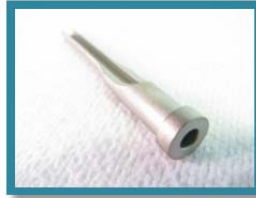
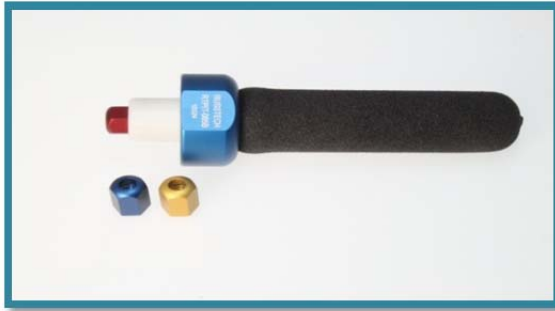


# RTPIT - RUSSTECH POSITIVE INSERTION TOOL

RUSSTECH ENGINEERING CO., INC. – 16 Technology Drive, Suite 111, Irvine, CA 92618 USA  
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BOEING STANDARD INSERTION TIPS

## **INTRODUCTION**

RUSSTECH introduces a true revolution to the process of inserting contacts. We have incorporated our patented mechanism that “trips” when the contact is fully seated. The tool uses an ergonomic insertion handle with interchangeable tips to suit most applications.

## **DESCRIPTION**

These ergonomic positive insertion tools can be matched with most Boeing standard contact insertion tips (as shown) for contact insertion and retention testing at the same time. The tools come from the factory pre-set to your requested release force (in lbs.). The tools are used with one hand, have a comfortable foam handle and are very simple to operate. Included with the tool is a hardware pack that includes three color coded hex caps (for quick installation tip identification) and lock-washers (used when installing the insertion tips).

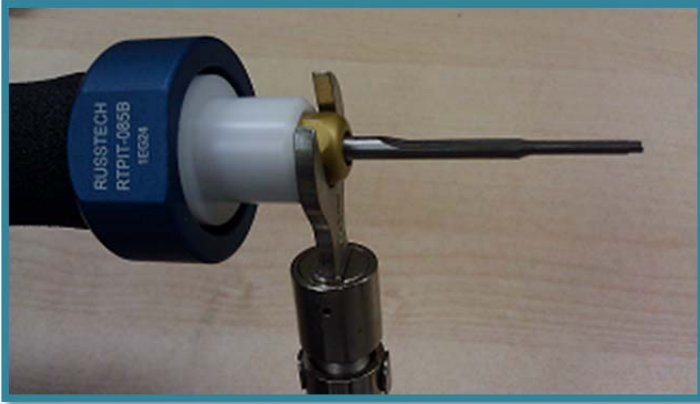


## **TESTING AND CALIBRATION OF THE RTPIT TOOL**

1. Setup the RUSSTECH **RTFTS-50** Test Stand with RTPIT testing tip or equivalent testing device and configuration. Place RTPIT tool to be tested into holding fixture (as shown above).  
*NOTE: To prevent possible damage to the insertion tips, it is good practice to remove any insertion tips from the RTPIT tools prior to Calibration testing, and then reinstall them after calibration is complete (ref. insertion tip installation procedure below).*
2. Prepare RTPIT tool for test/calibration by aligning testing tip attached to force gage with axial center of tool shaft.  
***IMPORTANT: \*Wear eye protection!***
3. **CYCLING TOOL PRIOR TO TEST:** Pull down on test handle until test tip rests on top of tool shaft and slowly pull handle until tool releases. Tool should cycle smoothly (no binding or rough feel while cycling tool – spring tension is normal during operation of these tools). Repeat 5 times.
4. **PERFORMING TEST/CALIBRATION:** Zero the force gage. Pull down on test handle until test tip rests on top of tool shaft and come to a complete stop. Slowly (fluid and consistent arm motion) continue to pull down on handle until tool releases (do not bottom tool out, damage to the test tip may occur). Take note of the measurement displayed on the force gage and then zero the force gage again. Repeat this step (#4) three times to verify that tool is performing properly and is meeting release force requirements.
5. Any tools not meeting release force requirements shall be re-tested/calibrated. Tools shall be cycled ten times (as described in Step #3) and re-tested/calibrated (as described in step #4). If the tool still fails to meet release force requirements, it will need to be returned to RUSSTECH for evaluation and possible repair/recertification.  
*NOTE: RUSSTECH recommends that the RTPIT tools be placed on a 90 day calibration cycle at minimum, or a calibration cycle that is consistent with the each individual tool's usage.*

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## **INSERTION TIP INSTALLATION PROCEDURE**

1. Select RTPIT tool that will be used, along with the proper cap (color coded) and insertion tip combination that will be installed onto tool.
2. Hold Cap in one hand upside down (threaded end facing up)
3. Slide insertion tip through the cap and place lock-washer (supplied with caps) onto back of insertion tip in cap. Lock-washer should lay flat on back of insertion tip.
4. Grasp RTPIT tool with other hand and begin to thread tool onto cap/insertion tip assembly.
5. Tighten cap/insertion tip assembly onto RTPIT tool by hand.
6. A hand held torque wrench with a break force of no more than 10-12 inch lbs., should be used to install the cap/tip assembly onto the RTPIT tools.

**NOTE:** It is highly recommended that a small bead of sealant (such as Dow 3145 RTV grey) be placed between the insertion tip and hex cap after installing the tip onto the tool, then allowed to fully dry prior to tool use.

**NOTE:** Although not required, it is highly recommended that the insertion tips remain with the calibrated RTPIT tools they were originally installed onto and not switched between different RTPIT tools.

## **HOW TO USE THE RTPIT TOOL**

1. Locate the cavity to be filled.
2. Place contact assembly into the insertion tip.
3. From the rear of the connector, axially align the RTPIT tool and the contact assembly.
4. Carefully push the RTPIT tool into the contact cavity until the tool “trips” or releases. This indicates that the contact has been fully inserted.
5. Carefully pull the RTPIT tool straight out from the contact cavity.
6. Verify contact retention.

**CAUTION:** Do not tip or rotate the tool while the insertion tip is in the connector!