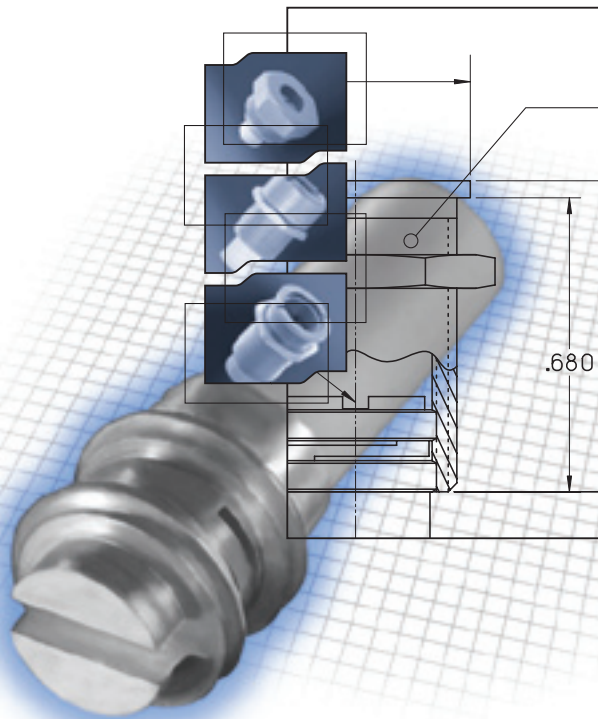


# TUNING ELEMENTS



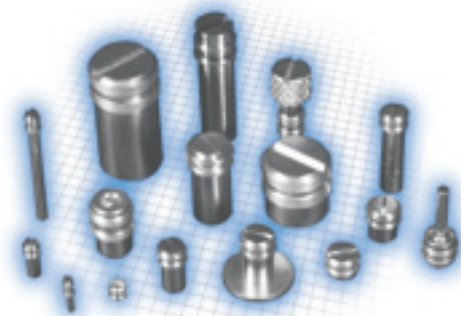
Microwave Tuning Elements are a very cost effective method for the precision tuning of microwave filters, oscillators, and other resonant structures. They are excellent for applications requiring precision, low loss tuning permitting costly mechanical and electrical tolerances to be relaxed. The self-locking design eliminates the need for locking nuts and assures stable, noise-free adjustments in applications from L to Ka band.

## FEATURES

- One handed adjusting/tuning
- Self-Locking/Constant torque mechanism
- Eliminates need for "jam" nuts
- Produced with fine-pitched threads for high resolution zero back lash positioning from 24 TPI to 108 TPI
- Basic thread diameters available from 0.060" to 1.00", SI & US customary threads
- Excellent electrical conduction (Contact resistance < 0.01  $\Omega$ )
- Capable of re-tuning/re-positioning
- Available with Gold, Silver, Nickel Plating and Chromate Finish
- Can be assembled with other materials, (Ceramic, Ferrites, Sapphire, Glass, etc.)
- Available as a set, to provide a positive stop or extended travel range
- Available in copper or ferrous alloys
- Custom torque designs available

## TYPICAL APPLICATIONS

- Micro Wave Filter Positioning
- Fiber Optic Alignment
- Metering Valve Adjustment
- X Y Z Stage Positioning
- Self Locking Fastener
- Limit Switch/Sensor Positioning

