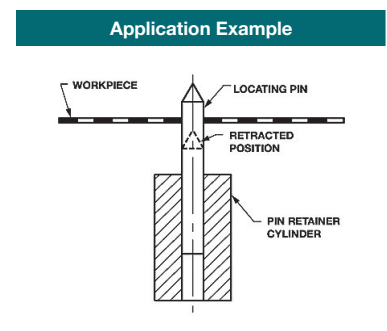
$$L \text{ ref.} = 53 + A + \sqrt{D \left(C - \frac{D}{4} \right)}$$

Type	Retractable	Coating	Material	Hardness
ARFS	Round	P - Plain	8620 Alloy Steel (JIS SNCM220)	Carburized 58 ~ 62HRC (Depth 0.5-0.7 after Grinding)
ARFSD	Diamond	T - TiN		

Tolerance				
Dim.	Tol.	Finish (Ra)	Geometric	
0.0	± 0.3	6.0 µm		0.015 T.I.R to Datum A & B
0.00	± 0.03	3.0 µm		
0.000	± 0.015	1.6 µm		0.03 T.I.R

Configurable NAAMS (A & D Configurable)								
Type	Coating	Tip Shape	D Head Dia. (0.01 mm Inc.)	D Tol.	A Lead Length (0.1 mm Inc.)	B Rad	W	C Rad
ARFS (Round) ARFSD (Diamond)	P - Plain T - TiN	A	6.00 ~ 6.99	+0.000 -0.009	5.0 ~ 55.0	1.0	2.0	Tip A C=Dx3.0 (Ø≤16) C=Dx2.0 (Ø>16)
		B	7.00 ~ 7.99		5.0 ~ 75.0			
		C	8.00 ~ 8.99		5.0 ~ 80.0			
			9.00 ~ 9.99	+0.000 -0.011	5.0 ~ 100.0	2.0	3.0	Tip B C=Dx1.5 (Ø≤16) C=Dx1.0 (Ø>16)
			10.00 ~ 16.00				4.0-5.0	

P/N Example (Configurable NAAMS):						
Part Number			-	D	-	A
Type	Surface Finish	Tip Shape				
ARFSD	P	C	-	D8.55	-	A42.1
ARFS	T	A	-	D8.55	-	A42.1

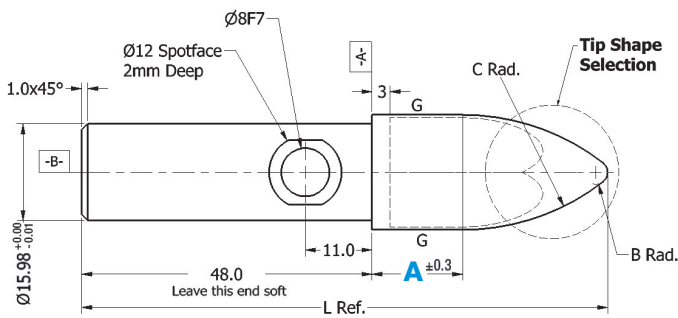




Locating Pins

LARGE HEAD RETRACTABLE FULLY CONFIGURABLE

Retractable Locating Pins



-Round

-Diamond

3D CAD is available online.

Tip Shape Selection

A Shape	Bullet	
B Shape	Half Bullet	
C Shape	Sphere	

$$L \text{ ref.} = 48 + A + \sqrt{D \left(C - \frac{D}{4} \right)}$$



Type	Retractable	Coating	Material	Hardness
ARFL	Round	P - Plain	8620 Alloy Steel (JIS SNCM220)	Carburized 58 ~ 62HRC (Depth 0.5-0.7 after Grinding)
ARFLD	Diamond	T - TiN		

Tolerance				
Dim.	Tol.	Finish (Ra)	Geometric	
0.0	± 0.3	6.0 µm		0.015 T.I.R to Datum A & B
0.00	± 0.03	3.0 µm		
0.000	± 0.015	1.6 µm		0.03 T.I.R

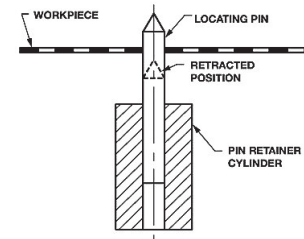
Configurable NAAMS (A & D Configurable)

