Solderless Breadboards and Accessories

3M *Innovation*

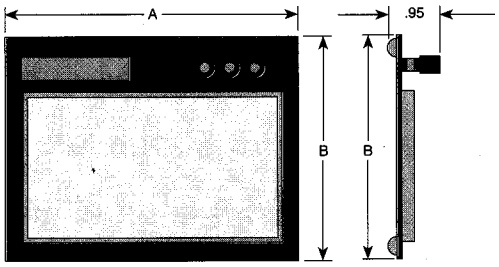
Solderless Breadboards

3M Series 300 Breadboards incorporate state-of-the-art techniques in design and fabrication to yield a circuit-building system with unparalleled flexibility and reliability.

A voltage distribution system is integrated with the basic component breadboarding matrix, and 5-way binding posts provide the interface for connections from the power supply, signal generators or other external equipment.

All models incorporate the 3M laboratory-proven multi-tie-point terminal design for convenient, solderless, plug-in circuit building. Each terminal position contains electrically connected tie-points spaced on a continuous .100" matrix to accept any component with .100" lead spacing as well as components whose leads can be dressed to fit.

The surface of the steel base is high gloss baked enamel for protection. Rubber feet prevent sliding during benchwork.

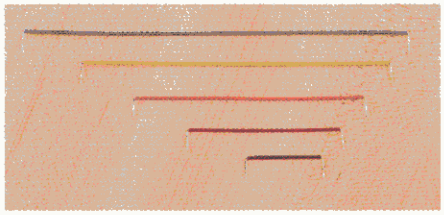


- Simply plug in components and interconnect with ordinary 22-gauge solid wire. Time consuming soldering is eliminated and all components can be used again and again.
- Alpha-numeric identification along the strips allows for fast and easy layout designs and project applications. Every tie-point position on the strip can quickly be identified by a letter and number combination.
- 3M jumper wires are included.
- The sturdy metal base plate serves as a ground plane to help minimize noise and voltage spikes in today's high-speed circuits.
- DIPs of all sizes and a wide variety of discrete components with lead diameters of up to .032" can be used.
- By jumping across the center area, full length distribution buses can be created vertically.
- Use the 5-way binding posts for easy connection to ground, power supply, or other external equipment.

Model	Part Number	Dip Capacity Up To	Base Dimensions A	Base Dimensions B	Total Tie Points	Total Tie Points Terminal	Vertical Distribution Buses	Horizontal Distribution Buses	Binding Post
306	922306	6-14 Pin	5.4" [137.16]	4.0" [101.6]	610	94	0	4	2
309	922309	9-14 Pin	7.0" [177.8]	4.0" [101.6]	840	128	0	8	3
318	922318	18-14 Pin	7.75" [196.85]	6.25" [158.75]	1824	256	4	16	3
327	922327	27-14 Pin	8.0" [203.2]	9.25" [234.95]	2712	384	24	4	4
336	922336	36-14 Pin	10.25" [260.35]	9.25" [234.95]	3648	512	32	4	4
345	922345	45-14 Pin	12.44" [315.976]	9.75" [247.65]	4520	640	40	4	4
354	922354	54-14 Pin	14.69" [373.126]	9.75" [247.65]	5424	768	48	8	4

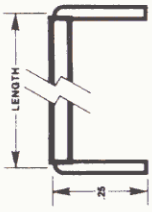
Breadboard Accessories

3M has all the accessories you'll need for fast, safe and easy circuit building. You'll speed circuit building with our pre-measured, pre-formed, color coded jumper wires in a wide variety of sizes. Our patch cords provide the extra reach and convenience you need when connections are changed frequently or when off-board or test clip / breadboard connections are required. And our plunger activated probes make test connections to individual component leads faster and easier, while minimizing the possibility of accidental shorts. Everything you need, in the quantities you require.



Jumper Wires

- Pre-measured, pre-formed, color coded jumper wires
- Wires are #22 AWG solid, tinned copper, PVC insulated, stripped 1/4" and bent 90° on both ends for easy insertion
- Available in 14 different lengths
- Jumper Wire Kits contain an assortment of 350 jumper wires
- Individual packages are sold in 0.1" increments from 0.1" to 1.0" and in 1.0" increments from 1.0" to 5.0" (exclusive of 1/4" ends)



Part Number	Qty/Pkg	Length(in.)	Color
923345-01	200	0.1	No Insulation
923345-02	200	0.2	Red
923345-03	200	0.3	Orange
923345-04	200	0.4	Yellow
923345-05	200	0.5	Green
923345-06	150	0.6	Blue
923345-07	150	0.7	Violet
923345-08	150	0.8	Gray
923345-09	150	0.9	White
923345-10	100	1.0	Brown
923345-20	100	2.0	Red
923345-30	75	3.0	Orange
923345-40	75	4.0	Yellow
923345-50	75	5.0	Green

