



**PRODUCT BROCHURE**  
**Electrical Safety**

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# Electrical Safety

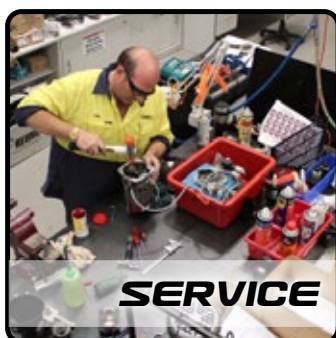
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SALES • SERVICE • MANUFACTURE • HIRE

Our **Energy**, Your Power.

## THE ENERGY NETWORK



## Quality Tools & Equipment for the Construction and Maintenance of Today's Electricity Networks

TEN Group (The Energy Network) was founded in 1998 with a vision to offer a range of products and services required for the electricity transmission and distribution industry in a constantly changing market. We are a trusted and valued supplier of quality tools and equipment for the construction and maintenance of overhead and underground networks. Our business currently operates across the Energy, Industrial, Government, Rail, Mining and Communications networks.

TEN Group is comprised of four complementary divisions:  
**SALES** of specialised tools & construction equipment to the energy industry  
**SERVICE** of a broad range of hydraulic tools & construction equipment  
**MANUFACTURE** of canvas & PVC products  
**HIRE** of transmission and distribution stringing & cable hauling equipment

Our certification to ISO9001 is your guarantee that we have made the commitment to implement best practice in systems, processes, service and quality control. At TEN Group, customer service is paramount and we strive to continually deliver a superior sales experience, from initial contact through to after sales service.

Our commitment to a safe workplace has resulted in the TEN Group being granted AS4801 Accreditation in April 2012, and an NSCA Excellence award in October 2012 for the 'Best Implementation of an OHS Management System'. By gaining accreditation in AS14001 Environmental Systems, TEN have also gained accreditation of their Integrated Management System (IMS) under ISO 9001:2000, ISO 14001:2004 and AS/NZS 4801:2001.



**SCI QUAL**  
INTERNATIONAL  
OHS SYSTEM CERTIFIED TO  
AS/NZS 4801:2001  
REGN. Number 3567



**SCI QUAL**  
INTERNATIONAL  
QUALITY APPROVED TO  
AS/NZS ISO 9001:2000  
REGN. Number 951



**SCI QUAL**  
INTERNATIONAL  
ENVIRONMENTAL SYSTEM CERTIFIED TO  
AS/NZS ISO 14001:2004  
REGN. Number 4279



**QLD/NT**  
65 Wentworth Place  
BANYO 4014  
P | F +61 7 3212 8999 | 8998  
M 0400 968 238  
**WORKSHOP**

**VIC/TAS/SA**  
24 Deans Court  
DANDENONG STH 3175  
P | F +61 3 9793 1622 | 1644  
M 0408 228 473 | 0499 988 240  
**WORKSHOP**

**WA**  
4/15 Baile Rd  
CANNING VALE 6155  
P +61 8 9455 5574  
M 0400 029 026  
**WORKSHOP**

**NSW/ACT**  
M 0407 009 316

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## ARC FLASH PROTECTION

### Salisbury Lift Front Hood 40 Cal/cm<sup>2</sup>

Part No: LFH40

#### Visibility

- Shield and chin guard offer an additional 45 degrees of vertical view over standard hoods
- Vertical peripheral vision field increases by 109% which allows for a clearer view of surroundings
- Contoured lens naturally extends range of peripheral vision giving user a greater outward visibility and more access to natural light
- Allows for use of task lights to add much needed convenience lighting in dark work places

#### Comfort

- Contains 60% less fabric weight than standard hoods which makes it lighter and more comfortable to wear
- Reduction in fabric allows for more natural head movement and eliminates the need for frequent hood adjustments due to shifts in the excess fabric

#### Ventilation & Breathability

- Industrial design creates a natural ventilation system beneath the brim of the hard hat
- Ventilated bracket design allows carbon dioxide and heat to escape as it rises from the body

#### Breathability matters

According to OSHA, workers are at greater risk of heat stress while using bulky or non-breathable protective clothing and equipment.



If the body cannot get rid of excess heat, it will store it. When this happens, the body's core temperature rises and the heart rate increases. As the body continues to store heat, the person begins to lose concentration and has difficulty focusing on a task, may become irritable or sick, and often loses the desire to drink. Exposure to heat can also increase the risk of injuries because of sweaty palms, lens fogging and dizziness.

**A revolutionary hybrid in arc flash protection**



**Increased visibility, breathability and safety.**

<b>Weight</b>	1.04kg
<b>Measurements</b>	500mmH x 27mmW x 28mmD
<b>Viewing Area</b>	190mm x 500mm
<b>Standards</b>	NFPA 70E, ASTM F2178, ASTM F1506
<b>Fabric</b>	Arc Rated 40 Calorie
<b>Thread</b>	Nomex
<b>Assembly</b>	FR hook and pile attaches shroud to shield assembly
<b>Components:</b>	
Shield Weight balancing shield assembly	
40 Calorie Polycarbonate dual lens, anti-fog and abrasion resistant	
Chin Guard Transparent chin protector with trigger mechanism (printed and 40 cal ATPV)	
Frame with riveted Velcro	
Latch and trigger assembly	

## Salisbury Arc Flash Protection Premium Light Weight 40 Cal/cm<sup>2</sup> Range

### Salisbury Arc Flash Hood

Part No: FH4OPLT

- 40 cal/cm<sup>2</sup> ATPV ratings
- Made from arc flash resistant material Sewn with Nomex® thread (extremely heat resistant)
- Includes the most transparent lens available
- Integrated cooling system available for PRO-HOOD
- Hard hat is included
- One size fits all
- Meets ASTM F2178 and NFPA 70E standards and the flammability requirements for ASTM F1506
- All PRO-HOODS are CE 0120 certified

#### OPTIONS AVAILABLE

- Universal inner anti-fog lens
- Integrated air flow hood system



## ARC FLASH PROTECTION

### Salisbury Arc Flash Coat

Part No: ACC4032PLT

- 40 cal/cm<sup>2</sup> ATPV ratings
- LIGHTEST IN THE INDUSTRY
- Made from arc flash resistant material
- Sewn with Nomex® thread and Nomex® wristlets
- Expansion back added for comfort
- Dual stage front closure with high temperature plastic zipper
- Arc rated hook and pile storm flap
- Coats are intended to be used with PRO-HOODS
- Meets ASTM F1506 and NFPA 70E standards
- All are CE 0120 certified

Keep cooler and improve worker comfort with added ease of movement, without compromising safety.



### Salisbury Arc Flash Bib Overalls

Part No: ACB4030PLT

- 40 cal/cm<sup>2</sup> ATPV ratings
- LIGHTEST IN THE INDUSTRY
- Made from arc flash resistant material Sewn with Nomex® thread
- Integrated heavy duty suspenders
- Relaxed cut for greater mobility
- 30 inch inseam
- Adjustable hook and pile waist straps
- Bib front for added protection
- Adjustable gussets on pant cuffs
- Sizes S - 3XL available
- Meets ASTM F1506 and NFPA 70E standards
- All are CE 0120 certified



### 40 - 75 Cal/cm<sup>2</sup> Kits

- Arc Flash Coat
- Bib Overalls
- Pro-Hood®
- Hard Hat
- Bag
- Safety Glasses

SK8 - SK100 Kits Available



Part No	Colour	Available Sizes	ATPV Rating Cal/cm <sup>2</sup>	HRC
SK40*	Grey	S, M, L, XL, 2XL or 3XL	40	4
SK40LT*	Lightweight Khaki	S, M, L, XL, 2XL or 3XL	40	4
SK55*	Grey	S, M, L, XL, 2XL or 3XL	55	4
SK75*	Grey	S, M, L, XL, 2XL or 3XL	75	4
SK100*	Khaki	S, M, L, XL, 2XL or 3XL	100	4

\* Add size suffix to end of part number eg: SK40XL

Coats & Jackets		Bib Overalls	
Chest	Size	Waist	Size
34-36"	S	28-30"	S
38-40"	M	32-34"	M
42-44"	L	36-38"	L
46-48"	XL	40-42"	XL
50-52"	2XL	44-46"	2XL
54-56"	3XL	48-50"	3XL
Special Order Sizes			
56-60"	4XL	52-54"	4XL
62-64"	5XL	56-58"	5XL



## FACE SHIELDS & HELMETS

### Face Shield & Helmet Protection

#### Part No: AS Series

- Protects against electric arcs
- Utilises nanotechnology to provide a clearer, more transparent window for improved visibility
- Window/shield is designed to be easily replaced without tools
- Faceshield unit includes ventilation ribs that allow a natural convection air flow through the top of the face shield
- Absorbs >99.9% of harmful UV radiation
- Resistant to fogging
- Meets current ANSI Z87.1 and is CSA standard compliant
- Conforms with ASTM F2178 specifications