Configurable NAAMS (A & D Configurable)								
Type	Coating	Tip Shape	D (0.01 mm Inc.)	D Tol.	A Lead Length (0.1 mm Inc.)	W	B Rad	C Rad
ARFL (Round)	P - Plain	A	16.10 ~ 25.00	h6	5.0 ~ 100.0	6.0	2.0	Tip A C=Dx3.0 (Ø≤16) C=Dx2.0 (Ø>16)
		B	25.01 ~ 40.00			7.0-9.0		Tip B C=Dx1.5 (Ø≤16) C=Dx1.0 (Ø>16)
C	Tip C C=Dx0.5							

P/N Example (Configurable NAAMS):

Part Number			-	D	-	A
Type	Surface Finish	Tip Shape				
ARFL	P	A	-	D17.78	-	A42.0
ARFLD	T	C	-	D31.78	-	A42.0

Application Example

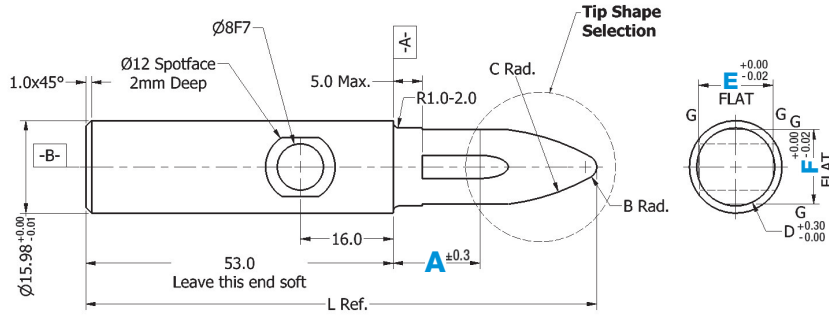


Locating Pins

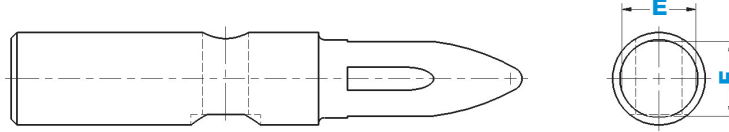
SMALL HEAD RETRACTABLE FULLY CONFIGURABLE



-Front Hole



-Side Hole



$$L \text{ ref.} = 53 + A + \sqrt{D \left(C - \frac{D}{4} \right)}$$



3D CAD is available online.

Tip Shape Selection

A Shape	Bullet	
B Shape	Half Bullet	
C Shape	Sphere	

Type	Retractable	Coating	Material	Hardness
ARFERS	Front Hole	None - Plain T - TiN	8620 Alloy Steel (JIS SNCM220)	Carburized 58 ~ 62HRC (Depth 0.5-0.7 after Grinding)
ARFESS	Side Hole	P - Plain T - TiN		

Tolerance				
Dim.	Tol.	Finish (Ra)	Geometric	
0.0	± 0.3	6.0 µm		0.015 T.I.R to Datum A & B
0.00	± 0.03	3.0 µm		
0.000	± 0.015	1.6 µm		0.03 T.I.R

Configurable NAAMS (A & D Configurable)

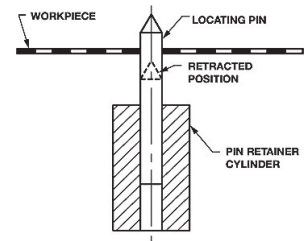
Type	Coating	Tip Shape	E Flat (0.01 mm Inc.)	F Flat (0.01 mm Inc.)	D Diameter	A Lead Length (1 mm Inc.)	B Rad	C Rad
ARFERS (Front Hole) ARFESS (Side Hole)	P - Plain T - TiN	A	6.00~10.00	6.00~ 16.00	D= E/F+1.0	10 ~ 100	2.0	Tip A C=Dx3.0 (Ø≤16) C=Dx2.0 (Ø>16)
		B	10.01~16.00	10.01 ~ 16.00	D= E/F+0.75			Tip B C=Dx1.5 (Ø≤16) C=Dx1.0 (Ø>16)
		C						Tip C C=Dx0.5

Note: D Diameter is calculated on E or F Flat size (whichever is larger).