Patch Cords

- Provide the flexibility to frequently change connections
- Ideal for off-board connections or breadboard / test clip connections
- Wires are #26 AWG stranded with PVC insulation, color coded by length
- Available with pin and socket contacts, solder plated or plunger activated probes
- Pin and socket contacts have a sleeve insulation and are stackable on 0.1" centers

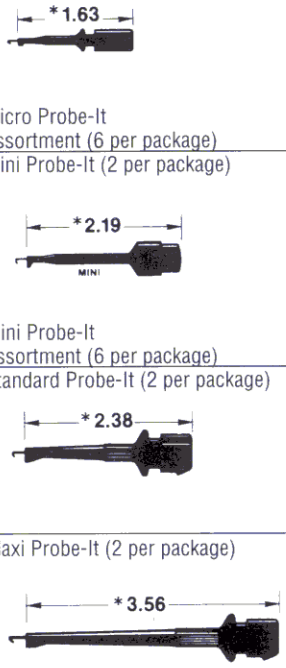
Description	Part Number	Qty/ Pkg	Color/Length Assortment	Pin/Socket Size	Recommended Applications
Pin Plug to Pin Plug	924961	20	Assort. A	.019	IC Sockets
	924962	20	Assort. A	.030	3M Breadboards
Socket to Socket	924963	20	Assort. A	.019/0.28	Extension for .019 Pin Plug
	924964	20	Assort. A	.028/.035	TC to TC. TC to .025 sq. post
Pin Plug to Socket	924965	20	Assort. A	.019 (.019/0.28)	IC Socket to .019 Pin Plug
	924966	20	Assort. A	.030 (.028/.035)	3M Breadboards to TC, .025sq. post
Pin Plug to Probe	924967	10	Assort. B	.019	IC Socket to TC, .025 sq. post, etc.
	924968	10	Assort. B	.030	3M Breadboard to TC, .025 sq. post, etc.
Socket to Probe	924969	10	Assort. B	.019/0.28	.019 Pin Plug to TC, .025 sq. post, etc.
	924970	10	Assort. B	.028/.035	TC, .025 post to TC .025 post, etc.

Assortment A (20 pieces): 9 pieces - 2" - Yellow, 6 pieces - 4" - Blue, 3 pieces - 6" - Red, 2 pieces - 9" - Black
Assortment B (10 pieces): 5 pieces - 15" - Red, 5 pieces - 15" - Black

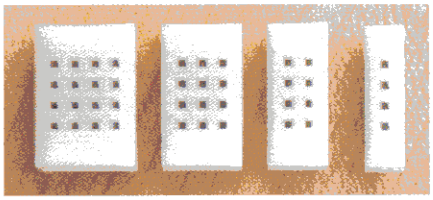
Probes

- Provide a safe, fast and easy method of testing individual component leads
- Minimize the possibility of accidental shorts
- Phosphor-bronze contact hooks are sheathed in the nylon body of the probe until exposure is needed
- Probes are easily attached to component leads being tested. Expose contact hooks by pressing the cap of the probe. Place on component lead. Release for a safe and secure attachment
- Are available in 4 different sizes – from 1.63" to 3.56"
- Can be soldered to stranded hook-up wire

Description	Color	Part Number
Micro Probe-It (2 per package)	Red	923830-RD
	Black	923830-BK
	Blue	923830-BU
	Green	923830-GN
	Yellow	923830-YL
	White	923830-WT
Micro Probe-It Assortment (6 per package)	One of Each	923848
Mini Probe-It (2 per package)	Red	923835-RD
	Black	923835-BK
	Blue	923835-BU
	Green	923835-GN
	Yellow	923835-YL
	White	923835-WT
Mini Probe-It Assortment (6 per package)	One of Each	923850
Standard Probe-It (2 per package)	Red	923840-RD
	Black	923840-BK
Maxi Probe-It (2 per package)	Red	923845-RD
	Black	923845-BK



* Dimensions with hook contact retracted



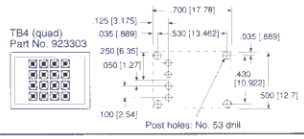
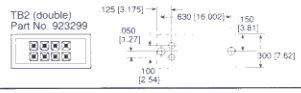
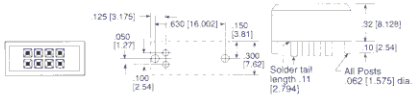
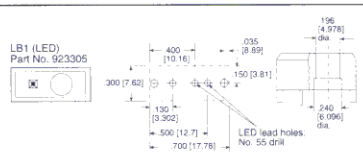
Tie-Point Blocks

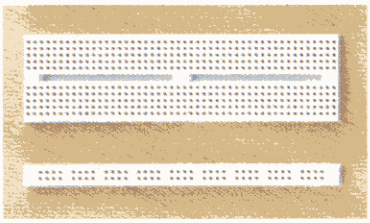
- Ideal for connections to power, ground, clock lines and status monitors, etc.
- Can be used to mount switches, indicators, relays, LED displays and more
- Each group of 4 tie-points has a solder tail for connection to the circuit
- Mounting posts on the plastic body press fit into holes in the PC Board
- The LED-mount version has a single tie-point and solder tail for plug-in connection to LED (LED not included)
- The 0.1" matrix will accept any lead up to 0.32"; #22 AWG solid wire is recommended for connections

