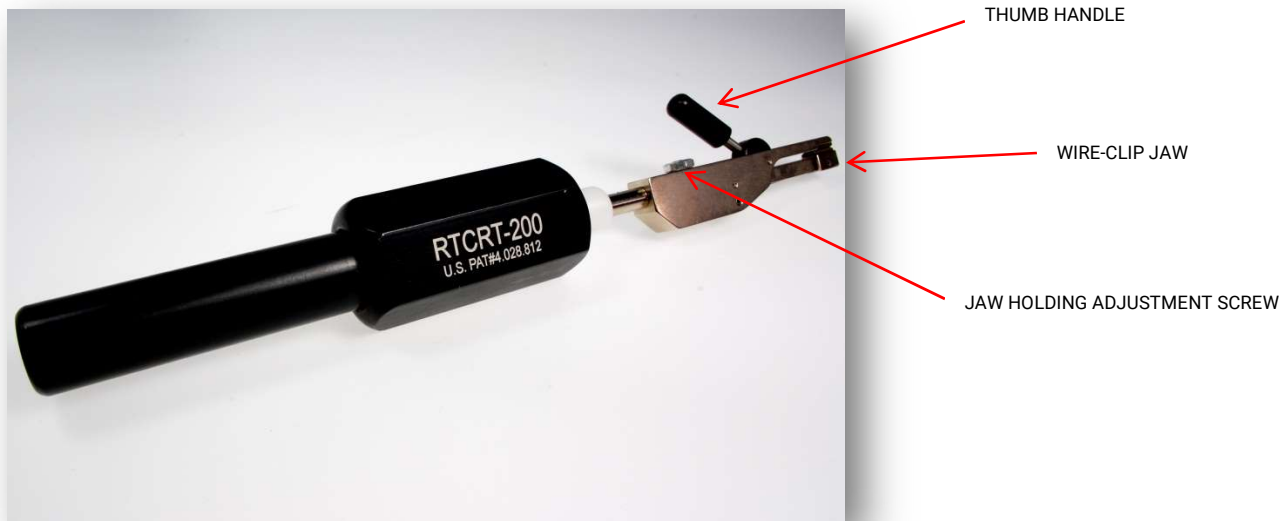


## RTCRT-100, -200 and -300 Module Block Retention Test Tool

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### **INTRODUCTION**

The RUSSTECH Module Block Retention Test Tool (RTCRT-100, -200 and -300) is specifically designed to check contact retention of rear release contacts in module block receptacles. In the interconnection environment, often it is required to operate within tight space or access constraints. The RTCRT-100, -200 and -300 have proven to be very useful in these conditions. This tool has many varied uses and may be applicable where other methods of retention test have been unsuccessful.

### **DESCRIPTION**

These ergonomic module block retention test tools have a slim, compact design and come from the factory pre-set at a specific release force pressure, or to your requested custom release force. The tools are held with one hand, have a comfortable hex handle with extension and are simple to operate. The tools have an adjustable jaw to fit a wide range of wire and insulation sizes and feature a "Tactile-Release" mechanism that ensures safe use every time.

### **ORDERING INFORMATION**

RTCRT-100 (3.0 – 5.0 lbs.)  
RTCRT-100-1.0 (.75 – 1.25 lbs.)  
RTCRT-100-3.0 (2.5 – 3.5 lbs.)  
RTCRT-200 (5.0 – 7.0 lbs.)  
RTCRT-300-3.0 (2.5 – 3.5 lbs.)

\*Additional custom pressure settings are available. Contact RUSSTECH ENGINEERING for information.

### **PRIOR TO RETENTION TEST**

**IMPORTANT:** "Set" the wire-clip jaw holding pressure using the jaw holding adjustment screw on a sample piece of insulated wire that you are using, before testing the production wire/contact assembly. The wire-clip jaws should grip tight without slipping during the test cycles, but not so tight that deep impressions in the wire insulation are visible.

**NOTE:** To adjust the wire-clip jaw holding pressure, use the jaw holding adjustment screw (located behind the thumb handle). Slightly turning the screw "clockwise" will increase the holding pressure. Turning the screw "counter-clockwise" will decrease the holding pressure.

