

Model TR-7-1000-QC Pneumatic Fixture System

Product Features

- Quick-Change Fixture Kits
- 1000 Test-Point Capability
- Easy, Low-Cost Customizing
- Top and Side UUT Access

Applications

- **Most Common Circuit Assemblies**
- **Through-hole and SMT Devices**
- **Hard-to-Gasket Assemblies**
- **Individual or Panelized PCBs**

The CheckSum Model TR-7-1000-QC Pneumatic Bed-of-Nails Fixture System is designed for general-purpose test fixturing of most common circuit assemblies up to 14.5" x 16".

The TR-7-1000-QC is powered by a standard compressed shop-air source. Since it uses a vertical travel of 0.50", the Model TR-7 provides safe, fast operation, but has adequate travel for compressing probes on both sides of the UUT. The TR-7-1000-QC provides access for top probing since a top-plate is already present.

The TR-7-1000-QC offers low recurring costs of fixturing since fixture kits are low-cost and customization is inexpensive. Fixtures also have a long service life.

The TR-7-1000-QC fixture kits are compatible with the CheckSum Model TR-9-1000-QC long-travel pneumatic fixture system should you decide to share fixtures between systems or change systems in the future.

Customizing the Fixture

The Model TR-7-1000-QC Fixture Press is used in conjunction with low-cost fixture kits that are customized for each UUT. CheckSum can customize the fixture for your UUT or it can be done by a local fixture contractor or in-house if the necessary drilling and wiring equipment is available.

Fixture Kit customization involves drilling, installation of spring probes and receptacles, installation of guide pins, wire-wrapping the probe receptacles to the fixture wiring blocks, and installation of pressure rods into the top plate. For top-access to the UUT, the top plate can be drilled or machined to allow use of screwdrivers or adjustment tools.



Model TR-7-1000-QC in UUT Loading Position

To change the type of assembly being tested on the TR-7-1000-QC, simply unlatch the top plate by moving it towards you. To remove the fixture base, pull the release lever, then the base simply slides out of the fixture press. Installing the new fixture kit is a matter of clicking the top plate and fixture base into place. Change-over takes a matter of seconds, with no cables to change or tools required.

**FIXTURE
SYSTEMS**



Quick Interchange of Customized Fixtures

Model TR-7-1000-QC Pneumatic Fixture System

Testing

To operate the fixture, the operator places the UUT onto guide pins in the fixture, then closes the lid. Once the lid is closed, the fixture is actuated by computer control (or manual control) to press the UUT onto the spring probes. A sensor prevents pressure from being applied before the cover lid is closed. At the end of the test, pressure is removed; the operator opens the lid, and the UUT is removed. Typical combined load/unload time, including application of pressure, is under ten seconds per UUT.

TR-7-1000-QC Configuration

The Model TR-7-1000-QC Fixture Press includes the press, power cord, remote control cable, ground wire, and instruction manual. For each 200-points that you will be using for testing, add one FIX-200P-RB Receiver Block/Cable. Also, add additional FIX-200P-RB Receiver Blocks if you will be performing functional test, SMT test, digital test, or have a power-module installed in your system. Up to four 50-pin ribbon cables can be connected into each Receiver Block.

If your UUTs contain dense concentrations of probes, you may need the FIX-SUPR-T top support stiffener kit to reduce top pressure plate flexing.

When building a customized test head, order:

1. A Model KIT1000-QC Fixture Kit which includes a probe plate and pan assembly, clear polycarbonate pressure plate, and ten pressure rods.
2. For each 200 points wired for the UUT, order one Model FIX-200P-WB 200-point fixture wiring block. One side of each block includes wire-wrap posts, while the other side includes targets for mating to the spring-probe interface in the fixture press.
3. For each 15-25 probes, order a Model P-ROD pressure rod. Ten are included with each kit to accommodate UUTs of up to about 200 points.

Ordering Information

Model	Description
TR-7-1000-QC	Fixture Press
FIX-200P-RB	200-Point Receiver Block/Cable
FIX-SUPRT-T	Top Support Stiffener Kit
KIT1000-QC	Fixture Kit for TR-7-1000-QC
FIX-200P-WB	200-Point Wiring Block
P-ROD	Pneumatic, Pressure Rod, 3.325"
P-ROD-T	Pneumatic, Tapered Pressure Rod
FIX-SUPRT-BP	Fixture bottom support post

TR-7-1000-QC Specifications

Fixture Press

Overall Size	24"W x 24"D x 16"H (28" high with the top lid open).
Air Requirements	50-120 PSI with 40 micron filtering. 80 PSI required for full probe loading. 0.25 CFM maximum operating flow rate.
Air Connection	Standard quick-disconnect (or 1/4" female NPT).
Power	115/230V, 50/60 Hz, .25A maximum
Connections	<ul style="list-style-type: none"> • RCA jack for digital control. • Banana jack for use with probe and/or wrist strap. • 50-Pin Male Ribbon Cable Connectors (4 per FIX-200P-RB).
Digital Control Input	TTL low to actuate. The press has an internal 10 Kohm pull-up.
Fixture Control	Three-position switch for up, down, or (digital) remote control.
Safety Interlock	Actuation is only allowed when the top lid is down and the handle is locked.
Fixture Travel	0.50"
Weight (Press)	Approximately 120 lbs. (shipping wt. is approximately 135 lbs.)
Warranty	90-day parts and labor limited warranty

Fixture Kits

Probe Area	14.5"D x 16"W
UUT Height	3.325" (UUT PCB to top pressure plate)
Closed Height	3.70" (probe plate to top pressure plate)
Inside Depth	2.92" (inside the bottom of fixture kit)
Probe Plate	0.375" G-10 (FR-4) material
Top Plate	0.50" clear polycarbonate
Probe Count	Up to 1000
Weight (Kit)	Approximately 25 lbs. (shipping wt. is approximately 30 lbs.)