

TEST LEADS, PATCH CORDS & JUMPERS

Smith Test Leads, Patch Cords and Jumpers are precision-made interconnect wire devices for temporary attachment of wire leads between equipment and circuitry. Each style of Lead is meant for a specific application and will provide the greatest degree of safety and convenience when used properly.

TEST LEADS are the most commonly used temporary connection devices. They are usually attached to a meter or other instrument at one end and have a device for probing circuitry and contacts at the other end. Since the operator is usually in close proximity to live circuitry when using test leads, safety design is of paramount importance. At the instrument end, a variety of connection plugs are available. All of the Safety-Designed plugs have fully shrouded insulation covering metal parts and are made to fit all popular safety input schemes. Test Leads are also offered with plugs to fit older-style instruments and are made with connectors that expose the least amount of metal when seated.

At the Probe end, all Smith Test Leads feature a safety prod, which combines many safety features in an original Smith design:

- . The prods are made of a tough, flame-retardant plastic which resists deformation and cracking under the most severe service.
- . The shape is ergonomically designed for comfort and provides a slip-proof grip.
- . Finger-grip grooves and a generous guard-washer prevent accidental contact with live conductors.
- . The prod tip is permanently secured in the prod and cannot be accidentally removed or unscrewed.
- . The lead wire is soldered to the tip and held with an internal strain relief for maximum security against breakage.
- . The probe tip is unique in that it serves multiple purposes:
 - . It is precision .080 phone tip for insertion in standard jacks.
 - . It has a specially-formed sharp tip for insulation piercing.
 - . A special groove at the front lays over solid wires without slipping.
 - . An 8-32 thread at the rear allows the attachment of standard adapters, such as alligator clips, which maintain the integrity of insulation to the prod.










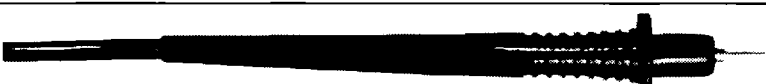



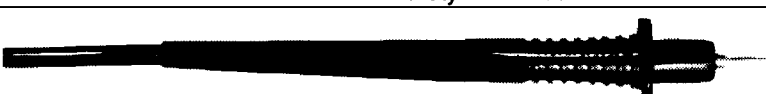

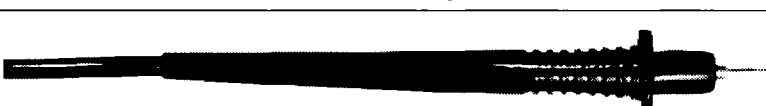

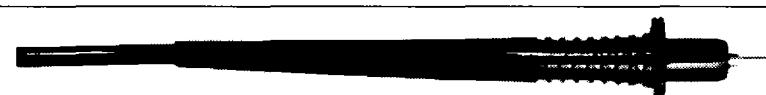

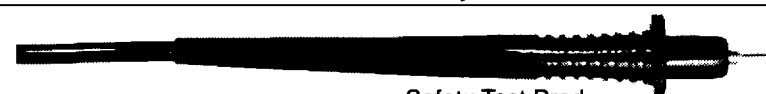

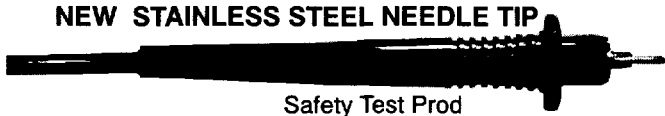


PATCH CORDS serve a similar purpose but are usually used to simultaneously connect two-circuit cables and devices to each other, generally having signal and ground connections. Low-frequency, low-impedance patch cords have twisted-pair cable, while the High and RF-frequency Patch Cords are made with coaxial cable. Smith standard RF patch cords are made with 50 ohm coaxial cable and are available with other cables on special order. Interconnections can be made using Alligator Clips, Dual Banana Plugs and both BNC and UHF series coaxial connectors. Additional types and lengths can be specially ordered from our factory. Please note that, except for types with coaxial connectors at both ends, impedance mismatches will exist when using these cables for temporary connections.