Specifications

Model	Part No.	One Pkg.
TB1 (Single)*	923297	20 pcs
TB1 (Double)	923428	20 pcs
TB2 (Double)*	923299	20 pcs
TB1 (Triple)*	923301	20 pcs
TB1 (Quad)*	923303	20 pcs
TB1 (LED Mount)*	923305	20 pcs
TBA**	923306	20 pcs

** 4 of each of the * models listed above

Dimensions	Part Number
	**923303** TB4 (quad)
	923301 TB3 (triple)
	**923299** TB2 (double)
	923297 TB1 (single)
	**923428-B** TB1 (double)
	**923305** LB1 (LED) LB1 lbocks are designed to accept (press fit) any standard LED indicator with max. bulb diameter of 3/16". Flange may vary from .210" to .230".



Solderless Circuit Building Breadboard Strips

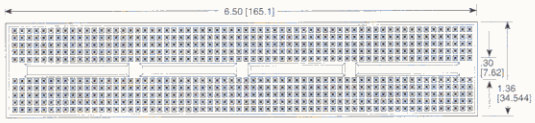
Terminal Strip, Distribution Strip, Super Strip and Circuit Strip building blocks provide unlimited freedom in the layout and implementation of custom breadboarding systems.

DIP's and all components with lead diameters up to .032" simply plug into the strips and interconnect with 3M color-coded, pre-measured, pre-formed #22 AWG jumper wires.

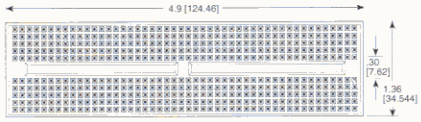
Terminal Strips have spring clips arranged side-by-side. Distribution Strips have spring clips arranged end-to-end. Super Strip and the smaller Circuit Strip breadboarding unit combine Terminal and Distribution building blocks in a single unit, using the plug-in ease of the 0.1" x 0.1" solderless tie-point matrix combined with the convenience of separate distribution buses for power, ground and signal lines.

Terminal Strips

923261 Full Terminal Strip 128 5 tie-point terminals (2 rows of 64)

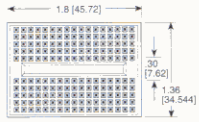


923265 3/4 Terminal Strip 96 5 tie-point terminals (2 rows of 48)

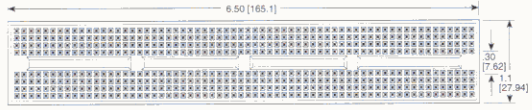


923269 Half Terminal Strip 68 5 tie-point terminals (2 rows of 34)

923273 1/4 Terminal Strip 34 5 tie-point terminals (2 rows of 17)



923289 Full Terminal Strip (4 pos.) 128 4 tie-point terminals (2 rows of 64)



923291 Single Terminal Strip 54 4 tie-point terminals (1 row)

923292 Single Terminal Strip same as above but with solder-tail terminals

Distribution Strips

923277 Full Distribution Strip 2 rows of 12 connected 4 tie-point ternimals

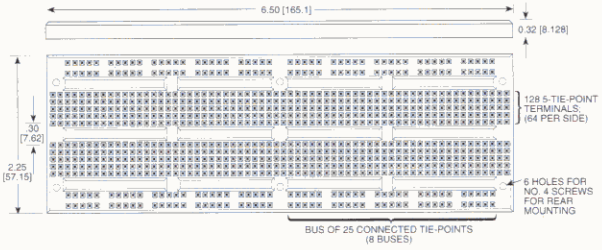
923281 3/4 Distribution Strip 2 rows of 9 connected 4 tie-point ternimals

923285 Half Distribution Strip 2 rows of 6 connected 4 tie-point ternimals

923293 3-row Distribution Strip 6 rows of 6 connected 4 tie-point terminals

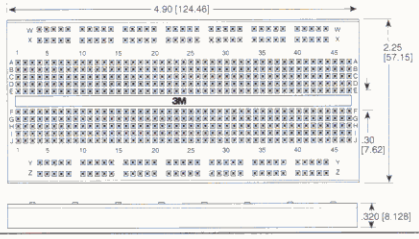
Super Strips

923252
923748* Full Terminal Strip 128 5-tie-point terminals (2 rows of 64) and 8 buses of 25 connected tie-points



Circuit Strips

923253
923749* 3/4 Terminal Strip 96 5-tie-point terminals (2 rows of 48) and 4 buses of 35 connected tie-points



* Terminals Gold Plated at 10 millionths thick

For sales, ordering and technical information contact your local 3M distributor or 3M at **800-321-9668**

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