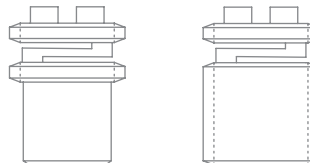


New Slotted Positioning Devices  
Patent Pending



Threaded Inserts

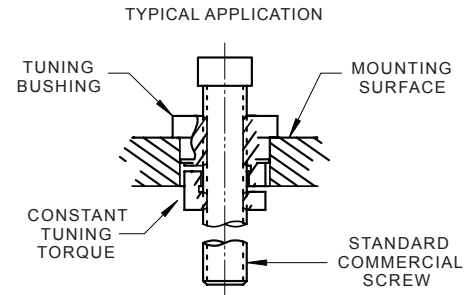
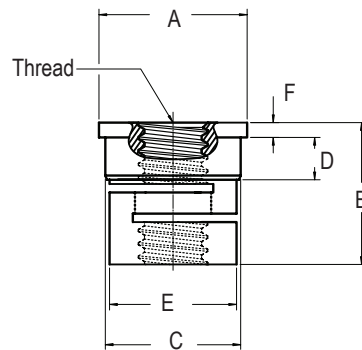
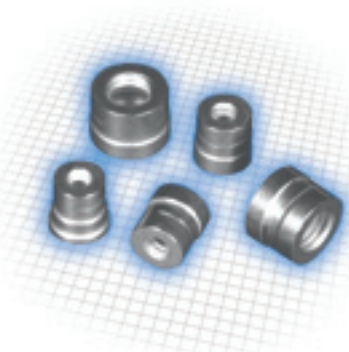
Original Slotted Positioning Devices  
Patented by Johanson  
Ref. Original US Patent No. 30,406



Threaded Elements

# POSI-TORQUE®

Posi-Torque Bushings are precision devices designed for applications requiring precision, low loss high resolution tuning. The self-locking, constant torque drive mechanism eliminates the need for locking nuts and assures stable, noise free adjustment in RF to Microwave frequencies. Posi-Torque Bushings are universal and can be used with standard SI and US customary screws.



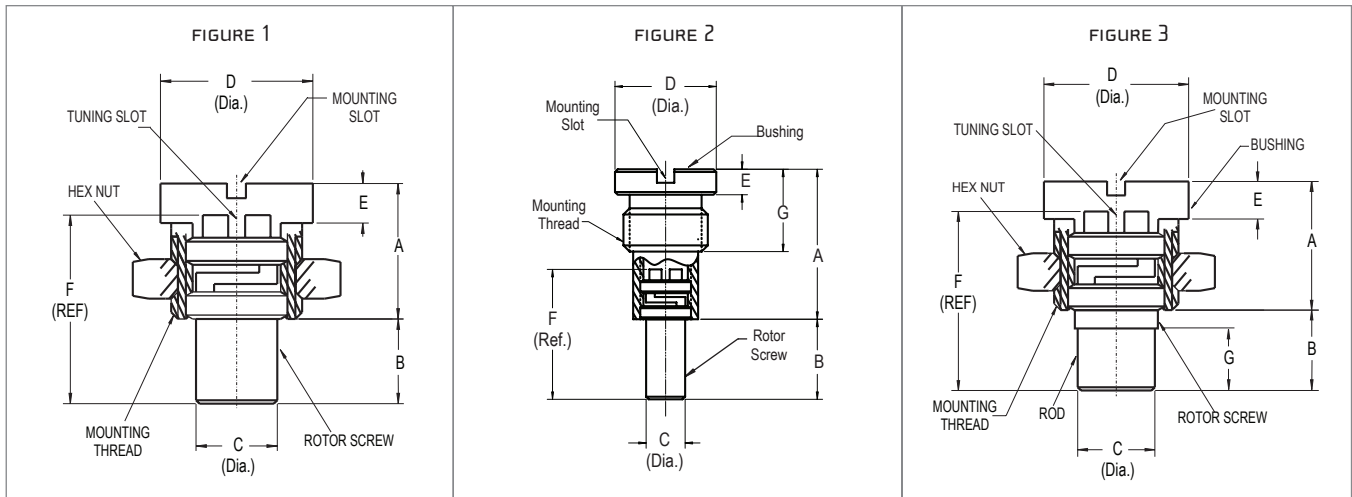
| P/N      | THREAD SIZE         | A    | B    | C     | D    | E    | F    |
|----------|---------------------|------|------|-------|------|------|------|
| LB1020-1 | #0(.060)-80 UNF-2B  | .145 | .130 | .1247 | .035 | .112 | .030 |
| LB1021-1 | #2(.086)-56 UNC-2B  | .175 | .150 | .1552 | .035 | .140 | .030 |
| LB1022-1 | #4(.112)-40 UNC-2B  | .300 | .300 | .2697 | .090 | .250 | .035 |
| LB1023-1 | #6(.138)-32 UNC-2B  | .330 | .335 | .2997 | .100 | .280 | .035 |
| LB1024-1 | #10(.190)-32 UNF-2B | .380 | .335 | .3497 | .100 | .330 | .035 |
| LB1025-1 | 1/4(.250)-28 UNF-2B | .440 | .335 | .4097 | .100 | .390 | .035 |
| LB1026-1 | #8(.164)-32 UNC-2B  | .350 | .335 | .3197 | .100 | .300 | .035 |

Custom design available upon request.