JUMPERS are the simplest, most universal of the interconnect cables. Jumpers come in a variety of wire sizes, lengths and end configurations. Jumpers are the most common universal connection devices which clip on wires, terminals, chassis, posts and many other electrical terminations to rapidly interconnect two circuits for measurement or testing. Standard and miniature, booted and uninsulated styles are offered in a large variety of lengths and colors. However, Clip Jumpers are electrically noisy and may be unsafe at power voltage levels and should only be used for temporary connections. The preferred technique is to use a Jumper with a connector matching the post, jack, or other terminal to which it is desired to connect.

The balance of Jumpers offered in this catalog are multiple combinations of these connectors on various types of wire and lengths. In addition to insulated Alligator Clips, the choice can be made among Banana Plugs, Phone Tips and Spade Lugs. These connectors will offer solid, semi-permanent connections between instruments with a maximum of safety and reliability.

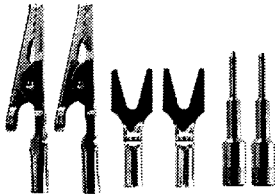
SAFETY TEST LEADS

All packaged in pairs of 1 Red and 1 Black. All test leads are 4' long.

PART #	METER END	TEST PROBE END
9325P	 Shrouded Safety Banana Plug - Safety designed to fit most digital Volt meters that have safety jack input.	 Safety Test Prod
9321P	 Shrouded Safety Banana Jack - Safety designed to fit most digital Volt meters that have shrouded safety plug input.	 Safety Test Prod
9829P	 Shrouded Safety Jack for Simpson Model 260 Series 7	 Safety Test Prod
623P	 Standard Banana Plug	 Safety Test Prod
9327P	 Standard Angled Banana Plug	 Safety Test Prod
9323P	 Minature Angled Banana Plug	 Safety Test Prod
625P	 Right-Angle Phone Tip	 Safety Test Prod
685P	 Right-Angle Standard Banana Plug	 Safety Test Prod
603P	 Standard Phone	 Safety Test Prod
615P	 Standard Alligator Clip with Boot	 Safety Test Prod
622P	 Standard Banana Plug	 NEW STAINLESS STEEL NEEDLE TIP Safety Test Prod
9317P	 Standard Banana Plug	 NEW TEST PROD Rubber Insulated Coil Cord Safety Test Prod

TEST LEADS

INTERCHANGEABLE TIP TEST LEAD KIT



PART NO.	QUANTITY	ACCESSORIES
610P	2	Phone Tips
		Alligator Clips
		Spade Lugs

DESCRIPTION: Banana plug test lead kit, with additional parts for universal attachment to various instrument input connectors. Adapters plug on Banana Plug end. Alligator clip #720 threads on prod handle (not supplied).

PROD HANDLE: Molded ABS.

PROD TIP: Brass, Nickel-plated.

BANANA PLUG: Molded Polycarbonate handle. Beryllium copper spring Nickel-plated.

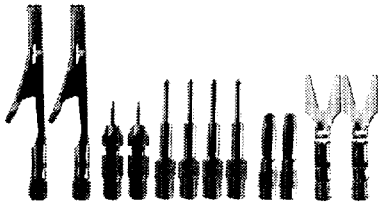
WIRE: #18 PVC insulated, extra-flexible, kink resistant. Nominal length 48".

COLORS: Supplied as a pair, one each, Red and Black.

Replacement Parts for 610P:

PART NO.	DESCRIPTION	QUANTITY
610-25	Accessory Kit	Phone Tip
		Alligator Clip
		Spade Lug

UNIVERSAL TEST LEAD KIT



PART NO.	QUANTITY	ACCESSORIES
699	2	Phone Tips
		Alligator Clips
		Spade Lugs
699	4	Phone Tips
	2	Needle Tips

DESCRIPTION: An indispensable kit for every technician, laboratory, production control station and repair/service facility. A pair of ribbed safety-grip test prods, permanently fixed on one end. Meter ends and prods have modular connectors into which fit a complete assortment of instrument input accessories. One pair of leads and accessories are supplied in a handy folding vinyl pouch.

WIRE: #18 PVC insulated, extra-flexible, kink resistant. Nominal length - 48".

COLORS: Supplied as a pair, one each, Red and Black.

