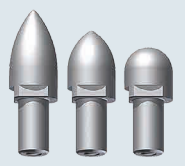


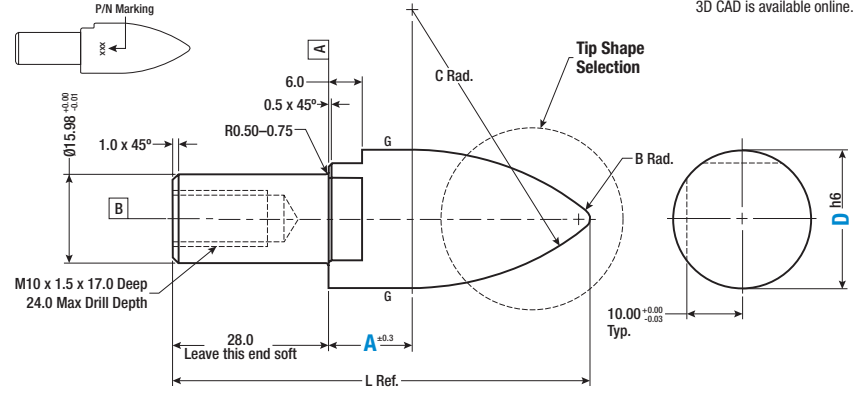
Locating Pins

APQ Standard / A Configurable Large Head



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)
APQL	A Configurable P - Plain T - TiN R - Rainbow DLC		
M2APQ	Standard NAAMS None - Plain D - Rainbow DLC	M2 Tool Steel (JIS SKH51)	Thru hardened 58-65 HRC (with drawn shank >35 HRC)
M2APQL	A Configurable P - Plain R - Rainbow DLC		

3D CAD is available online.



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

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

$$L \text{ ref.} = 28 + A + B + \sqrt{(C-B)^2 - \left(C - \frac{D}{2}\right)^2}$$

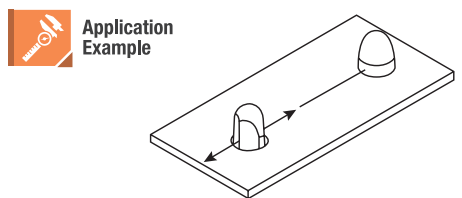
Type	D Head Dia.	A Lead Length								Coating	B Rad	C Rad
		15 mm	20 mm	30 mm	40 mm	50 mm	60 mm	70 mm	80 mm			
APQ M2APQ	25	1	2	3	4	5	6	7	8	None - Plain T - TiN (not available on M2 Pins) D - Rainbow DLC (Only for M2 Pins)	2.0	50.0
	30	1	2	3	4	5	6	7	8			
	35	1	2	3	4	5	6	7	8			
	40	1	2	3	4	5	6	7	8			

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.

Type	Coating	Tip Shape	D Head Dia.	A Lead Length (1 mm Inc.)	B Rad	C Rad		
						Tip A	Tip B	Tip C
APQL M2APQL	P - Plain T - TiN (not available on M2 Pins) R - Rainbow DLC	A B C	25	10-100	2.0	50.0	25.0	D/2
			30					
			35					
			40					

Part Number Example

Standard	Type	D	A	Coating
APQ	- 30 -	5		
APQ	- 25 -	4	- T	
M2APQ	- 25 -	6		
M2APQ	- 25 -	8	- D	

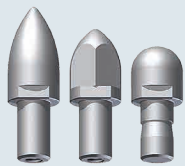


Part Number Example

Configurable	Type	Coating	Tip Shape	D Callout	A
APQL	- P -	A	- 25 -	A42	
APQL	- T -	B	- 30 -	A65	
M2APQL	- P -	C	- 25 -	A85	
M2APQL	- R -	B	- 25 -	A56	

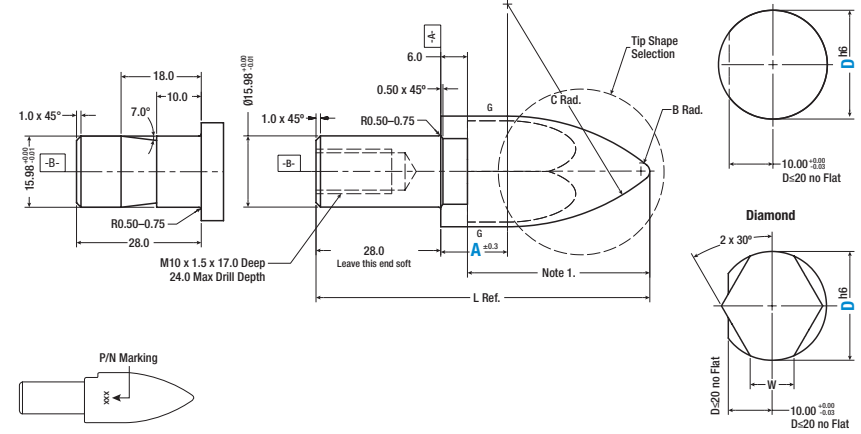
Locating Pins

APFL Configurable Large Head



Type	Coating	Head Shape	Material	Hardness
APFL	P - Plain	Round	8620 Alloy Steel (JIS SNCM220)	Carburized 58 - 62HRC (Depth 0.5-0.7 after Grinding)
APFLD	T - TiN R - Rainbow DLC	Diamond		
M2APFL	P - Plain	Round	M2 Tool Steel (JIS SKH51)	Thru hardened 58-65 HRC (with drawn shank >35 HRC)
M2APFLD	R - Rainbow DLC	Diamond		

3D CAD is available online.



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

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

$$L \text{ ref.} = 28 + A + B + \sqrt{(C-B)^2 - \left(C - \frac{D}{2}\right)^2}$$

Type	Coating	Shank Style	Tip Shape	D (0.01 mm Inc.)		A Lead Length (0.1 mm Inc.)	W	B Rad	C Rad
				Dia.	Tol. h6				
APFL Round	P - Plain	B - Screw Mount T - Setscrew	A B C	19.00-30.00	+0.000 -0.013	10.0-100.0	8.0	2.0	Tip A C = D x 2.0 (θ≥19) Tip B C = D x 1.0 (θ≥19) Tip C C = D x 0.5
APFLD Diamond	T - TiN (not available on M2 Pins)								
M2APFL Round	R - Rainbow DLC			30.01-50.00	+0.000 -0.016				
M2APFLD Diamond									

When D≥20 there is no Flat.
Note 1: Chatter may be present on flat surface.

Part Number Example

Configurable

Type	Coating	Shank Style	Tip Shape	D Callout	A	Alteration (KE)
APFLD	- P -	T -	C -	D37.15	- A12.0	
APFL	- T -	B -	A -	D19.05	- A42.0	- KE
M2APFL	- R -	B -	A -	D39.16	- A38	- KE
M2APFLD	- P -	B -	C -	D20.22	- A52.1	

Part Number Alterations

Code	KE
Description	Add 2nd Flat to the shoulder
Spec	10 mm +0.00 / -0.03