**A full range of parts and accessories available**

Part No	Image	Details
AS2000HAT		<p><b>AS2000HAT 20 cal/cm<sup>2</sup> Arc Flash Protection Face Shield Unit with Hard Hat</b></p> <ul style="list-style-type: none"> <li>• ATPV rating of 20 cal/cm<sup>2</sup></li> <li>• 7.5" x 20" viewing area</li> <li>• Extra light tint</li> <li>• 15mm thick</li> </ul> <p><i>NOTE: In order to achieve 360 degree 20 cal/cm<sup>2</sup> protection, a 20 cal/cm<sup>2</sup> balaclava must be worn.</i></p> <p><i>NFPA70E: An arc rated hood shall be used when the anticipated incident energy exposure exceeds 12 cal/cm<sup>2</sup></i></p>
AS1200HAT		<p><b>AS1200HAT 12 cal/cm<sup>2</sup> Arc Flash Protection Face Shield Unit with Hard Hat</b></p> <ul style="list-style-type: none"> <li>• ATPV rating of 12 cal/cm<sup>2</sup></li> <li>• 7.5" x 20" viewing area</li> <li>• Extra light tint</li> <li>• 15mm thick</li> </ul>
AS1000		<p><b>AS1000HAT 10 Cal/cm<sup>2</sup> Arc Flash Face Shield Unit With Hard Hat</b></p> <ul style="list-style-type: none"> <li>• 10 cal/cm<sup>2</sup> ATPV rating when used with the included chin cup</li> <li>• HRC 2</li> <li>• Shell Material Polyethylene</li> <li>• Ratchet Suspension</li> <li>• 7.5" x 20" viewing area</li> <li>• Extra light tint</li> <li>• 15mm thick</li> </ul>

### Honeywell Eye Protection Range

#### Part No: A700 Series

- Certified AS/NZS 1337.1:2010
- Sport temples with soft temple tip pads for comfortable fit
- Secure wrap-around design
- Distortion free lenses with 180° field of vision
- Polycarbonate, distortion-free, hardcoat lenses
- Soft temple tip pads for a secure fit
- Available with scratch-resistant hardcoating or optional Fog-Ban anti-fog coating
- 100% Dielectric design

**100%  
Dielectric  
Design**



**Honeywell**



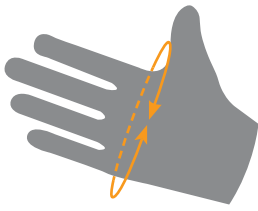
**Full Range Available**

Part No	Frame	Lens	Coating
1015360AN	Clear	Clear	Anti-fog
1015351AN	Grey	Grey	Anti-fog
1015441AN	Amber	Amber	Hardcoat

**Also Available  
Salisbury Arc & Flame  
Resistant Rain Suit**



## RUBBER CLOTHING & ACCESSORIES



### GLOVE SIZING

#### Correct Measurement and Fitting

- Measure the circumference of the palm of your hand
- Any increment over a full or half size will take you to the next full or half size
- Rubber gloves sizes are manufactured in inch (") sizes
- Allow for cotton inner gloves

TEN has access to the full line of Salisbury personal safety protection products



Class 00



Class 0



Class 2



Class 3



Class 4

Rolled, Bell and Contour Cuff Styles available



Bell Cuff



Contour Cuff



Straight Cuff



### Salisbury Gloves

Salisbury know that lives depend on the quality of their products. That's why Salisbury production facilities manufacture rubber insulating gloves that comply with the highest possible standards and regulations. Salisbury rubber insulating gloves have earned the reputation for superior performance - meeting and exceeding the requirements for current ASTM D120 specifications. Salisbury gloves are tested following ASTM D120/IEC903 specifications. SALISBURY is the global leader in the manufacture of electrical insulating rubber gloves.

#### Linesman Gloves LV ASTM CLASS 0 & 00

- Insulating gloves for live line work
- Supplied in pairs only
- High dielectric strength, flexible and durable
- Straight style smooth finish gloves
- Sizes 7 - 12, including half sizes on 8, 9 & 10
- Natural rubber
- Meets ANSI/ASTM D120

**CLASSES  
00-4  
in ALL sizes**

#### Linesman Gloves HV ASTM CLASS 1-4

- Meet ASTM D120 and IEC/EN 60903 standards
- All ASTM voltage classes available
- Single and two colour gloves available
- Dual coloured gloves, internal/external for easy inspection (except Class 00)
- Rolled Cuff (Bell Cuff and Contour Cuff also available)
- Sizes 7 - 12\*, including half sizes 8, 9 & 10  
(\*Excluding Size 7 on Class 3 & 4 and Bell Cuff Gloves)
- Salisbury exclusive Type II Salcor® glove in Class 00 & 0
- Natural rubber
- Meets ANSI/ASTM D120

Part No	VAC	ASTM Class	Sizes	Glove Colour	Length	ASTM Label Colour
E001R-*	500VAC	00	7-12	Red	11"/275mm	Beige
E014R-*	1000VAC	0	7-12	Red	14"/350mm	Red
E114YB-*	10kVAC	1	7-12	Yellow/Black	14"/350mm	White
E216YB-*	20kVAC	2	7-12	Yellow/Black	16"/400mm	Yellow
E316YB-*	30kVAC	3	8-12	Yellow/Black	16"/400mm	Green
E418YB-*	40kVAC	4	8-11	Yellow/Black	18"/450mm	Orange

\*Specify Size - Example:

E114YB/10: E1 - Class, 14 - Length in inches, YB - Colours yellow/black, Size 10

### Salisbury Sleeves

Part No	ASTM Class
D2*RY-EC	2
D3*RY-EC	3
D4*RY-EC	4

\* Enter Size as S=Small, R=Regular, L=Large

Also Available  
Salisbury 40  
Cal Arc Flash  
Gloves



## LEATHER OUTERS



## Non-metallic Buckles



VLP-110S



VLP-112



VLP-114

## Leather Outers

- Leather outers are worn to prevent damage to rubber insulating gloves
- Webbing pull strap with non-metallic buckle
- Supplied in pairs only

Part No	Material	Length	Sizes Available
EOVG-*	Goat	250mm	8, 8.5, 9, 9.5, 10, 10.5, 11
TLPG3S-*	Goat	304mm	7, 8, 8.5, 9, 9.5, 10, 10.5, 11, 11.5, 12
TLPG5S-*	Goat	355mm	

\* Specify size

## Leather Outers

- Crafted by leather glove specialists to fit properly over all industry-standard rubber insulating gloves
- Dual-sized 8-8½, 9-9½, 10-10½, 11-11½, 12
- Grain goatskin leather selected & processed to be soft, flexible and strong
- Low-voltage leather protectors feature non-metallic buckle option
- High-voltage leather protectors feature high-visibility polymeric material with nylon adjustment strap and non-metallic buckle
- Full compliance with ASTM F696 Standard Specification for Leather Protectors for Rubber Insulating Gloves and Mittens

Part No	Voltage	Length	Length	Style
VLP-110S	Low	10 inch	254mm	Nylon strap back, non-metallic buckle
VLP-112	High	12 inch	305mm	Hi-vis cuff
VLP-114	High	14 inch	356mm	Hi-vis cuff



## LEATHER PROTECTIVE OUTERS

## Choosing Leather Outers

Leather outers should always be worn over rubber insulating gloves. To choose the correct leather outer, ASTM recommends a minimum clearance distance between the cuff of the leather outer and the rolled cuff of the rubber insulating glove. This distance provides an insulated leakage path from the outer to the workers wrist and arm.

Class	Specified Insulation Distance	Image
00	13mm (1/2 inch)	
0	13mm (1/2 inch)	
1	25mm (1 inch)	
2	51mm (2 inches)	
3	76mm (3 inches)	
4	102mm (4 inches)	



The minimum distance of exposed cuff rubber should be, as a general rule:  
**25.4mm multiplied by Class 1, 2, 3 & 4 glove.**  
**And not less than:**  
**13mm for Class 00 or 0 gloves**  
**Eg: Class 3 x 25.4mm is 76mm**

References: ASTM F496 & AS 5804



## RUBBER CLOTHING & ACCESSORIES



220801

EOLK

Winter  
VG10823Summer  
VG13820

### Cotton Inners

- Provide comfort, warmth and absorbs perspiration
- Made from cotton

Part No	Description	Length	Best For Class Gloves	Weight
EOLK	Open Weave	300mm	All classes	0.01kg
220801	Thin	220mm	00 & 0	0.01kg

### Voltgard Cotton Liners

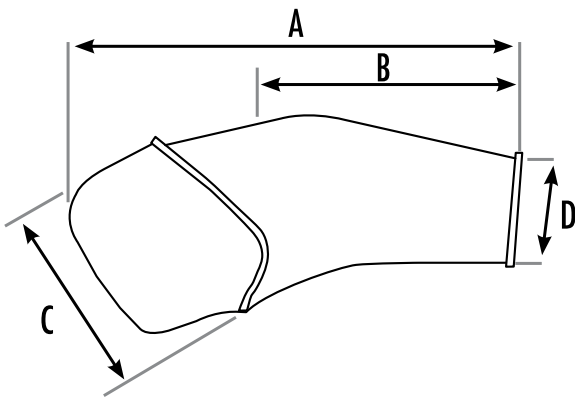
- 100% cotton
- Reversible - fit either hand
- Stretch comfort fit

Part No	Description	Length	Feature	Weight
VG-13820	Summer	300mm		0.01kg
VG-10822	Winter	220mm	Extended Cuff	0.01kg

### SLEEVE SIZING

Sleeves should be selected to fit the arm comfortably, covering from the top of the shoulder to inside the top of the glove. Regular size sleeves are the shortest and have the smallest arm and wrist openings. To minimise the possibility of the sleeves pushing gloves off the hand, size the sleeve to the shortest length possible while maintaining complete coverage to the shoulder.