Replacement Parts for 699:

PART NO.	DESCRIPTION	QTY.	
699-20	Accessory Kit	Needle Tips	
		Alligator Clips	
		Spade Lugs	
699-20	Accessory Kit	Banana Plugs	
		4 each	Phone Tips
699-Lead	Replacement Test leads	1 each	Red, Black

COIL-CORD PHONE TIP TEST LEADS



PROD HANDLE: Molded ABS.

PROD TIP: Brass, Nickel-plated.

PLUG: Molded Nylon.

WIRE: 41/36 stranded #20 AWG rubber insulated coil-cord wire. Nominal O.D. is .165". Retracted length of cord is 12", extended length is 6'.



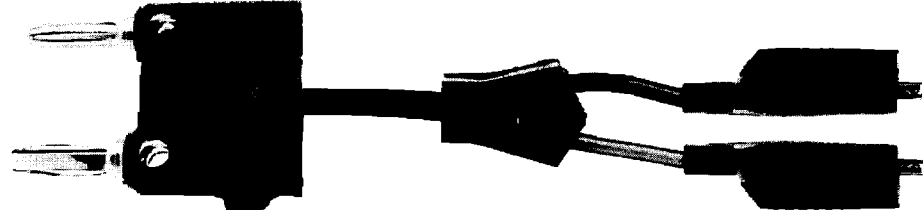
COLORS: Supplied as a pair, one each, Red and Black.

PART NO.	METER END
618	Standard Phone tip

PATCH CORDS


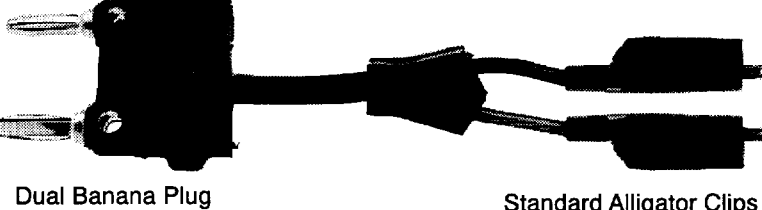
LOW FREQUENCY PATCH CORDS

Wire — 2 Conductor twisted pair cable. Stranding — 65/36
 AWG — 18 Insulation — PVC

PART #	LENGTH	
	INCHES	
1532-12 1532-24 1532-36 1532-48 1532-60	12 24 36 48 60	 Dual Banana Plug Dual Banana Plug
1531-12 1531-24 1531-36 1531-48 1531-60	12 24 36 48 60	 Dual Banana Plug Standard Alligator Clips with Boots

















R.F. PATCH CORDS

Wire — RG 58/U Coaxial Cable. Insulation — PE
 Impedance — 50 Ohms Jacket — Black PVC

PART #	LENGTH	
	INCHES	
1580-12 1580-24 1580-36 1580-48 1580-60	12 24 36 48 60	 Dual Banana Plug Standard Alligator Clips with Boots

Ntt-Smith 632 Arch Street Meadville, Pa. 16335
 Phone (814) 724-6440 FAX (814) 333-1912
 Quality Connectors and Cable Assemblies

JUMPERS

PART #	WIRE		LENGTH INCHES	UNIT	COLORS	TEST END	METER END
	AWG	MATERIAL					
1332	18	PVC	48	Pair	A		
1596-12 1596-24 1596-36 1596-48 1596-60	18	PVC	12 24 36 48 60	One	D		
629 657 658 659	20	Rubber	12 24 36 48	Pair	A		
1866-12 1866-24 1866-36 1866-48 1866-60	18	PVC	12 24 36 48 60	One	D		
1867-12 1867-24 1867-36 1867-48 1867-60	18	PVC	12 24 36 48 60	One	D		
649	20	Rubber	48	Pair	A		
1865-12 1865-24 1865-36 1865-48 1865-60	18	PVC	12 24 36 48 60	One	D		
1510-8 1510-12 1510-24 1510-36	18	PVC	8 12 24 36	One	B		

Color Code for Jumpers
(add color number as suffix to part number)

A - Pair, one Red lead, one Black lead

C - Available in 10 colors:














