


Locating Pins

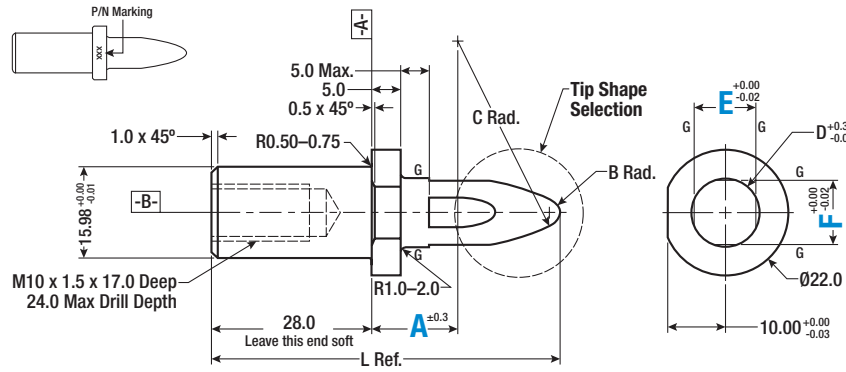
A & E Configurable Small Head



Type	Coating	Material	Hardness
APFES	P - Plain	8620 Alloy Steel (JIS SNCM220)	Carburized 58 - 62HRC (Depth 0.5-0.7 after Grinding)
	T - TiN		
	R - Rainbow DLC		
M2APFES	P - Plain	M2 Tool Steel (JIS SKH51)	Thru hardened 58-65 HRC (with drawn shank >35 HRC)
	R - Rainbow DLC		

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

3D CAD is available online.



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

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

Configurable NAAMS (E, F & A Configurable)								
Type	Coating	Tip Shape	E Flat (0.01 mm Inc.)	F Flat (0.01 mm Inc.)	A Lead Length (1 mm Inc.)	D Diameter	B Rad	C Rad
APFES M2APFES	P - Plain T - TiN (not available on M2 Pins) R - Rainbow DLC	A	5.00-10.00	6.00-19.00	15-100	D = E/F + 1.0	2.0	Tip A C = D x 3.0 (Ø≤16) C = D x 2.0 (Ø>16) Tip B C = D x 1.5 (Ø≤16) C = D x 1.0 (Ø>16) Tip C C = D x 0.5
		B						
		C	10.01-19.00					

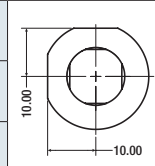
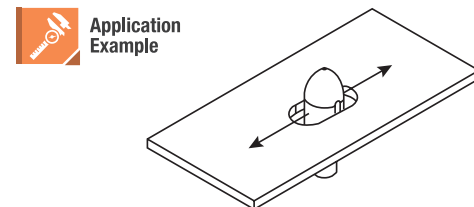
Part Number Example

Configurable

Type	Coating	Tip Shape	E	F	A	Alteration (KE)
APFES	P	A	E6.05	F9.56	A25	
APFES	T	B	E12.01	F11.57	A72	KE
M2APFES	R	B	E8.06	F8.62	A56	KE
M2APFES	P	C	E18.42	F18.05	A86	


Part Number Alterations

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

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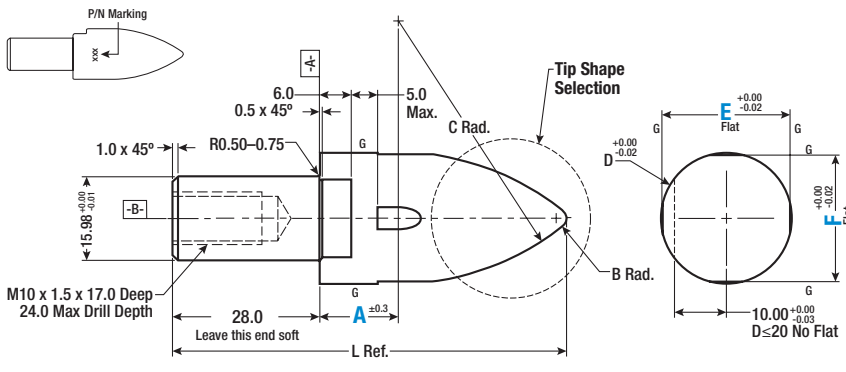
A & E Configurable Large Head



Type	Coating	Material	Hardness
APFEL	P - Plain	8620 Alloy Steel (JIS SNCM220)	Carburized 58 - 62HRC (Depth 0.5-0.7 after Grinding)
	T - TiN		
	R - Rainbow DLC		
M2APFEL	P - Plain	M2 Tool Steel (JIS SKH51)	Thru hardened 58-65 HRC (with drawn shank >35 HRC)
	R - Rainbow DLC		

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

3D CAD is available online.



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

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

Configurable NAAMS (E, F & A Configurable)								
Type	Coating	Tip Shape	E Flat (0.01 mm Inc.)	F Flat (0.01 mm Inc.)	A Lead Length (1 mm Inc.)	D Diameter	B Rad	C Rad
APFEL M2APFEL	P - Plain T - TiN (not available on M2 Pins) R - Rainbow DLC	A	19.00-25.00	19.00-25.00	15-100	D = E/F + 0.40	2.0	Tip A C = D x 2.0 (Ø≥19) Tip B C = D x 1.0 (Ø≥19) Tip C C = D x 0.5
		B						
		C						

Note: D Diameter is calculated on E or F Flat size (whichever is larger). When D≤20 there is no Flat.

Part Number Example

Configurable

Type	Coating	Tip Shape	E	F	A	Alteration (KE)
APFEL	P	B	E21.58	F20.8	A95	
APFEL	T	B	E19.05	F19.05	A12	KE
M2APFEL	R	B	E19.06	F19.05	A42	KE
M2APFEL	P	C	E21.58	F20.8	A63	

Part Number Alterations

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