Size	Length	Dimensions			
		A	B	C	D
Small	24inch /616mm	616mm	384mm	317mm	146mm
Regular	26inch /673mm	673mm	394mm	311mm	140mm
Large	28inch /705mm	705mm	406mm	327mm	175mm
Extra Large	29.5inch /749mm	749mm	445mm	327mm	178mm

D3LRY-EC  
Class 3, Red/Yellow, Size L

### Salisbury Sleeves

- Prevents arm contact with energised lines
- Used in conjunction with rubber insulating gloves
- Insulates from cuff to shoulder
- Curved contour arm with reinforced folded cuff
- Buttons and harness are required, sold separately
- Manufactured to ASTM D1051
- Colours - Red/Yellow
- Made from Natural Rubber

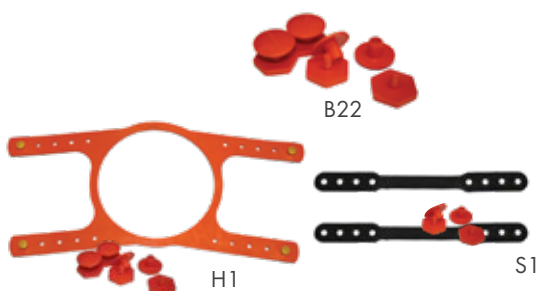
Part No	ASTM Class	Label Colour	Max Working Voltage		Proof Test Voltage	
			AC	DC	AC	DC
D2*RY-EC	2	Yellow	17kV	25.5kV	20	50
D3*RY-EC	3	Green	26.5kV	39.75kV	30	60
D4*RY-EC	4	Orange	36kV	54kV	40	70

\*Enter Size as S=Small, R=Regular, L=Large, XL=Extra Large

### Buttons & Harness for Sleeves

- Required to wear rubber insulating sleeves
  - 4 Buttons required for each pair of sleeves
  - 1 Harness required for each pair of sleeves

Part No	Description
B22	Four Screw Type Buttons
H1	Harness with 4 (TB2) Buttons
S1	Sleeve Straps Set of 2 Buttons



## RUBBER CLOTHING & ACCESSORIES

### Rubber Goods Cleaner Wipes

- Specially formulated water based cleaner for removing dirt, grease and grime
- Safe for use on all natural and synthetic rubbers
- Contains no hazardous ingredients, environmentally safe and biodegradable
- Supplied in handy saturated wipe dispenser, bulk liquids also available

Part No	Description	Wipes (Nominal)	Wt (kg)
RBG-D72	Dispenser	72	1.10



### Rubber Goods Glove Dust/Talc

- Powder for use with rubber products
- Absorbs moisture and perspiration
- Prevents sticking

Part No	Unit	Weight per pack
10-4	Individual 140g Bottles	140g
10-4-4QT	4 x 1.1L	4.4L



### All Purpose Cleaner Concentrate

- Concentrate cleaning liquid for fibreglass, tools, booms, trucks, coverup equipment, plastics, etc.
- 20:1 standard concentrate mix ratio (20 parts water: 1 part concentrate)
- Used for removing dirt, grease, metal oxides and other contaminants
- Safe, non-toxic, biodegradable, PH neutral & non-flammable
- Does not require ventilation to use

Part No	Description	Weight
10-168	All purpose cleaner concentrate 3.7L bottle	3.6kg
10-194	All purpose cleaner concentrate Case 6 x 3.7L bottles	22.2kg
10-195	All purpose cleaner concentrate 19L Drum	18.2kg



10-168



10-195

### Powerclean Concentrate

Part No: RPC15

- Powerful degreaser/ cleaner detergent, ideal for cleaning rubber product, soak goods for best results



Gloves and sleeves should be stored in a dedicated bag to protect them from light and products that may cause contamination. A clean dry moisture free environment is important. Rubber products should not be stored folded, creased, bent or in any way that would allow them to be stretched or compressed.

**TEN** custom manufacture  
a range of Australian  
Made glove bags



## RESCUE KITS & LIVE WORKING EQUIPMENT

### Low Voltage Switchboard Rescue Kits

Part No: LVRK-F & LVRK-P

- Complete low voltage switchboard rescue kit
- Fibreglass or plastic rescue hook

Description	LVRK-P	LVRK-F
Gloves Pair - 1000V Class "0"	✓	✓
Rescue Hook – Plastic	✓	✗
Rescue Hook – Fibreglass	✗	✓
Torch - Weatherproof	✓	✓
Blanket – Fire	✓	✓
Dressing – Trauma	✓	✓
Tag – "Isolate Here In Emergency"	✓	✓
Bag – Carry Case (Orange or yellow)	✓	✓
Weight (kg)	3	3



### High Voltage Switchboard Rescue Equipment

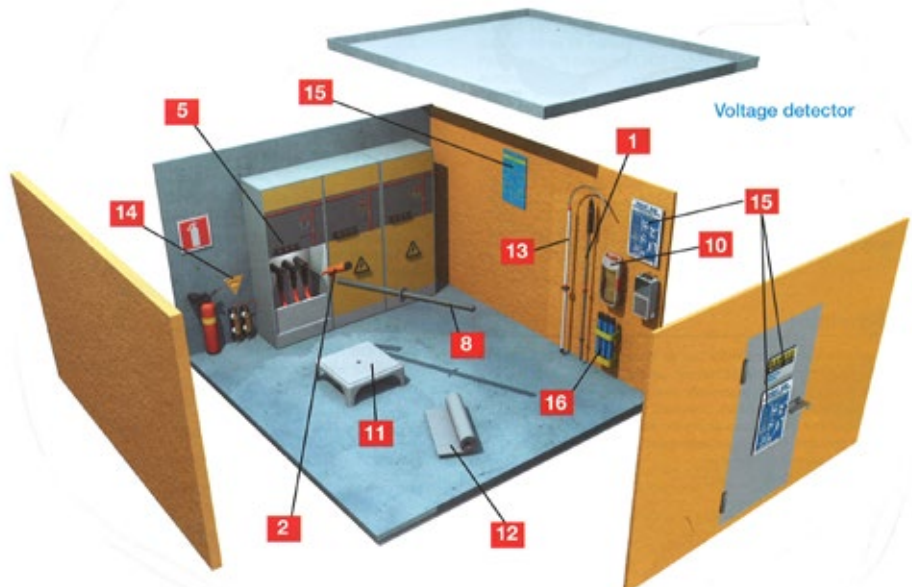
Part No: SBRKITHV

- INCLUDES 17kV Gloves & 45kV Crook
- Supplied to customer requests specifications
- Other components & kits available upon request
- Contact TEN for more information

Example Items
Gloves Pair – Rated over working voltage (5, 10, 20, 30 & 40kV available)
Rescue Hook – Rated over working voltage (5-225kV available)
Torch - Weatherproof
Blanket – Fire
Dressing – Trauma
Tag – "Isolate Here In Emergency"
Mat – Insulating Rubber Ground (5, 10, 20, 30 & 40kV available)
Suit – Arc Protective
Shield – Face, Arc protective
Platform – Insulating (Indoor or outdoor, 24-63kV available)
Bag – Carry Case (Made specifically to suit components) *

\* Minimum order quantities may apply

**Example Application:  
Substation with semi-automatic switchgear and metalclad switchgear**



## LIVE WORKING TOOLS

### General Information

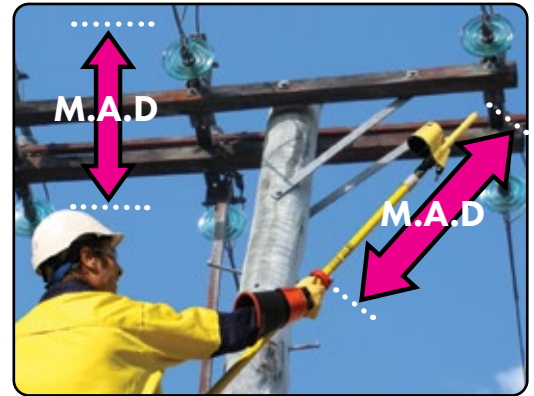
Live working tools are generically fibreglass tubes with solid unicellular foam filled cores. In most cases factory tested to 100kV/300mm of insulation. Where stated the sticks comply with ASTM F7-11, IEC 60855 or OSHA standards. Minimum approach distances for Australia and New Zealand are stipulated by AS 5804, the actual distance is ultimately determined and specified by the local network provider.

A live line tool only achieves its insulation rating when the stick surface is clean, free of moisture, in good condition and hydrophobic. Hydrophobic means tending to repel and not absorb water.

### Approach & Insulation Distance Information

**MAD** = Minimum Approach Distance is the minimum air gap or summation of air gaps measured between any part of the operator and live electrical apparatus.

Detailed information can be found in AS 5804 and a small extraction from this standard is below for minimum standard distances based on ideal circumstances.



Live Working Recommended Minimum Distances at a Glance <sup>1</sup>			
	Nominal Voltage AC	Minimum Approach Distance (MAD)*	
		Phase to Earth	Phase to Phase
<b>Auto-reclose</b>		<b>OFF</b>	<b>OFF</b>
<b>Distance</b>			
	11kV	350mm	400mm
	22kV	400mm	500mm
	33kV	450mm	550mm
	50kV	550mm	700mm
	66kV	600mm	800mm
	88kV	700mm	1000mm
	110kV	800mm	1200mm
	132kV	900mm	1300mm
	220kV	1300mm	2000mm
	275kV	1600mm	2400mm
	330kV	1900mm	3000mm
	400kV	2400mm	3900mm
	500kV	2400mm	3900mm

<sup>1</sup>This table information is for reference only and is incomplete. Subject to numerous contributing factors such as environmental, etc. Refer to local network providers and AS 5804 standard for specific area regulations.