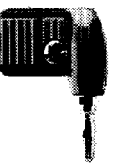
-101 White -103 Black -105 Blue -107 Yellow -112 Violet
-102 Red -104 Green -106 Orange -108 Brown -113 Gray

B - Available in 6 colors:

-101 White -103 Black -105 Blue
-102 Red -104 Green -107 Yellow

D - Available In Red (-102) and Black (-103) ONLY

JUMPERS

PART #	WIRE		LENGTH INCHES	UNIT	COLORS	TEST END	METER END
	AWG	MATERIAL					
1590-6 1590-12 1590-18 1590-24	24	PVC	6 12 18 24	One	C		
1595-8 1595-12 1595-24 1595-36	18	PVC	8 12 24 36	One	B		
1591-6 1591-12 1591-18 1591-24	24	PVC	6 12 18 24	One	D		
1864-12 1864-24 1864-36 1864-48 1864-60	18	PVC	12 24 36 48 60	One	D		
627	20	Rubber	48	Pair	A		
628	20	Rubber	48	Pair	A		
647	20	Rubber	48	Pair	A		

Color Code for Jumpers

(add color number as suffix to part number)

A - Pair, one Red lead, one Black lead

C - Available in 10 colors:

















-101 White -103 Black -105 Blue -107 Yellow -112 Violet
-102 Red -104 Green -106 Orange -108 Brown -113 Gray

B - Available in 6 colors:

-101 White -103 Black -105 Blue
-102 Red -104 Green -107 Yellow

D - Available In Red (-102) and Black (-103) ONLY

JUMPERS

PART #	WIRE		LENGTH INCHES	UNIT	COLORS	TEST END	METER END
	AWG	MATERIAL					
604 605 606 607	20	Rubber	12 24 36 48	Pair	A		
						Standard Alligator Clip	Standard Alligator Clip
1342	24	PVC	48	Pair	A		
						Miniature Alligator Clip with Boot	Miniature Angled Banana Plug
1597-12 1597-18 1597-24 1597-36 1597-48 1597-60	24	PVC	12 18 24 36 48 60	One	D		
						Miniature Alligator Clip with Boot	Miniature Alligator Clip with Boot
716 717 718 719	20	Rubber	12 18 24 36	Pair	A		
						Miniature Alligator Clip with Boot	Miniature Alligator Clip with Boot
671	20	Rubber	48	Pair	A		
						Crocodile Clip with Boot	Spade Lug
675	20	Rubber	48	Pair	A		
						Crocodile Clip with Boot	Right Angle Phone Tip
648	20	Rubber	48	Pair	A		
						Crocodile Clip with Boot	Right Angle Banana Plug
1334-8 1334-12 1334-24 1334-36	18	PVC	8 12 24 36	One	D		
						Standard Angled Banana Plug	Standard Angled Banana Plug

Color Code for Jumpers

(add color number as suffix to part number)

A - Pair, one Red lead, one Black lead

C - Available in 10 colors:









-101 White -103 Black -105 Blue -107 Yellow -112 Violet
-102 Red -104 Green -106 Orange -108 Brown -113 Gray

B - Available in 6 colors:

-101 White -103 Black -105 Blue
-102 Red -104 Green -107 Yellow

D - Available In Red (-102) and Black (-103) ONLY

JUMPERS

PART #	WIRE		LENGTH	UNIT	COLORS	TEST END	METER END
	AWG	MATERIAL	INCHES				
1349-8 1349-12 1349-24 1349--36	24	PVC	8	One	C		
12							
24							
36							
1336-8 1336-12 1336-24 1336-36	18	PVC	8	One	C		
12							
24							
36							
1335-8 1335-12 1335-24 1335-36	18	PVC	8	One	C		
12							
24							
36							
1344-8 1344-12 1344-24 1344-36	24	PVC	8	One	C		
12							
24							
36							

Color Code for Jumpers

(add color number as suffix to part number)

A - Pair, one Red lead, one Black lead

C - Available in 10 colors:

-101 White -103 Black -105 Blue -107 Yellow -112 Violet
-102 Red -104 Green -106 Orange -108 Brown -113 Gray

B - Available in 6 colors:

-101 White -103 Black -105 Blue
-102 Red -104 Green -107 Yellow

D - Available In Red (-102) and Black (-103) ONLY

TABLE A

TEST LEADS are always provided in standard 4-foot lengths and in Red and Black pairs.