## TAPS

| P/N  | THREAD SIZE           | H# | # OF FLUTES (REF) | RECOMMENDED TAP DRILL |
|------|-----------------------|----|-------------------|-----------------------|
| 7053 | #0 (.060)-80 UNF-2    | H2 | 2                 | 3/64 (.0469)          |
| 7054 | #2 (.086)-56 UNC-2    |    | 2                 | #51 (.067)            |
| 7056 | 3/8 (.375)-64 UNS-2   |    | 4                 | 23/64 (.3594)         |
| 7057 | .200-80 UNS-2         | H3 | 4                 | 3/16 (.1875)          |
| 7059 | 5/32 (.156)-64 UNS-2  |    | 4                 | 9/64 (.1406)          |
| 7060 | .120-80 UNS-2         |    | 3                 | #36 (.1065)           |
| 7061 | #10 (.190)-64 UNS-2   |    | 4                 | #17 (.173)            |
| 7062 | 15/64 (.234)-64 UNS-2 |    | 4                 | 7/32 (.2187)          |
| 7063 | 1/4 (.250)-64 UNS-2   |    | 4                 | 15/64 (.2344)         |
| 7064 | 3/32 (.094)-80 UNS-2  |    | 3                 | #45 (.082)            |
| 7065 | 5/16 (.312)-64 UNS-2  |    | 4                 | 19/64 (.2969)         |