\* Based on minimum 300mm ergonomic distance

**References: AS 5804**

### Tool Ratings



Recommended voltage ratings of products within this catalogue section should be used as a guide only. The product specifications are mainly to US (OSHA and ASTM) standards which may not be applicable to your situation. Contact your local network provider for specific clearances required.

### Handguards & Warning Markers

Australian standard AS 5804 states that "clearance markers shall be placed on hand sticks to define the insulated section and define the separation from the hand held section". It also states that the "markers shall be secured to the live work stick to prevent their movement".

TEN can provide a range of marker and handguard solutions. The A30002 and A30003 from Hastings are the most popular as they are a safety red colour.



## SECTIONAL & FIXED LENGTH STICKS

### Sectional Sticks

Part No: Various

- Sectional sticks
- Foam filled tested per OSHA, ASTM F-711
- 32mm OD sticks tested to IEC 60855



Universal Head w/ Removable Base Adaptor					Extension Section					Base Section with Glued Rubber Base Cap				
Length	OD 32mm	Wt (kg)	OD 38mm	Wt (kg)	Length	OD 32mm	Wt (kg)	OD 38mm	Wt (kg)	Length	OD 32mm	Wt (kg)	OD 38mm	Wt (kg)
0.6m	5467-2	0.47	-	-	0.6m	546-2	0.45	-	-	0.6m	-	-	-	-
1.2m	5467-4	0.90	5547-4	1.08	1.2m	546-4	0.56	5546-4	0.90	1.2m	552-4	0.68	5553-4	0.85
1.8m	5467-6	1.07	5547-6	1.56	1.8m	546-6	0.93	5546-6	1.39	1.8m	552-6	0.90	5553-6	1.25
2.4m	5467-8	1.41	5547-8	2.04	2.4m	546-8	1.13	5546-8	1.87	2.4m	552-8	1.30	5553-8	1.64

### Fixed Length Sticks

Part No: Various

Universal Head each End – Circular with Hanger Hook					Severe Weather Tool with 2 Rain Sheds* and Hanger Hook					Universal Head each End – Triangular with Hanger Hook		
Length	OD 32mm	Wt (kg)	OD 38mm	Wt (kg)	Length	OD 32mm	Wt (kg)	OD (mm) 38	Wt (kg)	Length	OD 28mm	Wt (kg)
1.2m	4678-4	1.27	-	-	1.2m				-	1.2m	-	-
1.8m	4678-6	1.47	-	-	1.8m	6801	1.45		-	1.8m	4679-6	1.45
2.4m	4678-8	1.86	4680-8	2.59	2.4m	6802	1.81		-	2.4m	4679-8	1.72
3.0m	4678-10	2.25	4680-10	2.90	3.0m	6803	2.18		-	3.0m	4679-10	1.90
3.6m	4678-12	2.63	4680-12	3.72	3.6m	6804	2.54	6811	3.22	3.6m	4679-12	2.13
4.2m	-	-	4680-14	4.54	4.2m	-	-	6812	3.54			
					4.8m	-	-	6813	3.95			
					5.4m	-	-	6814	4.36			
					6.0m	-	-	6815	4.72			

### Hand Guards

Part No: A3000 Series

- High visibility safety red for visual warning of approach distance
- Provides handguard or barrier
- Split and double flat head screw design makes installation easy
- A30002 suits shotgun operating rod
- Non-conductive delrin

Part No	Suits Stick OD (mm)
A30002	32
A30003	38
A30005	50



Also Available  
Telescopic Sticks

**LV BLANKETS**

**Rubber Insulating Mats/ Blankets**

**Part No: TENM Series**

- Rubber insulating material:
  - Highly visible yellow and orange
  - 2 colours assist in visual damage identification
  - Flame resistant, self extinguishing
  - Type II - Oil, ozone & UV resistant
  - Fabric reinforced, puncture & tear resistant
  - Manufactured to ASTM F2320
- Substation drapes have reinforced eyelets
- Line, Link, Cross arm & catenary covers have industrial velcro fastenings
- Working voltage 650V
- US Class 1
- ID patch colour to easily identify each mat located on the yellow side of each mat
- Special sizes and rolls available upon request from TEN

*Extremely lightweight & flexible*



TENM103

TEN LV Blankets feature detailed manufactured information tags

MANUFACTURED TO  
**ASTM F2320**  
SUITABLE FOR USE AS  
**CLASS 00 TYPE II**  
FOR LV USE ONLY

DO NOT USE IF WORN OR DAMAGED

Work Order .....

Product Code .....

DOM .....

Date tested .....

Next test due .....

Next test due .....

TEN Group Australia  
07 3212 8999 | tengroup.com.au

Image	Part No	Description	Dimensions	ID Colour Patch
	TENM101	Line Cover	1200 x 225mm Drop	Red
	TENM103	Line Cover	600 x 225mm Drop	Green
	TENM104	Link Cover	700 x 900mm 400mm Split	White
	TENM111	Link Cover	850 x 900mm 430mm Split	Yellow/Red
	TENM102	Cross Arm Cover	1200 x 450mm 125mmW x 100mmD Cut	Light Blue
	TENM105	Substation Drape	900 x 1800mm	Orange
	TENM106	Substation Drape	225 x 315mm	Beige
	TENM107	Substation Drape	315 x 450mm	Black
	TENM108	Substation Drape	450 x 600mm	Brown
	TENM110	Substation Drape	900 x 1800mm	Yellow
	TENM112	Substation Drape	900 x 910mm	Green/ Dark Blue
	TENM109	Catenary Cover	1200 x 4500mm 30mmW x 200mmD Cut	Dark Blue



ID patch colour to easily identify each mat  
TENM103 - Green ID Patch

**Rolls of insulating blanket material available upon request. Also available in clear. Contact TEN for more information.**

**Need a storage solution?**

**Zipped Canister Bag - PVC**

**Part No: TENM433**

- PVC canister red, with internal PVC tubing
- Made from heavy duty PVC (flame retardant, mildew & UV resistant)
- Zipped lid with wide opening
- Webbing carry handle
- 760mmH x 100mmØ
- Weight 0.8kg



LV Blanket not included



Blankets should be rolled up or laid flat as per standard, not folded. Contact TEN for a wide range of storage solutions.



## COVERUP ACCESSORIES

## Blanket Pegs

- Non conductive pegs for clamping blankets and covers

Part No	Material	Description	Length	Jaw Opening Max	Weight
21	Nylon body with metal spring and soft tip rubber end boots	Standard, 2 conductor holes, used to keep line guards from sliding on conductor	240mm	130mm	0.1 kg
A30322		Shotgun Model, 2 conductor holes, used to keep line guards from sliding on conductor with shotgun rings.	240mm	130mm	0.1 kg
C2	Maple Wood with metal spring	Standard	255mm	200mm	0.3kg
CNS3		Slip resistant coating	350mm	255mm	0.5kg
CNS4			375mm	340mm	0.7kg



## MATS

## Rubber Ground Mats

- Rubber insulating mats
- Non slip surface texture
- Supplied with test report and tag
- Special lengths available on request



Part No	Working Voltage	Standard	ASTM Class	Dimensions	Thickness	Weight
MAT-00-1000X6R*	650V	AS/NZS 2978-1995	00	1000 x 1000mm	6mm	9.5kg
MAT-2-1000X6R	17kV	ASTM D178-88	2		6mm	9.5kg
MAT-3-1000X9.5	26.5kV		3		9.5mm	13.0kg
MAT-4-1000X12R	36kV		4		12mm	19.0kg

\*AS/NZS Class A type mat (Also available Class B type mat 3mm thick rubber, for smooth surfaces only)

## Cable Jointer

- Rubber insulating mat with pillar cut out
- Non slip surface texture
- Supplied with test report and tag
- Special lengths available on request



Part No	Working Voltage	Standard	ASTM Class	Dimensions	Thickness	Weight
MAT-00-1.5/.9X6R	650V	AS/NZS 2978-1995	00	1500 x 900mm	6mm	11.2kg

**HYDRAULICS**

**Lower cost of ownership with Klauke tools:**

- **Faster crimping - greater productivity**
- **22 min battery charge time - fewer batteries on trucks**
- **Batteries half the price of competitors**
- **Smart engineering and design - Easy and faster servicing**



- Easy one button operation
- Auto retraction stop
- LED illuminates work area
- Red LED & acoustic signal in case of failure
- Intelligent tools that increase productivity
- Makita 18V lithium-ion battery



**Cutting**

TECHNICAL	ES-20-LAU	ES-32LAU	ESG-25-LAU
Cuts	ACSR, Al, Cu, Steel Rope	Al, Cu	ACSR, Al, Cu, Steel
Cutting Range	20mm	32mm	25mm
Cutting Force	25kN/ 2.5 Ton	13kN/ 1.3 Ton	50kN/ 5 Ton
Weight incl. Battery	2.0kg	2.0kg	2.1kg



**Cutting**

ESG-45-LAU / ES-45LAU	ESG-85-LAU / ES-85LAU	ESG-105-LAU / ES-105-LAU
ACSR, Al, Cu, Armoured, Steel (20mm <sup>2</sup> )	Al, Cu, Light Armoured Al/ Cu	Al, Cu, Light Armoured Al/ Cu
45mm	85mm	105mm
60kN/ 6 Ton	30kN/ 3 Ton	120kN/ 12 Ton
5.7kg	7.2kg	10.3kg





