



ELECTRICIAN'S SCISSORS

For cutting soft, thin gauge wire or metal. With double notches for stripping. This hot-drop forged tool is more durable than most and a good tool for both the lab and a field technician's tool case.

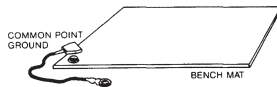
Cat. No.	Net Price
12-0292-0000	\$12.41



MINIATURE SCISSORS

Extra fine, 4-1/2" overall scissor for fine work. Excellent for shaping printed circuit patterns, trimming fine wires, etc. An asset for today's prototype builder. A very handy P.C. graphic art tool.

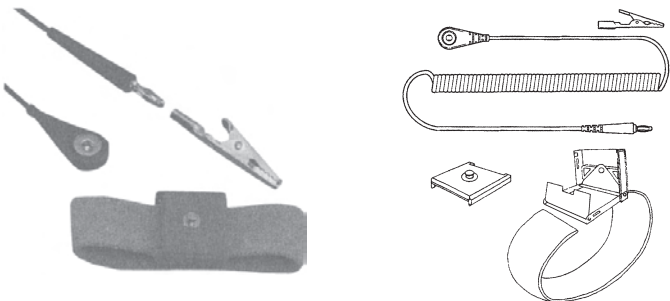
Cat. No.	Net Price
12-0280-0000	\$8.12



DISSIPATIVE WORKSTATION KIT

Mat with common point ground for those who already have wrist straps and need top install bench tops. **Each Kit Contains:** (1) 18" x 24" blue bench mat (C12-8041-0000). (1) Common point ground cord (12-8032-0000). (1) Universal snap kit (12-8028-0000).

Cat. No.	Net Price
12-8042-0000	\$54.19



ADJUSTABLE ECONOMY WRIST STRAP KIT

Complete wrist strap kits include 6" coil cord with 4mm snap stud and alligator clip. **Wrist Strap:** Machined .160" (4mm) stud, 300 series stainless steel. To fit 1/8" (4mm) spring loaded medical snap socket. Easy to open plastic clasp secures elastic material in place, and allows the user to easily adjust the wrist band size. Maintains electrical continuity even when open. Non-allergenic stainless steel base plate, provides excellent skin contact, for superior grounding. Insulating cap, thermoplastic. Soft elastic band. **Ground Cord:** Barrel type banana plug. Fits industry standard banana jack .166" (4.22mm). Metallized, high flex tinsel, black jacket. One megohm, 1/4 watt, series resistor, molded within snap assembly, limits current for operator safety. Spring loaded snap socket. Alligator clip included.

Cat. No.	Net Price
12-8010-0000	\$12.70



FLUSH CUTTER

Economy flush cutter with the "feel" and precision of tools costing twice as much. Angular design is ideal for trimming wires or circuit boards. Precision ground cutting edges specified for 14 AWG copper wire. 5" long.

Cat. No.	Net Price
12-0500-0000	\$6.87



HIGH LEVERAGE DIAGONAL CUTTING PLIERS

Powerful leverage...heavy cutting ease. Induction hardened cutting edges. Length 7".

Cat. No.	Net Price
12-0318-0000	\$9.13



DIAGONAL CUTTING PLIERS

Narrow jaws work easily in confined areas. Useful for all general purpose electric and electronic work. Induction hardened cutting edges. Length 5".

Cat. No.	Net Price
12-0312-0000	\$7.50



MINIATURE DIAGONAL CUTTING PLIERS

Precision matched cutting edges are induction hardened. Cuts most types of small wire w/spring.

Cat. No.	Net Price
12-0300-0000	\$8.83



PALM GRIP PLIERS

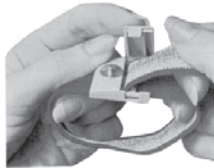
The most commonly used cutters and pliers, precision-built with rust-proof stainless steel working ends and lightweight but durable molded handles.

Cat. No.	Description	Net Price
12-0200-0000	Flush Cutter	\$24.89
12-0216-0000	Needle-Nose Pliers	24.89

3M Static Control Systems

3M WRIST STRAPS

3M™ Wrist Straps are the front line of defence in all static control processes. A one megohm resistor is molded into 3M™ Wrist Strap Ground Cords. All 3M™ Wrist Strap Sets include an alligator clip, which fits over the installed banana jack on the ground cord, to provide an alternative ground attachment method.