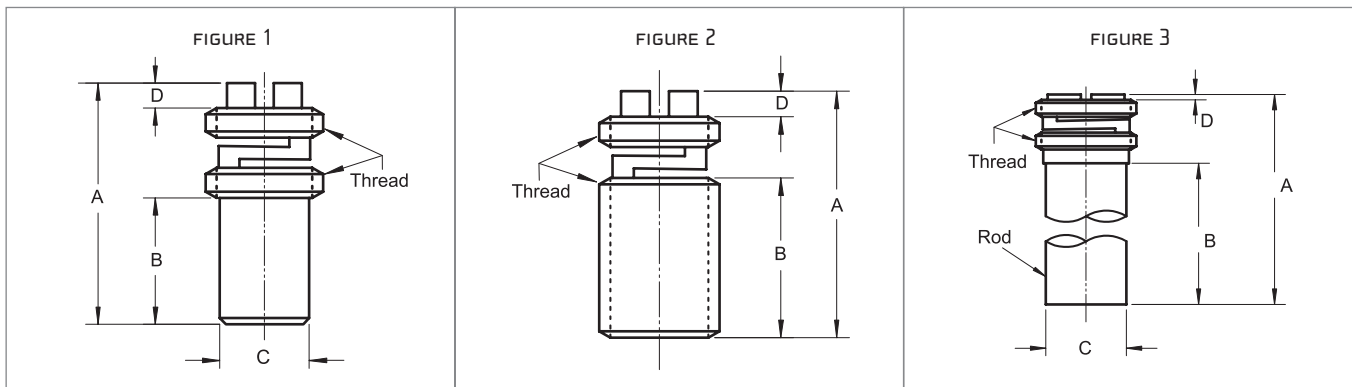
# TUNING ELEMENTS



| P/N     | FIG. | A     | B     | C    | D    | E    | F       | G       | THD (UNS-2A) | ROD MAT'L |
|---------|------|-------|-------|------|------|------|---------|---------|--------------|-----------|
| 6924-10 | 1    | .120  | .075  | .072 | .135 | .035 | .167    |         | .120-80      | BRASS     |
| 6924-11 |      | .120  |       |      |      |      |         |         |              |           |
| 6925-4  |      | .250  | .148  | .125 | .210 | .037 | .250    |         | .190-64      |           |
| 6925-5  |      | .125  | .023  |      |      |      |         |         |              |           |
| 6926-13 |      | .210  | .106  | .160 | .267 | .035 | .210    |         | .234-64      |           |
| 6926-17 |      |       | .180  |      |      |      |         |         |              |           |
| 6927-2  |      | .360  | .250  | .265 | .145 | .360 |         | .374    |              |           |
| 6927-3  |      |       | .255  |      |      |      |         |         |              |           |
| 6928-6  |      | .450  | .345  | .267 | .240 | .450 |         |         |              |           |
| 6929-2  |      | .552  | .450  | .125 | .210 | .042 | .552    |         | .190-64      |           |
| 6965-1  | .720 | .500  | .345  | .531 | .040 | .720 |         | .469-32 |              |           |
| 6939-2  | 2    | .482  | .148  | .072 | .187 | .045 | .240    | .230    | .156-64      |           |
| 6940-1  |      | .555  | .450  | .125 | .265 |      | .552    |         | .234-64      |           |
| 6941-1  |      | 1.230 | .350  | .160 | .280 |      | .450    |         | .250-64      |           |
| 6933-4  | 3    | .240  | .168  | .062 | .135 | .035 | .260    | .138    | .120-80      | SAPPHIRE  |
| 6934-4  |      | .359  | 1.105 | .152 | .267 | .144 | 1.209   | 1.075   | .234-64      | ALUMINA   |
| 6934-6  |      | .210  | .115  |      |      | .035 | .219    | .085    |              | SAPPHIRE  |
| 6935-11 |      | .359  | .265  | .144 | .369 | .235 | ALUMINA |         |              |           |
| 6950-2  |      | .240  | .168  | .062 | .135 | .035 | .260    | .138    | .120-80      | ECCOSORB  |
| 6952-2  |      | .359  | .185  | .152 | .267 | .144 | .289    | .155    | .234-64      |           |

Custom dimensions are available upon request. Please contact the factory.

# TUNING ROTORS



| P/N      | FIG. | A    | B    | C    | D       | THD<br>(UNS-2A) | TAP      | ROD<br>MAT'L |      |
|----------|------|------|------|------|---------|-----------------|----------|--------------|------|
| 6316-1   | 1    | .165 | .075 | .072 | .018    | .120-80         | 7060     |              |      |
| 6316-2   | 2    | .223 | .155 | —    | .020    |                 |          |              | 7054 |
| L6994-2  |      | .175 | .090 | —    |         |                 |          |              |      |
| L6995-0  | 1    | .122 | .030 | .072 | .010    | 7064            |          |              |      |
| L6995-1  |      | .167 | .075 |      |         |                 |          |              |      |
| L6996-1  |      | .250 | .148 | .125 |         |                 | .156-64  |              | 7059 |
| L6996-5  | .295 | .193 |      |      |         |                 |          |              |      |
| L6997-0  | 1    | .554 | .450 | .160 | .190-64 | 7061            |          |              |      |
| L6997-17 |      | .146 | .042 |      |         |                 |          |              |      |
| 6930-10  | 3    | .369 | .235 | .152 |         |                 | SAPPHIRE |              |      |
| 6930-14  |      |      |      |      |         |                 | ALUMINA  |              |      |

Custom dimensions are available upon request. Please contact the factory.

# DYNA-TRIM – DRO TUNERS

| P/N    | A    | ROD<br>MAT'L    | DISK<br>MAT'L | NOM FREQ<br>(GHZ) |
|--------|------|-----------------|---------------|-------------------|
| 4010-1 | .970 | INVAR           | BRASS         | 2                 |
| 4011-1 | .750 |                 |               | 3                 |
| 4012-1 | .500 |                 |               | 4                 |
| 4012-2 | .625 |                 |               | 4                 |
| 4014-1 | .250 | INVAR [1 PIECE] |               | 9                 |

Custom dimensions are available upon request. Please contact the factory.