**HYDRAULICS**

**Crimping**



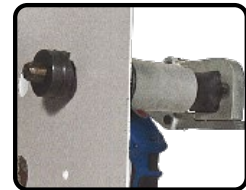
**No.1 SELLER**



TECHNICAL	EK-425-LAU	EK-12042-LAU
Crimps	Cu, Al 240mm, ACSR 185mm	Cu 400mm, Al 240mm
Crimping Force	50kN/ 5 Ton	120kN/ 12 Ton
Opening	Stroke - 40mm	Jaw - 42mm
Head Rotation	360°	360°
Weight incl. Battery	2.6kg	6.8kg



Die Type



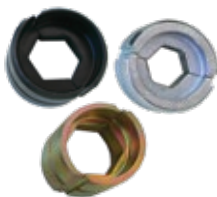
**Multi Tools**

TECHNICAL	EKM60UNV-L	EK-120UNVC-LAU
Cuts	ASCR, Al, Cu, Armoured	ASCR, Al, Cu, Armoured, 13mm Steel Rod, 15mm Guy Wire
Cutting Range	25mm	40mm
Crimping Force	60kN/ 6 Ton	108kN/ 10 Ton
Crimp range (Cu/Al)	300 / 240mm <sup>2</sup>	400 / 300mm <sup>2</sup>
Punching Capacity	up to 64mm round up to 92mm x 92mm	up to 144mm round up to 138mm x 138mm
Weight incl. Battery	3.0kg	6.3kg

**6 Tonne Dies**

**Part No: Various**

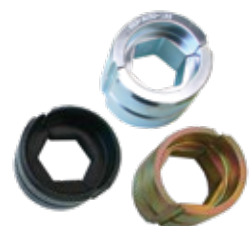
- Crimping dies to suit 6 Tonne hydraulic battery and hand crimpers (Klauke EK425, EK60UNVCC and HK6022)
- Aluminium, Copper & ABC
- Commonly referred to as "C" or "U" type dies
- Dies colour coded for easy identification



**12 Tonne Dies**

**Part No: K12 Series**

- Crimping dies to suit 12 Tonne hydraulic crimpers
- Aluminium, Aluminium OH, Copper, Copper OH, ABC
- Commonly referred to as "C" or "U" type dies
- Dies colour coded for easy identification



**HYDRAULICS**

**Hydraulic Drive Unit 700bar**

**Part No: AHP700L**

- Compact and lightweight design for mobile field application
- Suitable for operating single acting crimping and cutting tools of 700 bar
- Selector switch for crimping, cutting and punching operations
- Fibreglass reinforced polyamide shock proof housing
- Large display indicates function selection, pressure readings, battery condition and diagnosis information
- Automatic retraction
- Remote control with cable for easy operation
- All high pressure hoses are supplied with coupling plug and coupling sleeve, filled with oil
- Two powerful Makita 18V Li-Ion batteries
- Cushioned shoulder strap for optimum wearing comfort



Drive unit with press head



Drive unit with cutting head



**Crimping**

TECHNICAL	PK12042PC	PK252C	PK45
Force	130kN/ 12 Ton	222kN/ 25 Ton	450kN
Head Rotation	360°	360°	360°
Capacity	Al 300mm <sup>2</sup> , Cu 630mm <sup>2</sup>	Al 500mm <sup>2</sup> , Cu 630mm <sup>2</sup>	120 - 1000mm <sup>2</sup>
Length	302mm	335mm	265mm
Weight	4.4kg	5.3kg	10.3kg



Scissor Head also available (images right)



SDK85



SDK105

**Cutting**

TECHNICAL	SDG45C	SDG85C	SDG105
Force	60kN/ 6 Ton	60kN/ 6 Ton	120kN / 12 Ton
Head Rotation	360°	360°	360°
Capacity	ASCR, Al, Cu, 40mm <sup>2</sup> Guy Wire 18mm <sup>2</sup> ReBar, Grounds & Anchor Rods 16mm <sup>2</sup>	Al, Cu, 85mm <sup>2</sup>	Al, Cu, 105mm <sup>2</sup>
Length	340mm	445mm	432mm
Weight	4.2kg	4.2kg	8.3kg



## LOW PRESSURE HYDRAULICS

### Crimping Head 12T

**Part No: LPK1240**

- No high pressure intensifier required
- Crimps up to 750 MCM copper and aluminium
- Relief valve signals operator when crimp is complete
- Operates on Open- or Closed-Centre hydraulic systems
- Capacity (jaw opening): 42mm
- Open- and Closed-Centre
- Length: 515.6mm, Width: 139.7mm
- Operating Pressure: 1,500 - 2,500 psi (103 - 172 bar)
- Crimping Force at 1,500 psi (103 bar): 106.8 kN
- Flow Rate: 11 - 34 lpm



### Drill Socket Adaptors

**Part No: REL-1137-P**

- High strength socket adaptor for impact drill
- Spring lock pin
- 7/16" hex shank with lock groove

Part No	Specifications	Weight
REL-1137-P	7/16" Shank to 1/2" Drive	0.05kg



### Hydraulic Impact Drill

**Part No: REL-425CG-TEN**

- Lightweight aluminium alloy construction
- Feather trigger allows control of speed
- Ergonomic balanced design with finger moulds in trigger
- Easily changeable forward/reverse push shaft
- EZ selector valve allows change between open and closed centre systems without tools
- Supplied with trigger guard and flush face couplers
- Heat insulated handle



### Pole Saw

**Part No: REL-LR Series**

- Powerful hydraulic drive motor
- EZ selector valve allows change between open and closed centre systems without tools
- Foam filled fibreglass shaft to prevent ingress of moisture and provide additional electrical safety protection
- Every saw supplied electrically tested with report
- Trigger guard, sprocket guard, rubber hand guard and scabbard
- Meets OSHA 1910.269
- Flush face couplers fitted



### Low Pressure Hydraulic Hose

**Part No: REL2250 Series**

- Twin low pressure flexible hydraulic hose
- Clear strain relief sleeve over crimped connections
- Manufactured for use in extreme temperatures -40°C to 100°C
- Certified non-conductive rubber
- Impulse tested higher than SAE requirements
- Supplied with flush face couplers both ends
- Neoprene inner tube with nitrile outer, reinforced two textile braid



Protective Dust Caps Included

### Intensifier

**Part No: REL10 Series**

- Change low pressure hydraulic source to high pressure without electricity
- Single, Double and Single/Double acting units available
- 12 moving parts provide smooth and efficient operation
- Can be permanently mounted



<b>Dimensions</b>	114 H x 133 L x 108 Wmm
<b>Specific Features</b>	Foldable Carry Handle, Supplied with Nylon Bucket Holder
<b>Acting Type</b>	Double
<b>Systems</b>	Open or Closed
<b>Drive Type</b>	Internal Gear
<b>Pressure</b>	800-2,200 PSI
<b>Flow</b>	12-30L/min
<b>Optimum Operating Pressure</b>	1,800 PSI
<b>Weight</b>	4.5 kg

## SPECIALISED HANDTOOLS

### Derancourt 1000V Insulated

Insulated hand tools used for live work or working close to live working parts, with a nominal voltage up to 1000VAC and 1500VDC.

Derancourt insulated hand tools comply with international standard IEC/EN 60 900 and are marked accordingly.

#### Thermal Stability

Insulated hand tools are designed to be used between -20°C and +70°C.



### Explosive Environment Tools

Insulated hand tools used for explosive environments certified to standard NF E 74-400.

The production of sparks is greatly reduced following rubbing or physical shocks to which the tools are subjected.



### Anti-Spark Tools

Constructed from aluminium bronze alloy or a copper beryllium alloy. The anti-spark characteristic means that these alloys produce, in contact with materials, sparks with a lower energy level than the minimum energy required for the information of the air + gas mix.



**EXTENSIVE RANGE OF TOOLS AND EQUIPMENT**

**Voltage Detection**



**Phase/ Motor Rotation**



**Insulation Testing**



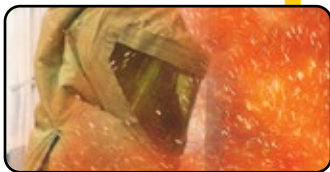
**Portable Earthing**



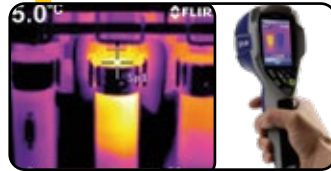
**Cable Preparation**



**Arc Flash**



**Thermal Imaging**



**Earth Testing**



**Electrical Discharge**



**Cable Cutting**



**Cable Handling**



UTILITY SPECIFIC TOOLS

Strippers, Rippers & Sheath Strippers

Image	Part No	For	Type	Suits Cable	Features	Spare Blade #	Wt (kg)
	SES3051	Various	Sheath Stripper	Various	Retractable blade for lengthwise cut Polyamide Insulated handle Cut depth 3.5mm, 170mm length	SES3051-B	0.1
	HRIPS	Various	Sheath Ripper	Various	For safe removal of outer sheaths, blade has blunt mushroom head which stops damage to inner core	HRIPS-B	0.2
	HRIPS-LV	LV	Sheath Ripper	LV	For safe removal of outer sheaths, fine cut tear drop head, blade has blunt mushroom head which stops damage to inner core	HRIPS-LV-B	0.2
	AM1	Various	Sheath Stripper	4.5-25mm Ø	Circular and longitudinal cutting, auto-tensioning stirrup with cutting depth thumbscrew adjuster, replacement blades inside handle. 135mm long	AM1-B	0.1
	AM2	Various	Sheath Stripper	25-36mm Ø	Circular and longitudinal cutting, auto-tensioning stirrup with cutting depth thumbscrew adjuster, replacement blades inside handle. 140mm long	AM2-B	0.1
	R3840	Various	Sheath Stripper	8-28mm Ø	Circular and longitudinal cutting, adjustable cutting depth by thumbwheel, replacement blade in handle. 130mm long	-	0.1