ADJUSTABLE FABRIC WRIST STRAPS

Ensure a comfortable, custom fit with 3M™ Adjustable Fabric Wrist Straps, which feature a band made of silver plated, monofilament continuous thread woven together with elastic nylon to assure full conductivity, comfort, and reliability, while providing rapid and continuous drain of static charge. Adjustability eliminates the need to order and stock several band sizes and provides reliable 360-degree protection.

Cat. No.	Description	Net Price
2204	Adjustable fabric wrist band made of knitted fabric. Colour: Burgundy.	\$7.15
2214	Wrist strap with coiled cord. 5 ft. (5.5m) practical extended length with burgundy adjustable fabric band.	17.94
2224	Wrist strap with coiled cord. 10 ft. (3.0m) practical extended length with burgundy adjustable fabric band.	24.93
2271	Adjustable Fabric Wrist Band made of stretch weave fabric, blue colour with white trim.	3.65
2272	Adjustable wrist strap with coiled cord. 5 ft. (1.5m) practical extended length. Colour: Blue with white trim band.	7.38



FIXED-SIZE METAL WRIST STRAPS

3M™ Metal Wrist Straps feature quality Speidel™ metal expansion bands for durability and comfort. Each link is covered with an insulative plastic cap. Three sizes are available: small for wrists from 4.5" to 6" in circumference, medium for wrists from 5.5" to 7.25", and large for wrists larger than 6.5". Extra large sizes available upon request. Grounding cords sold separately.

Cat. No.	Size	Net Price
2205	Small	\$20.96
2206	Medium	20.96
2207	Large	20.96



WRIST STRAP GROUNDING SYSTEM

Grounds two wrist straps and conveniently mounts beneath the edge of most work benches. Comes complete with 10 ft ground cord.

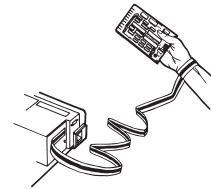
Cat. No.	Net Price
3042	\$21.49



ADJUSTABLE THERMOPLASTIC WRIST STRAP

This 3M™ 4600 Series Adjustable Wrist Strap features a thermoplastic band with an integrally molded conductive interior. Comes with an easy on/easy off adjustable "zipper" style latching mechanism and has a 4mm snap. Colour: Blue.

Cat. No.	Description	Net Price
4620	Wrist strap	\$3.08
4650	Wrist strap with 5 ft. coiled cord, 4mm stud	12.23
4610	Lightweight coiled cord, 5 ft. (1.5m), 4mm snap	9.14
4611	Lightweight coiled cord, 10 ft. (3.0m), 4mm snap	9.35



DISPOSABLE WRIST STRAPS

The 3M™ 2209 Disposable Wrist Strap provides cost-effective and reliable static protection. The wrist strap is ideally suited for shipping with components and devices, such as memory upgrades, sound cards, etc., to ensure protection at the receiving end. It may also be used for short-term use in the plant for visitors and others who don't need the durability of a reusable strap. Hypoallergenic. Custom printing available.

Cat. No.	Description	Net Price
2209	Disposable Wrist Straps	\$1.22



2210




2220

WRIST STRAP GROUNDING CORDS

3M™ Wrist Strap Ground Cords are highly durable with segmented strain relief and a single bundle of tensile conductors laced for great strength and reinforced with strong synthetic fibres. These features provide long cord life and easy movement. Each cord has a 1-megohm resistor molded into the snap end.

Cat. No.	Size	Description	Net Price
2210	5'	Ground Cord, Coiled	\$14.31
2220	10'	Ground Cord, Coiled	18.63



Part's indicated with a leaf  are considered RoHS July 2006 compliant based on the manufacturer's confirmation at the time of publishing. For additional information please contact Electro Sonic.

3M CONTINUOUS MONITORING SYSTEM

The 3M™ Continuous Monitoring System is designed to continuously monitor the ground operation of work strap grounding systems to ensure a static-free workspace. Personnel using this system would not be required to test their wrist straps, or cords, or fill in a daily ESD log.