### **NEW DESIGN UPDATES (tools sold AFTER 1/20/2018)**

Three key improvements have been made to the RTCRT-XXXE series tools.

-Reduced length of holding jaw body and increased outer radii: To reduce tool mass and provide smoother tool surfaces when tool is used in tighter workspaces. (**NOTE:** Tool details shown from RTCRT Model E type tool and are for reference only).



-Addition of Jaw pressure locking set screw (Pre-Set at factory): To increase precision and repeatability of the Insulation Holding Jaw holding pressure.



-Updated gripper pad materials: To allow for more consistent grip during testing and to help eliminate any superficial scuffing of outer wire insulation.



\*Legacy RTCRT-XXXE series tools (sold BEFORE 1/20/2018) will not have the above listed features.

## **PRIOR TO RETENTION TEST**

**QUICK TIP:** Use a sample piece of insulated wire before testing on the production wire/contact assemblies. The Insulation Holding Jaws should grip tight without slipping during the test cycles, but not so tight that deep impressions in the wire insulation are visible.

**IMPORTANT:** The insulation holding jaw pressure comes pre-set from the factory and should not need to be adjusted. If required, "Set" Insulation Holding Jaw pressure by using the **adjustment set screw** (shown in Fig. 1) and following the adjustment instructions below.

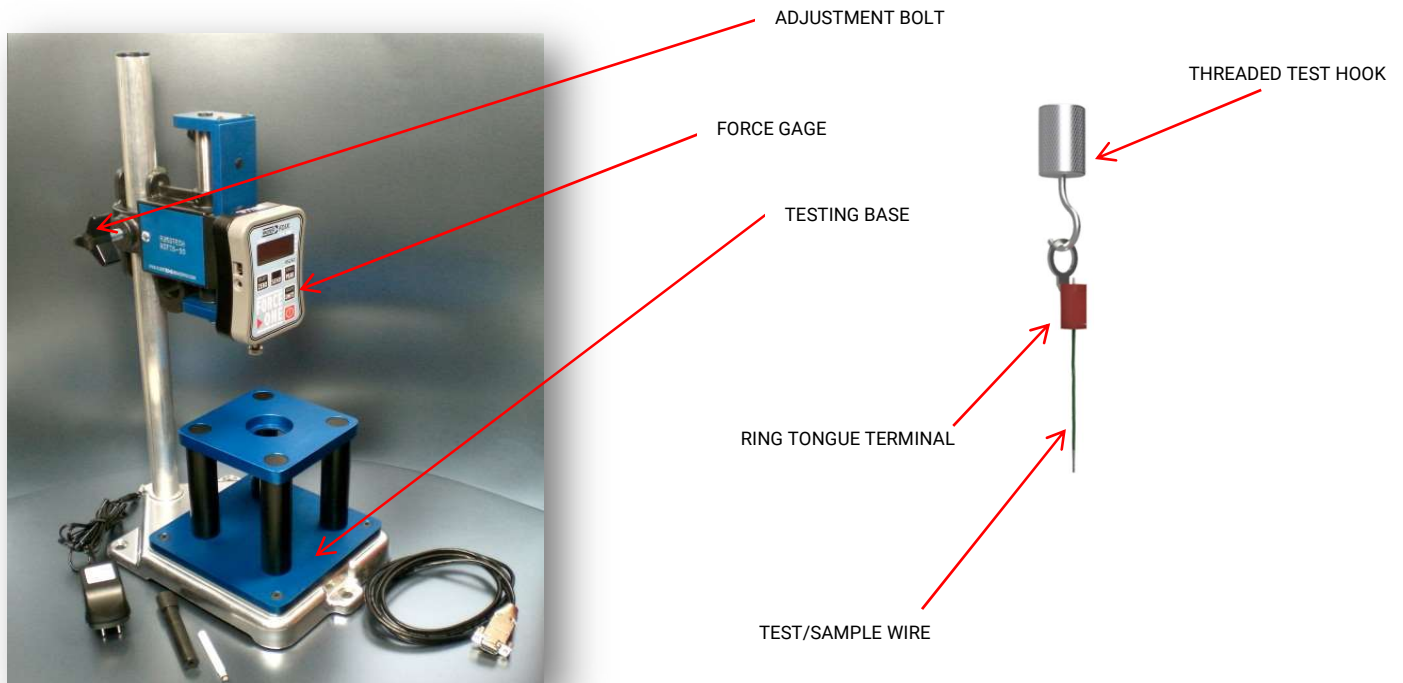
**ADJUSTMENT:** Begin by loosening the retaining hex nut (shown in Fig. 1), then adjust the holding pressure using a 1/16" allen key by slightly turning the adjustment set screw (Clockwise = Increase pressure) or (Counter-Clockwise = Decrease pressure). Once the desired holding pressure is reached, simply re-tighten the retaining hex nut.