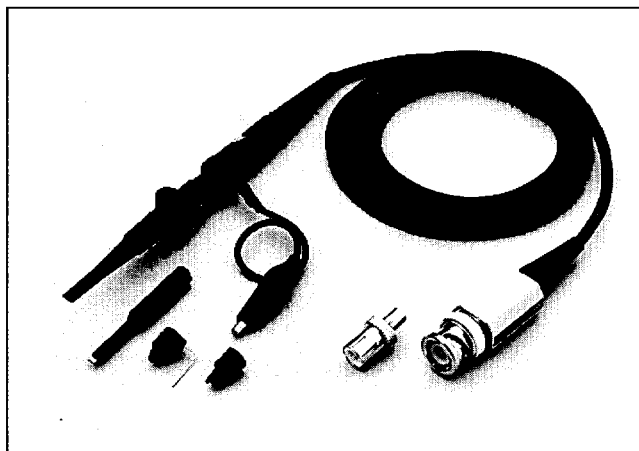
PATCH CORDS are offered in standard lengths and in colors to match cable jacket. Other lengths and end-configurations are available on special order.

JUMPERS are offered in pairs of Red and Black and in other colors separately in many cases. The lengths cataloged are the most popular for usual applications but can be provided in any length on special order.

TEST LEAD WIRE SPECIFICATIONS

AWG SIZE	MATERIAL	O.D.	STRANDING	RATINGS	
				VOLTAGE	CURRENT
#18	PVC	0.140"	65/36	10KV	10 AMP
#18	Rubber (Buna N)	0.140"	65/36	10KV	10 AMP
#20	Rubber	0.120"	26/34	5KV	8 AMP
#24	PVC	0.090"	19/36	5KV	5 AMP

OSCILLOSCOPE PROBE KITS



Features

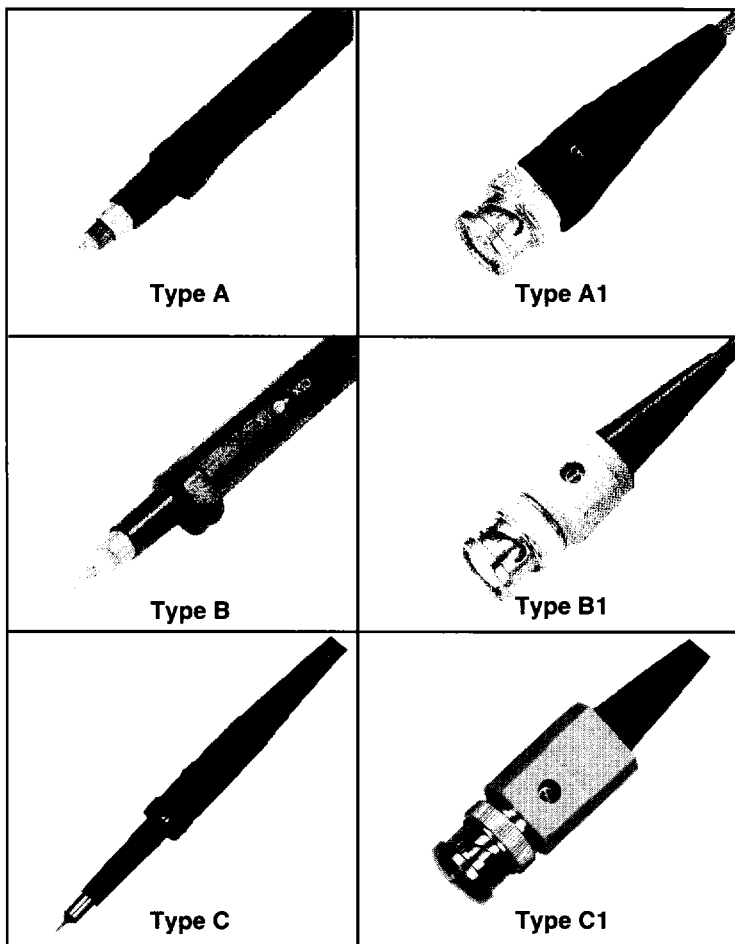
- Stable response throughout bandwidth for accurate measurements.
- Protective shielding eliminates distortion from body induction.
- Low noise cable for signal clarity.
- Glass filled retractable pincher tip for increased heat resistance.
- Detachable/replaceable ground leads with rotating collar for easy handling.
- Rugged, durable construction that withstands tension.
- Light weight and compact design for easy access to high density circuitry.
- Length: 1.5 M