The 3M™ system consists of a workstation monitor and specially designed wrist straps and ground cords. 3M™ monitors are either resistance or voltage type, which are far more reliable than capacitance type monitors. 3M™ dual-conductor wrist straps and ground cords contain two separate sets of independent conductors, which provide the resistance/voltage circuit that is monitored.



RESISTANCE-TYPE CONTINUOUS MONITOR

The 3M™ 724 Wrist Strap Workstation Monitor uses a reliable resistance method that includes the operator's skin resistance to determine if the ground system is operating properly. Audible and visible alarms are triggered if operator resistance or ground connections fall outside of acceptable limits. The 724 monitor uses dual conductor wrist straps (sold separately) to provide the operator resistance circuit. The 724 monitors a visitor to the workstation or a second operator and is designed to work with 3M™ 8200, 8300, and 8800 Series Worksurfaces.

Cat. No.	Description	Net Price
724	Workstation monitor complete with a quick connect/disconnect 732 remote jack and mounting hardware.	\$179.95



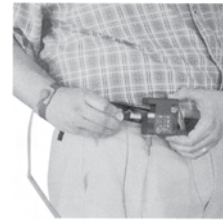
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VOLTAGE-TYPE CONTINUOUS MONITOR

The 3M™ 790 Static Monitor is a cost-efficient unit that is small, compact, and versatile in its usage and may be mounted directly onto device handling equipment, testers, and auto-insertion equipment as well as at individual workstations. Housed in static dissipative plastic, the 790 works by measuring the voltage potential on a person referenced to ground. A slide switch allows the user to select the voltage level necessary for the specific job function being performed. The audible alarm can be adjusted to overcome background noise. The 790 monitor has two wrist strap input jacks and uses dual conductor wrist straps (sold separately).

Cat. No.	Description	Net Price
790	The 790 includes adhesive mounting plate, AC adapter, and two ground cords with a two-wire connector.	\$97.52



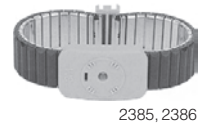
PORTABLE WRIST STRAP CONTINUOUS MONITOR

The 3M™ 725 Wrist Strap Monitor is a small, compact, battery-powered unit that continuously monitors one worker and that worker's wrist strap. The 725 uses the same reliable resistance method as the 724 monitor, but also monitors the ground wire connection and battery level. The 725 uses dual conductor wrist straps (sold separately) and has both audible and visual alarms that alerts the worker when their wrist strap is not working properly. The 724 is ideal for field service applications or in manufacturing environment where employees are highly mobile.

Cat. No.	Description	Net Price
725	The 725 wrist strap monitor can be used in a manufacturing environment and field service environment.	\$94.31



2368



2385, 2386



4720



2360, 2370, 2371

DUAL CONDUCTOR WRIST BANDS AND GROUND CORDS

Adjustable Fabric Wrist Band: 2368 for use with 3M™ 724 and 725 continuous monitors, 2368VM with the 790 static monitor.

Adjustable Thermoplastic Wrist Band: 4720 for use with all 3M™ continuous monitors.

Metal Wrist Band—Fixed Size: 2384 (sm), 2385 (med), and 2386 (lg) for use with 725 and 725 continuous monitors. 2384VM, 2385VM, and 2386VM for use with the 790 static monitor. Extra large size available on request.

Cat. No.	Description	Net Price
2368	Dual conductor adjustable fabric wrist band. Colour: Turquoise. Ground cord not included.	\$10.94
2368VM	Dual conductor adjustable fabric wrist band. Colour: Turquoise. Ground cord not included.	10.94
4720	Dual conductor wrist band. Colour: Blue. Ground cord not included.	6.49
2384	Small dual conductor metal wrist band. Ground cord not included.	27.33
2384VM	Small dual conductor metal wrist band. Ground cord not included.	27.33
2385	Medium dual conductor metal wrist band. Ground cord not included.	27.33
2385VM	Medium dual conductor metal wrist band. Ground cord not included.	27.33
2386	Large dual conductor metal wrist band. Ground cord not included.	27.33
2386VM	Large dual conductor metal wrist band. Ground cord not included.	27.33

GROUND CORDS FOR WRIST BANDS ABOVE

Cat. No.	Description	Net Price
2360	Dual conductor coiled cord, 5 ft. (1.5m) practical length.	22.06
2370	Dual conductor coiled cord, 10 ft. (3.0m) practical length.	25.61
2371	Dual conductor coiled cord, 20 ft. (6.0m) practical length.	31.24

NOTE: Dual conductor bands and cords are not interchangeable with single conductor bands and cords.