**NOTE:** The lower "locking" set screw (shown in Fig. 1) is set from the factory and should NOT need to be used to adjust the Insulation Holding Jaw pressure.

**HOW TO USE THE RTCRT “MODULE BLOCK” RETENTION TEST TOOL**

**NOTE:** RUSSTECH recommends that the RTCRT module block test tool release force be verified prior to retention testing. Instructions on how to test the release force and how to perform calibration can be found on the following page.

1. Locate the wire/contact assembly to be tested.
2. Open the wire-clip jaws by depressing the thumb handle on the jaws, feed the wire into the wire-clip jaw and release the thumb handle.
3. While holding the tool in alignment with connector, slowly pull on the tool until the “tactile” release is felt.
  - 3a. This “tactile-release” indicates that the \*pre-set pressure has been reached.
  - 3b. Faulty contact retention will not allow the \*pre-set pressure to be reached prior to contact disengaging from the connector.



**(SHOWN) RTFTS-50 Test Stand**

## **TESTING AND CALIBRATION OF THE RTCRT MODULE BLOCK RETENTION TEST TOOL**

1. Setup the RUSSTECH **RTFTS-50** Test Stand with a test hook (threaded onto the force gage) or equivalent testing device and configuration with a "PEAK" feature.
2. Secure the testing base to the edge of a workbench or sturdy, flat table using a large 'C'-clamp or other similar holding fixture.
3. Loosen the adjustment bolt and rotate the top half of the test stand (w/ force gage attached) 90 degrees, so that the force gage is hanging over the edge of the workbench or table. This will provide clearance for the tool during testing.  
*NOTE: RUSSTECH recommends that a test/sample wire assembly (as shown above) be used for Testing/Calibration of the RTCRT module block test tool.*
4. Place the Test/Sample Wire (wire with a ring tongue terminal crimped on one end – as shown above) onto the test hook attached to the force gage by placing the ring tongue terminal onto the test hook.
5. Prepare RTCRT module block test tool for test/calibration by opening the wire-clip jaws and feeding the test/sample wire into the jaws then releasing the thumb handle. Let the tool hang freely (*be sure to keep hand below tool to prevent the tool from falling*).
6. **CYCLING TOOL PRIOR TO TEST:** Slowly pull down on the RTCRT module block test tool until the "tactile-release" is felt then let the tool return back to the test position. Tool should cycle smoothly (no binding or rough feel while cycling tool). Repeat the tool cycle three times.
7. **PERFORMING TEST/CALIBRATION:** Let the tool hang freely. Zero the force gage. Slowly pull down on the RTCRT module block test tool until the "tactile-release" is felt, then let the tool return back to the test position. Press the "PEAK" feature button on the force gage (the force displayed is the tool's release force). Take note of the reading on the force gage. Repeat this step (#7) three times to verify that tool is performing properly and is meeting release force requirements.
8. Any tools not meeting release force requirements shall be re-tested/calibrated.
9. Any tools not passing calibration will need to be returned to RUSSTECH ENGINEERING for repair/refurbishment.  
**NOTE:** RUSSTECH recommends that the RTCRT tools be placed on a 90 day calibration cycle at minimum, or a calibration cycle that is consistent with each individual tool's usage.