Cable Strippers

Part No: PBT Series

- Plier type strippers, circular/longitudinal cutting with end ripping blade
- Replaceable cutting blades



Circular Cut



Lengthwise Cut



Stripping of Sheath



Three Styles Available:

PBT	PBT.I	PAD

Two Models Available:

A	B

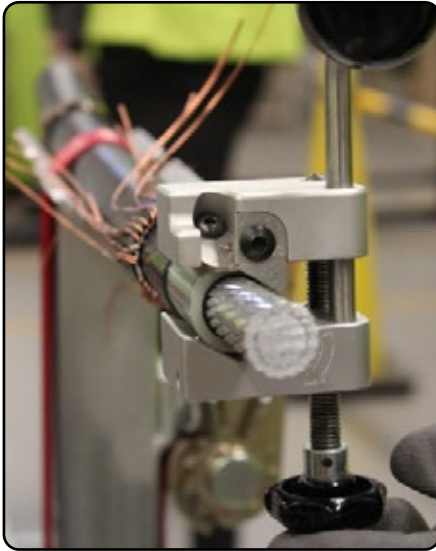


## STRIPPING TOOLS

## Multifunction Strippers

Part No: POLY &amp; OUT Series

- Colour coded for fast identification
- Large knobs for opening/closing jaws and offsetting tool
- Locknut on opening/closing knob for maintaining position
- Blade direction lever and knurled cutting depth knob
- Directional markings on body
- Stainless steel and aluminium alloy construction



Part No	Image No	Mechanical Protection Removal	Sheath Strip	Insulation Strip	Semi-Con Removal	Semi-Con Machining	Semi-Con Scoring
POLYDT	1	✓	✓	✓			
POLY	1	✓	✓	✓			
POLYSCP	2		✓	✓			✓
POLYSCNP	3		✓	✓		✓	
OUTSCPNPDT	4				✓	✓	✓
OUTSCPNP	4				✓	✓	✓
OUTSCP	5				✓		✓
OUTSCNP	6					✓	



Part No	Capacity (mm <sup>2</sup> )		Suits Cable	Retractable Stop (mm)	Dimensions (mm)	Spare Blade #
	Min	Max				
POLYDT	50	630	All (XLPE/EPR)	20-110 (Adjustable)	260 x 125 x 100	LAMEPOLYDT LYDT
POLY	35	630	All (XLPE/EPR)	20-110 (Adjustable)	260 x 125 x 100	LAMEPOLY
POLYSCP	35	630	All (XLPE/EPR)	25-55	260 x 125 x 90	LAMEPOLYDT (Sheath/Ins) LAMEOUTSCP (Semi)
POLYSCNP	35	630	All (XLPE/EPR)	-	260 x 125 x 100	LAMEPOLYDT (Sheath/Ins) LAMEOUTSCNP (Semi)
OUTSCPNPDT	50	630	All (XLPE/EPR) All semi-con	-	260 x 125 x 100	LAMEOUTSCPNPDT
OUTSCPNP	35	630	All (XLPE/EPR) All semi-con	-	260 x 125 x 100	LAMEOUTSCPNP
OUTSCP	35	630	All (XLPE/EPR)	25-55	260 x 125 x 100	LAMEOUTSCP
OUTSCNP	35	630	-	25-55	260 x 125 x 100	LAMEOUTSCNP

# CABLE HANDLING

# TENHIRE

*Our Fleet, Your Projects.*

Australia's best supported & largest range of specialised stringing machinery



TRANSMISSION / DISTRIBUTION / OVERHEAD / UNDERGROUND

www.tengroup.com.au | Phone : 07 3212 8999

## Cable Handling



## Underground Rollers



Plastic Cable Roller

Roller Cage for 14211

Rodding Equipment

Steel Cable Roller



Electrical Safety





## TOOL & EQUIPMENT STORAGE

### Part No: TENM203

- "Classic" tool bucket, red
- 2 open, external PVC pockets with bound edges
- Made from durable tear stop canvas and PVC
- Rope handle, fixed one end and s/steel snap hook the other

Pockets	Dimensions (mm)	Weight
2 External	280 Ø x 350 (H)	1kg



### Canvas Tool Buckets

#### Part No: TENM206

- Oval shaped tool bucket, red
- 14 internal tool pockets, 9 external tool pockets, 1 large with velcro flap
- Made from durable tear stop canvas and webbing
- Detachable webbing shoulder strap and 2 x s/steel gate hooks
- Plastic base insert

Pockets	Dimensions (mm)	Weight
14 Internal, 10 External (1 Large)	400 (L) x 240 (W) x 260 (H)	1.3kg



### Equipment Bag - PVC

#### Part No: TENM511

- Made from strong, lightweight 600gsm, tear proof PVC, orange
- Internal document pocket, 3 external box pockets
- Movable compartment walls (velcro)
- Fold over velcro flap
- Webbing handle & bound edges

Dimensions (mm)	Weight
460 (L) x 290 (H) x 130 (W)	1kg



**Safely stores all your general test equipment**



### Equipment Bag - PVC

#### Part No: TENM407

- Made from strong, lightweight 600gsm, tear proof PVC, orange
- 6 adjustable internal pockets (velcro)
- Clear internal document pocket (in lid)
- Clear external identity pocket
- Velcro waterfall flap over heavy duty double lock easy slide zip
- Webbing shoulder strap & bound edges

Dimensions (mm)	Weight
440 (L) x 330 (H) x 230 (W)	1.5kg

### Tool Roll - PVC

#### Part No: TENM434

- PVC Tool roll, red
- Made from heavy duty PVC (flame retardant, mildew & UV resistant)
- Easy securing/opening velcro fastening strap
- 9 pockets to separate and protect tools
- Bound edges

Dimensions (mm)	Weight
540 (H) x 440 (W)	0.2kg



Tools not included





**TOOL & EQUIPMENT STORAGE**

**Equipment Bag - PVC - Water Resistant Bags**

- Designed to carry PPE/ Asbestos gear
- Made from heavy duty PVC (flame retardant, mildew & UV resistant)
- **High frequency welded seams provide water resistance**
- Internally reinforced base corners
- Velcro waterfall flap over heavy duty double lock easy slide zip
- Webbing handles & bound edges
- Double lock easy slide zip
- Plastic base insert



**High frequency welded seams provide water resistance**

**Water Resistant Welded Seams**



Part No: TENM516

Part No: TENM510  
Webbing shoulder strap with 2 s/steel snap locks (detachable)  
Plastic base insert

Part No: TENM517  
ASBESTOS KIT screened onto bag lid

Part No: TENM508  
Webbing shoulder strap with 2 s/steel snap locks (detachable)

Part No	Colour	Dimensions (mm)	Weight	Features
TENM510	Blue	740 (L) x 360 (W) x 330 (H)	2kg	Detachable Shoulder Strap
TENM516	Blue	740 (L) x 360 (W) x 330 (H)	2kg	No Shoulder strap
TENM517	Yellow	740 (L) x 360 (W) x 330 (H)	2kg	ASBESTOS screen print on lid of bag, no shoulder strap
TENM508	Dark Blue	550 (L) x 330 (W) x 330 (H)	2kg	Detachable Shoulder Strap

**Equipment Bag - Barrel, PVC**

- PVC Equipment bags, red
- Made from heavy duty PVC (flame retardant, mildew & UV resistant)
- Designed to carry PPE
- Weatherstrip over heavy duty double lock easy slide zip
- Webbing handles
- Clear ID pocket on bag exterior



Part No: TENM513

Part No: TENM512

Part No	Dimensions (mm)	Weight
TENM513	800 (L) x 380 (Ø)	1kg
TENM512	650 (L) x 380 (Ø)	0.7kg



Part No: TENM506

**Equipment Bag - Barrel, Canvas**

- Canvas Equipment bags, red
- Made from durable tear stop canvas (UV & mould resistant)
- Designed to carry PPE
- Weatherstrip over heavy duty double lock easy slide zip
- Webbing handles
- Clear ID pocket on bag exterior

Part No	Dimensions (mm)	Weight
TENM506	800 (L) x 380 (Ø)	1kg
TENM518	650 (L) x 380 (Ø)	0.7kg



## TOOL & EQUIPMENT STORAGE



### Equipment Bag - Small, PVC

Part No: TENM514

- PVC mini tool bag, red
- Ideal for range of ABC tools
- Made from heavy duty PVC (flame retardant, mildew & UV resistant)
- Fold over velcro flap & webbing handles
- Bound edges



Dimensions (mm)	Weight
270 (L) x 100 (W) x 100 (D)	0.8kg

### Equipment Pouch - PVC

Part No: TENM417

- Strong, lightweight 600gsm, tear proof PVC, orange
- Large zipped opening
- Webbed loops
- Clear face panel to easily view contents
- Reinforced base

Dimensions (mm)	Weight
290 (H) x 165 (W) x 85 (D)	0.1kg



Tool not included

**Ideal for multimeters, clamp on meters or other hand held test equipment**

### Equipment Pouch - Canvas

Part No: TENM404

- Canvas pouch, red
- Made from durable tear stop canvas (UV & mould resistant)
- Designed for LT-220 LiveTester
- Internal velcro seal at top of bag
- Webbing pull loops to easily open
- Bound edges