P/N Example (Configurable NAAMS):

Part Number			-	E	-	F	-	A
Type	Coating	Tip Shape						
ARFESS	P	C	-	E12.01	-	F11.01	-	A42
ARFERS	T	A	-	E8.06	-	F11.01	-	A42

Application Example



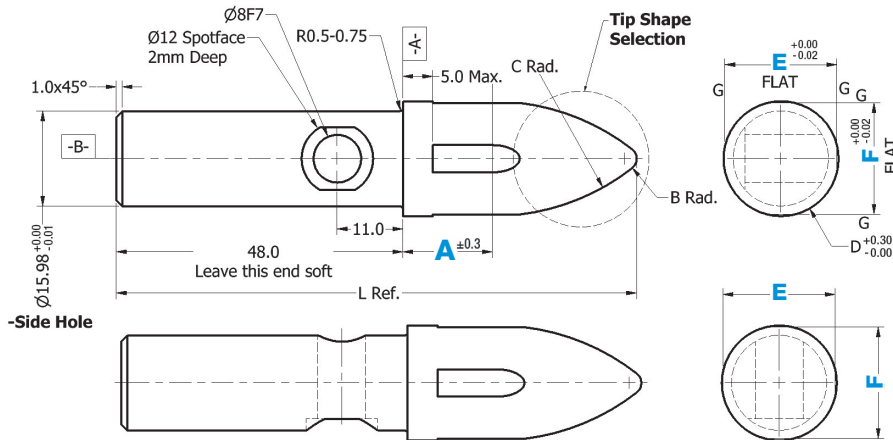
For square holes.



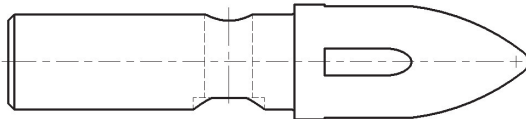
Locating Pins

LARGE HEAD RETRACTABLE FULLY CONFIGURABLE

-Front Hole



-Side Hole



3D CAD is available online.

Tip Shape Selection

A Shape	Bullet	
B Shape	Half Bullet	
C Shape	Sphere	

$$L \text{ ref.} = 48 + A + \sqrt{D \left(C - \frac{D}{4} \right)}$$



Type	Retractable	Coating	Material	Hardness
ARFERL	Front Hole	P - Plain	8620 Alloy Steel (JIS SNCM220)	Carburized 58 ~ 62HRC (Depth 0.5-0.7 after Grinding)
ARFESL	Side Hole	T - TIN		

Tolerance				
Dim.	Tol.	Finish (Ra)	Geometric	
0.0	± 0.3	6.0 µm		0.015 T.I.R to Datum A & B
0.00	± 0.03	3.0 µm		
0.000	± 0.015	1.6 µm		0.03 T.I.R

Configurable NAAMS (A & D Configurable)

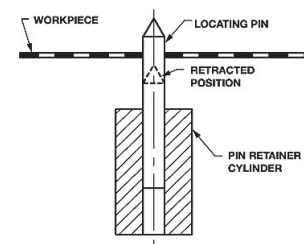
Type	Coating	Tip Shape	E Flat (0.01 mm Inc.)	F Flat (0.01 mm Inc.)	D Diameter	A Lead Length (1 mm Inc.)	B Rad	C Rad
ARFERL (Front Hole) ARFESL (Side Hole)	P - Plain T - TiN	A B C	16.10~20.00	16.10 ~ 25.00	D= E+0.45	10.0 ~ 100.0	2.0	Tip A C=Dx3.0 (Ø≤16) C=Dx2.0 (Ø>16)
			20.01~25.00	16.10 ~ 25.00	D= E+0.35			Tip B C=Dx1.5 (Ø≤16) C=Dx1.0 (Ø>16)
								Tip C C=Dx0.5

Note: D Diameter is calculated on E or F Flat size (whichever is larger).

P/N Example (Configurable NAAMS):

Part Number			-	E	-	F	-	A
Type	Surface Finish	Tip Shape						
ARFESL	P	A	-	E21.05	-	F17.50	-	A42
ARFERL	T	A	-	E16.70	-	F20.01	-	A42

Application Example



For square holes.