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3M SHOE GROUNDING ASSEMBLIES

3M™ Shoe Grounding Assemblies effectively ground mobile personnel when they are in contact with conductive and dissipative flooring. The function of foot and heel straps depends upon foot perspiration in the shoe to sustain electrical contact between the strap and the body. One size fits most shoes and boots, with comfortable elastic straps.



HEEL-GROUNDING ASSEMBLY

3M™ 2051 Heel Grounding Assemblies have a conductive, non-slip outer sole providing reliable static grounding. Cup-style construction provides durability. Comes complete with a 1-megohm resistor.

Cat. No.	Net Price
2051	\$9.09

3M™ ECONOMY HEEL GROUNDING ASSEMBLY

3M™ 2044 Economy Heel Grounding Assemblies feature the cup-style construction of our 2051, but at a very attractive price. The "yellow glow" fabric is a high visibility colour, allowing supervisors to easily see that employees are wearing their heel grounders. Comes complete with a 1-megohm resistor.

Cat. No.	Net Price
2044	\$4.96

NON-MARKING HEEL GROUNDING ASSEMBLY

3M™ 2056 Heel Grounding Assemblies have a non-marking, conductive, carbon-free, non-slip outer layer providing reliable static grounding, while the inner layer provides a non-marking surface for the shoe.

Cat. No.	Net Price
2056	\$12.07

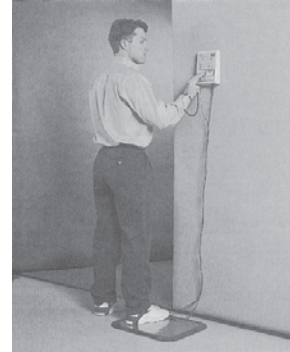


DISPOSABLE SHOE GROUNDING STRAP

3M™ 2045 Disposable Shoe Grounding Straps provide a reliable path for static charge drain to ground when personnel are wearing shoes with insulated soles. The 2045 is especially desirable in work situations where personnel must move around—wave soldering, automatic insertion, or operation of sensitive computerized equipment. To be effective, the shoe grounders must be worn on both feet.

Cat. No.	Net Price Per Box of 100
2045	\$43.90

3M WRIST STRAP AND FOOTWEAR TEST EQUIPMENT



WRIST STRAP TESTER

The 3M™ 740 Wrist Strap and Footwear Tester is an AC-powered unit designed to be wall mounted in a production facility for daily testing of employees' static control wrist straps. Use of the optional 3M™ 741 Shoe Electrode test plate allows the 740 to be used as a footwear tester as well. Simple to operate, the 3M™ 740 has several useful features and options:

- Red and green LEDs give a clear "go" or "no go" indication.
- The user can select any of four different resistance levels.
- The unit tests the wrist strap and cord while they are being worn, and can also test each component independently to isolate an indicated fault.

There is also a digital output that can be used to interface with a computer, automatic door lock, alarm, or other control device. The 741 Electrode is not included with the 740 and must be ordered separately.

Cat. No.	Description	Net Price
740	Wrist Strap and Footwear Tester	\$513.44
741	Shoe Electrode (sold separately)	132.78

NOTE: 740 includes base unit, output connector, 3M™ DualLock™ wall mounting system, AC/DC transformer and a cover for the plug-in jack.



PORTABLE WRIST STRAP TESTER

The 3M™ 746 Wrist Strap Tester can be used to test wrist straps in a variety of situations, from daily testing in a production facility to periodic testing at remote sites or field service locations. The 746 is supplied with an AC adapter, but it also contains a long-life lithium battery as back-up power for portable applications or during power failures. As with other 3M™ test equipment, the 746 is easy to use. It can test the entire wrist strap system while it is being worn, or it can test the individual components to isolate a fault condition.

Cat. No.	Description	Net Price
746	Includes an AC adapter, lithium battery, and wall-mounting kit.	\$242.02

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