Dimensions (mm)	Weight
200 (W) x 340 (H)	0.2kg



Tools not included

## DOCUMENT STORAGE

### Document Bag - PVC

Part No: TENM706

- Made from heavy duty red PVC (flame retardant, mildew & UV resistant)
- Excellent for manuals and daily operational check lists attached to equipment
- 1 internal pocket protected by outer covering of PVC
- Large easy slide zipped opening on internal pocket
- Velcro securing flap
- 4 eyelets & adhesive velcro back mount (hook & loop)
- Bound edges

Dimensions (mm)	Weight
520 (L) x 370 (W)	0.4kg



TENM706 with 4 eyelets and adhesive velcro back mount



**Document Bags easily attach manuals and daily checklists to machinery**



Internal zipped pocket



Adhesive velcro back and eyelets

**Our diversity is your solution.**

**PORTABLE EARTHING**

**Full Range of Earthing Systems and Accessories**



**Custom built to your requirements**

**MULTIMETERS**

**Electrical Testers**

- Certified to IEC, CE and UL/cUL or CSA requirements
- Limited lifetime warranty

Feature	CSJ-100
VDC (Max)	1000
VAC (Max)	1000
AAC (A Max)	200
Continuity & Beeper	•
Resistance	•
Data Hold	•
Display Type	DIGITAL
Measurement Category	III 1000V / IV 600V
UL/cUL	•
CE	•
Accessories Included	2 x AAA Batteries, Test Leads & Case
Other Features	Auto Off, Data Hold, 2000 Count LCD, Open Jaw Resistance >20 Meg-Ohms



CSJ-100



**Non-Contact Self-Testing Voltage Detector**

**Part No: GT-11**

- Fast, easy non-contact voltage detection 50V-1000VAC
- Frequency 50-500Hz
- Bright LED and audible alarm if voltage is present
- ON/OFF switch for longer battery life
- Use to detect the presence of voltage at outlets, lighting fixtures, circuit breakers, wires, and cables or to find a break in a wire
- Comfort grip to ease fatigue
- Convenient pen size fits into pocket or tool pouch
- Replace AAA batteries quickly by pressing the release lever and twisting the top of the tester
- Cat IV, 600V per IEC 61010-1; Cat III, 1000V per UL 3111-1



## MULTIMETERS

### Multimeters

Part No: DM-830A

- Limited lifetime warranty
- Add "-C" to Part Number to include Certificate of Calibration

<b>True RMS</b>	AC & DC	<b>Frequency</b>	•
<b>DCA (A max)</b>	10	<b>Frequency response (Hz)</b>	40-500
<b>Maximum resolution (µA)</b>	0.1	<b>Temperature Measurement</b>	Dual
<b>Best accuracy (%)</b>	0.2	<b>Display type</b>	Dual Digital
<b>ACA (A max)</b>	10	<b>Display update X/sec</b>	5
<b>Maximum resolution (µA)</b>	0.1	<b>Count (1000)</b>	10
<b>Best accuracy (%)</b>	0.6	<b>Backlit</b>	•
<b>DCV (V max)</b>	1000	<b>Analog bar graph (segments)</b>	41
<b>Maximum resolution (µV)</b>	10	<b>Analog update X/sec</b>	60
<b>Best accuracy (%)</b>	0.06	<b>PC Interface</b>	USB
<b>ACV (V max)</b>	1000	<b>Auto and manual ranging</b>	•
<b>Maximum resolution (µV)</b>	10	<b>Auto power off</b>	Intelligent
<b>Best accuracy (%)</b>	0.5	<b>Low Impedance, Auto Check</b>	•
<b>Resistance (MΩ)</b>	60	<b>Beep jack input error warning</b>	•
<b>Maximum resolution (mΩ)</b>	100	<b>Peak (Crest) hold - Max, min</b>	•
<b>Best accuracy (%)</b>	0.1	<b>Data hold</b>	•
<b>Conductance</b>	•	<b>Min, max, avg</b>	•
<b>Continuity and beeper</b>	•	<b>Relative offset mode</b>	•
<b>Diode test</b>	•	<b>Duty cycle</b>	•
<b>Capacitance</b>	•	<b>Measurement Category</b>	IV 1000V



### Clamp On Meters

- Limited lifetime warranty
- Add "-C" to Part Number to include Certificate of Calibration



FEATURE	CMGRT-100	CMI-200	CM-1550	CM-1350	CMT-90	CM-410
<b>True RMS</b>		•	•	•	•	
<b>DCA (A max)</b>		2500	1000			
<b>Maximum resolution (A)</b>		0.1	0.1			
<b>Best accuracy (%)</b>		1.5	1.2			
<b>ACA (A max)</b>	30	2100	1000	1000	600	400
<b>Maximum resolution (A)</b>	1mA	0.1	0.1	0.1	0.1	0.1
<b>Best accuracy (%)</b>	2.5	1.5	1.9	1.9	1.9	1.9
<b>DCV (V max)</b>		600	1000	1000	1000	600
<b>Maximum resolution (V)</b>		0.1mV	0.1	0.1	0.1	0.1
<b>Best accuracy (%)</b>		1.5	0.7	0.7	1.0	1.0
<b>ACV (V max)</b>		600	750	750	1000	600
<b>Maximum resolution (V)</b>		0.1mV	0.1	0.1	0.1	0.1
<b>Best accuracy (%)</b>		1.5	1.0	1.0	1.5	1.5
<b>Resistance (Ω)</b>	1200	40M	400	400	2000	20M
<b>Maximum resolution (Ω)</b>	0.01	0.1	0.1	0.1	0.1	0.1
<b>Best accuracy (%)</b>	1.5	1.5	1.0	1.0	2.0	0.7
<b>Continuity and beeper</b>		•	•	•	•	•
<b>Diode test</b>		•				
<b>Frequency</b>		•	•	•		
<b>Frequency response (Hz)</b>	47-800	40-1k	50-500	50-500	50-500	50-500
<b>Jaw opening (mm)</b>	32	55	51	47	34	27
<b>Display type</b>	Digital	Digital	Digital	Digital	Digital	Digital

**TEST EQUIPMENT - VOLTAGE DETECTORS**

**Voltage Detector**

Sofamel's range of High Voltage Detectors feature new technology that allows accurate detection from any angle. A red LED light signal and acoustic buzzer indicates when direct contact has been detected. Direct contact detection ensures safe indication even in high conflicting electric field environments.

- Self test function - full circuit, not just lights
- Auto power on with voltage presence / Auto power off after 2 minutes of no voltage presence
- Voltage indicated a visual red LED and 100db@1m acoustic signal
- Acoustic signal exceeds IEC standard to ensure it is heard even when operated at a distance on a stick
- Green LED indicates standby mode
- Indoor and outdoor use
- Universal sunrise fitting suits telescopic and sectional sticks
- Supplied in heavy duty metal case with battery included (9V alkaline)

**Electronic Voltage Detector - Medium Voltage**

Part No	Model	Rated Voltage	Frequency
645220	VT-3/10-U	3 - 10 kV	50 Hz
645225	VT-4/12-U	4 - 12 kV	50 Hz
645230	VT-10/30-U	10 - 30 kV	50 Hz
645235	VT-11/33-U	11 - 33 kV	50 Hz
645240	VT-15/45-U	15 - 45 kV	50 Hz
645245	VT-22/66-U	22 - 66 kV	50 Hz
641113	VTE-5/36-U	5 - 36 kV	50 Hz
641115	VTE-5/66-U	5 - 66 kV	50 Hz



**Electronic Voltage Detector - High Voltage**

Part No	Model	Rated Voltage	Frequency
645162	VT-63/150-U	63 - 150 kV	50 Hz
645172	VT-90/225-U	90 - 225 kV	50 Hz
645182	VT-150/420-U	150 - 240 kV	50 Hz
645184	VT-45/420-U*	45 - 420 kV	50 Hz
645186	VT-225/420-U*	225 - 440 kV	50 Hz



**Proximity Detector**

**Part No: LT220**

- Unique static discriminator technology eliminates non-mains generated electric fields with patented ferro electric detector
- Audible and visual proximity meter
- Selector keypad changes voltage range
- Intermittent beep to indicate when turned on
- Water resistant IP 65 and impact resistant
- Self test function tests internal circuitry
- All models 50Hz
- Universal/shotgun adaptor
- Supplied with canvas bag, also available separately

**Static discriminator**



LT220 Detection Face

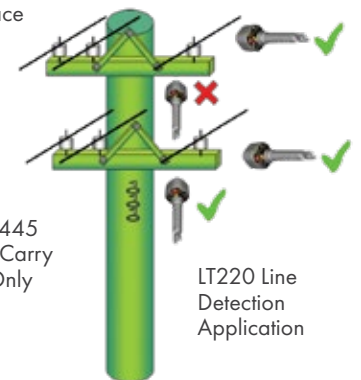
Part No	Voltage Range AC (kV) Contact
LT220	0.24 (240V), 1, 3.3, 6.6, 11, 22, 33, 66, 110, 132, 220

**Kit Details**

Part No	Description	Dimensions (mm) Detector Only	Weight Kit
LT220K	Kit detector with Cancas bag	287 x 85 x 85	0.8kg



