


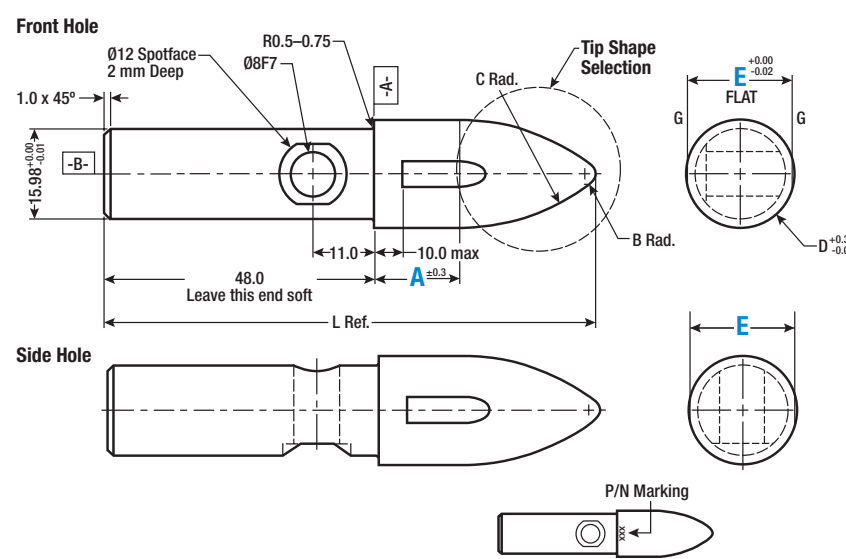
Respot Pins

ARE-R Large Head



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

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 | ∥ 0.03 T.I.R |
| 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 | |

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

| 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 | 16 (15.72) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | R - Front Hole S - Side Hole | None - Plain T - TiN | 16 x 22 | 16.35 | 2.0 | 48.0 |
| | 19 (18.72) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | 19 x 25 | 19.27 | | |
| | 25 (24.72) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | 25 x 31 | 25.17 | | |

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) ARES (Side Hole) | P - Plain T - TiN | A B C | 16 (15.72) 19 (18.72) 25 (24.72) | 10-100 | 16 x 22 19 x 25 25 x 31 | 16.35 19.27 25.17 | 2.0 | 48.0 38.0 50.0 | 24.0 19.0 25.0 | D/2 |

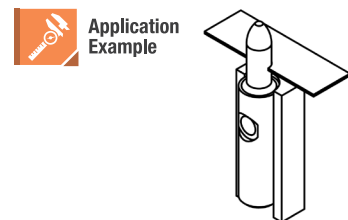
Part Number Example

Standard

| | | | | | | | | |
|-------------|---|----|---|---|---|-------------|---|---------|
| Part Number | - | D | - | A | - | Retractable | - | Coating |
| ARE | - | 19 | - | 4 | - | R | - | T |
| ARE | - | 16 | - | 9 | - | S | - | T |


Configurable

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



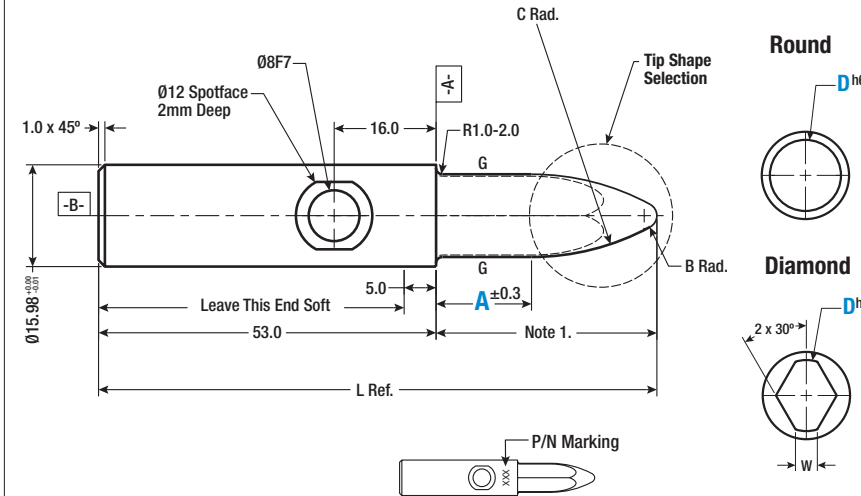
Locating Pins

ARFS Small Head



| Type | Retractable | Coating | Material | Hardness |
|-------|-------------|----------------------|--------------------------------|--|
| ARFS | Round | P - Plain T - TiN | 8620 Alloy Steel (JIS SNCM220) | Carburized 58-62 HRC min. (Depth 0.5-0.7 after Grinding) |
| ARFSD | 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 | ∥ 0.03 T.I.R |
| 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 | |

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

| 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 B C | 6.00-6.99 | +0.000 -0.009 | 5.0-55.0 | 1.0 | 2.0 | Tip A C = D x 3.0 (Ø≤16) Tip B C = D x 1.5 (Ø≤16) Tip C C = D x 0.5 |
| | | | 7.00-7.99 | | 5.0-75.0 | | | |
| | | | 8.00-8.99 | | 5.0-80.0 | | | |
| | | | 9.00-9.99 | | 5.0-100.0 | 3.0 | | |
| | | | 10.00-16.00 | | | +0.000 -0.011 | 4.0-5.0 | |

Note 1: Chatter may be present on flat surface.

Part Number Example

Configurable

| | | | | | | | | |
|-------------|---|---------|---|-----------|---|-------|---|-------|
| Part Number | - | Coating | - | Tip Shape | - | D | - | A |
| ARFSD | - | P | - | C | - | D8.55 | - | A42.1 |
| ARFS | - | T | - | A | - | D8.55 | - | A42.1 |