Part Number	Bandwidth	Attenuation	Input		Compensation Range	Max Input Voltage	Probe Configuration	Compensation Configuration
			Resistance	Capacitance				
OP1010	100 MHZ	10X	10MΩ	12.5 PF	20-35 PF	600 V DC	A	A1
OP1110	100 MHZ 6 MHZ	10X 1X	10MΩ 1MΩ	14 PF 150 PF (Max.)	20-35 PF N/A	600 V DC	B	B1
OP1112	60 MHZ 6 MHZ	10X 1X	10MΩ 1MΩ	22 PF 200 PF (Max.)	20-45 PF N/A	600 V DC	B	B1
OP2010	300 MHZ	10X	10MΩ	14 PF	15-35 PF	600 V DC	C	C1

All Scope Probe Kits are supplied in a handy folding vinyl pouch.

Standard Accessories (Supplied in Each Kit)

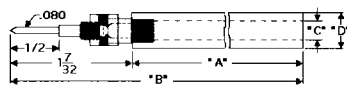
- Retractable Pincher Tip
 - Ground Lead
 - Ground Bayonet
 - IC Tip
 - BNC Adapter
 - Screwdriver
- } Except OP1112



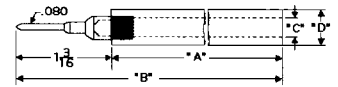
TEST PRODS



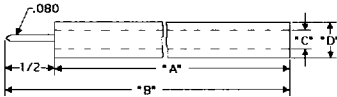
A



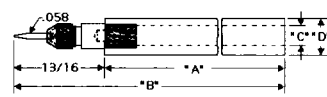
B



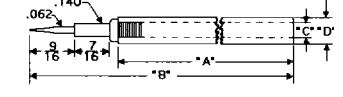
C



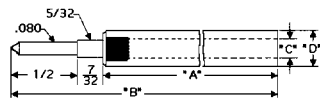
D



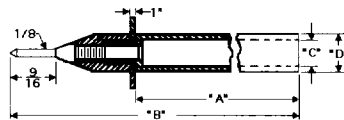
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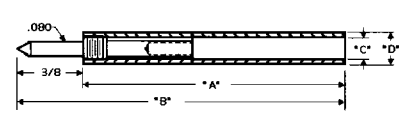
F



G



H



J

Colors: Add color number as suffix to part number.
-102 Red -103 Black

PART #	ILLUS.	MATERIAL	TIP	WIRE CONNECTION	A HANDLE LENGTH	B OVERALL LENGTH	C I.D.	D O.D.	
302	A	ABS	Threaded	Solderless	4	5-1/4	3/16	3/8	
303			Replaceable		5-1/2	6-3/4			
323	B	Fiber	Force fit	Solderless	4	5-7/32	1/4	3/8	
382						5-1/4	3/16		
352						1/4			
383						3/16			
353		5-1/4	6-3/4	1/4					
384		5	6-1/4	7/32	5/16				
319		C	ABS	Threaded	Solderless	4	5-3/16	3/16	3/8
329						5-1/2	6-11/16		
363	D	Phenolic	Replaceable	Solder	4	4-1/2	3/16	3/8	
364					5-1/2	6			
317	E	Phenolic	Replaceable	Solder	4	4-13/16	7/32	5/16	
318					5-1/2	6-5/16			
314	F	Phenolic	Replaceable	Solder	4	5-3/32	7/32	5/16	
313					6	7-3/32			
322	G	Phenolic	Replaceable	Solder	4	4-23/32	3/16	1/4	
630	H	Fiber	Replaceable	Solder	4-1/8	5-3/4	1/2	1	
666	J	Butyrate	Replaceable	Solder	3	3-3/8	1/8	3/16	