TENM445 Canvas Carry Bag Only



LT220 Line Detection Application



## PHASING, VOLTAGE DETECTION & MULTIFUNCTION METERS

### Phasing, Visual & Audible

Part No: AV800AU

- For phasing, phase sequencing and phase angle indication
- For use on 3 phase secondary systems, capacitive test points, URD systems, overhead and transmission substation systems
- Wireless up to 30m, no extension resistors required

**Features**

- Phase capacitive test points & LV across HV
- Phase sequence indicator LED's
- Phase angle indication
- Contact phasing 120v-69kv
- Non-contact phasing 69-800kv, hooks required and sold separately
- Delta/wye indication



Part No	Phasing Range AC Voltage (V)	
	Contact	Non-Contact*
AV800AU	120 – 69,000	69,000 - 800,000*

\* Unit capability with purchase of additional extension hook

<sup>1</sup> CTP = Capacitive Test Points

Voltage Range AC (V)			
Contact, No CTP <sup>1</sup>		Contact, Yes CTP <sup>1</sup>	Proximity
Ø – Ø	Ø – ±		
4,000 – 69,000	4,000 – 69,000	240 – 69,000	240 – 69,000
4,000 – 69,000	4,000 – 69,000	240 – 69,000	240 – 69,000

**Specially made probes and adaptors available for switchgear and other specialty applications**

### Phasing, Voltage Detection & Multifunction

Part No: PD25/50 Series

- Also for voltage detection AC/DC, multiple frequency up to 400Hz
- True RMS accurate to ± 1% (± 5% with extension probes)
- Phase Capacitive Test Points & LV across HV\*
- Shielded twin probes and interconnect cable
- Interconnect cable insulated 35kV, various lengths available
- For use on 3 phase secondary systems, capacitive test points, URD systems, overhead and transmission substation systems
- Voltage regulator neutral detection
- LV-HV Meter with multimeter functionality
- Self test function tests internal circuitry and displays battery voltage
- Adaptors available:
  - Phase sequence/rotation (PA25P5A)
  - DC leakage tester (Lightning arrester tester)
  - High line resistive voltmeter
  - Hi-Pot URD cable
  - DC cable tracer



PD25



PD50

Part No	Voltage Range AC (kV) Contact	
	Ø – Ø	Ø – ±
PD25AU	0 – 25*	0 - 14.4
PD50AU	0 – 50*	0 – 28.9



## DC VOLTMETER

### RCDCAU DC Voltmeter

Part No: RCDCAU

The RCDCAU Digital DC Resistive Voltmeter has a single range of 0 – 2kV. This unit is designed to measure DC voltage.

The unit consists of a meter probe, second probe and connector cable.

The five position selector switch located on the face, controls OFF, ON, and Test. The OFF positions are for storage and transit. The ON position is for measurements from 0 to 1999 volts with one volt resolution. The T position tests basic meter functions and the digital display.



#### General purpose meter that can be used in a variety of applications:

- A General Purpose 0 to 2kV DC Digital Voltmeter
- Designed to confirm the status of electrical systems
- Can be used with higher currents than hand-held models
- A large digital LCD display has a backlight for easy reading
- Both the meter probe and secondary probe have threaded end fittings
- The unit includes three adapters: a hook adapter and two straight adapters
- An 8 foot interconnecting cable is also included
- Meter is water resistant and has a strong construction
- Designed to withstand wear
- The unit is contained in a highly durable carrying case with interior padding

**TEN also supplies these essential insulated gloves and fibreglass sticks for use with these meters.**

## Need a storage solution?



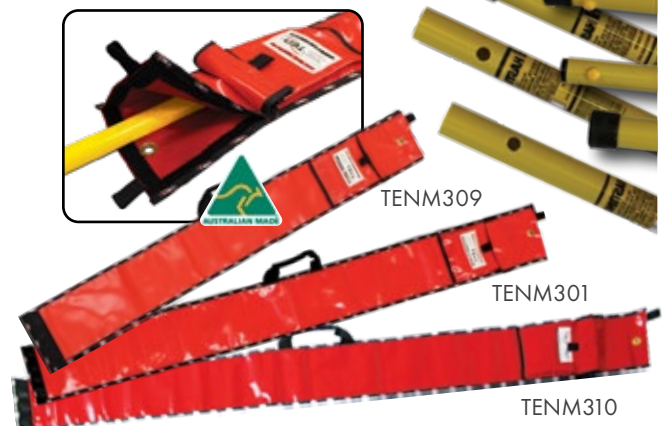
### Glove Bag - Canvas 3 Pocket (LV)

Part No: TENM409

- Traditional loomstate canvas glove bag, white
- 3 pockets: for rubber insulating gloves, protective outers and cotton inner gloves
- Velcro flap and s/steel snap hook to clip to belt
- Supplied with identification tag (key tag)
- Bound edges
- Dimensions 360 (L) x 170 (W) x 220 (D) mm



TENM309



TENM301

TENM310

### Fibreglass Stick Bags - PVC

- Made from heavy duty PVC (flame retardant, mildew & UV resistant)
- Top and side velcro wide opening makes it easy to open and access stick
- Single external accessories pocket with velcro closing
- Reinforced eyelet at top of bags



## DISCHARGE STICKS

### Discharge Stick

#### Part No: 100 Series

- Safely drains capacitive charge after a circuit has been de-energised
- Insulating stick with handguard and rubber end cap
- Stainless steel hook
- Earth lead included
- Supplied with or without clamp
- Stick tested to ASTM F-711
- Discharge limiting resistor sold separately
- Earth cable is copper with yellow neoprene jacket

Part No*	Stick - Length / OD (mm)	Hook - Opening / OD (mm)	Lead Length	Weight (kg)
A1004-CLCM	600 / 32	34.9 / 6.35	1.8m	1.2
A1005-CLCM			2.4m	1.4
A1006-CLCM			3.0m	1.7
A1007-CLCM			4.5m	2.3
A1008-CLCM			6.0m	3.0

\* LCM12H/12 Clamp Used



A1004-CLCM

#### Discharge Limiting Resistor

Part No	Description	Weight (kg)
6753	Resistor Add-On, 10kV 10MΩ	0.3



### Discharge Kit

#### Part No: K-SAFE-1

- Example of specially designed kit for mines personnel
- Includes operational and test equipment in storage bag
- Contact TEN for details

Part No	Item Description	Qty in Kit
A1004-CLCM	Assembled Discharge Stick	1
6753	Add on Resistor Stick	1
LT-220	240V - 220kV Detector voltage	1
5467-2	Sectional Universal Head Stick	1
546-2	Sectional Extension Stick	1
10-090	Silicone Cloth	1
E216YB-10	20kVAC Gloves rubber (pair)	1
VLP-112-10-10.5	Leather Gloves (pair)	1
TENM439	PVC Carry Bag with Shoulder Straps	1
A18007	32mm Female Base Cap	1
TENM421	Canvas Glove Bag	1



## DISCHARGE KIT

### AC System DC Link Capacitor Voltage Meter & Discharge Kit

Part No: RCDC1KAU-KM-KIT



**Added Safety in case of built-in discharge kit failure**

- Detector used to properly measure the AC system DC link voltage before performing any work on any high voltage components, and to provide a discharge procedure for the AC system DC link capacitors in the case of failure of the built-in discharge circuits in the GE IGBT control groups
- The five position selector switch located on the face, controls OFF, ON, and Test:
  - The OFF positions are for storage and transit
  - The ON position is for measurements from 0 to 1999 volts with one volt resolution
  - The T position tests basic meter functions and the digital display

#### Kit Includes:

- RCDC1000 - Digital DC Resistive Voltmeter and Second Probe
- 90cm Interconnecting Cable - 10KV Insulation
- 2 x Brass Cup Probe Tips
- 1 set Discharge Probes
- 2 x 60cm Standard Handles
- 2 x 60cm Extension Handles
- 2 x Hand Guards
- Class 1 Insulating Gloves
- Leather Outer Gloves
- Cotton Inner Gloves
- Carry Case



**For electric haul trucks**



#### Also Available

PD25R-TEN

**0-25vK Voltmeter + Discharge probes to suit  
2600DC/1600AC, 6664uF capacitance**

## PHASE SEQUENCING & ROTATION INDICATORS

### Phase Sequence & Motor Rotation Indicator

Part No: Various

- Limited lifetime warranty



5712



5702



5123

Part No	Description	Features	Indicators (Lamps)	Warn- ing	Voltage (VAC)	Measurement Category	Standard
5712	Non-Contact Phase Sequence Indicator	Detection of Phase Sequence, Self Adjusting to Correct Phase for Frequency Variation, Auto Shut Off, Phase Hold, Phase Hold for 12 Seconds	3 (10 Total)	-	480	-	-
5702	Phase Sequence Indicator	Identifies L1, L2 & L3 Phases & Indicates Phase Rotation Before Installation, Clockwise & Counter Clockwise Indication, Fused Leads	Live Phase = 3 Neon Motor Rotation = 2 Neon	-	600	III	UL 61010
5123	Motor Rotation Indicator	Tests De-Energised 3 Phase Motor to Determine Sequence for Desired Rotation	2 LED's	DO NOT USE ON LIVE CIRCUITS	-	-	-

## EQUIPMENT SPECIFIC TESTERS

### Transformer & Capacitor

Part No: 6793

- Last check meter for the condition of transformers and capacitors
- Tests new and used equipment
- Safe and reliable method of testing
- Small and easy to use, single push button operation and LED display
- Magnetised for hand free operation
- Weatherproof and durable design



Part No	Battery	Carry Case	Dimensions in Case (mm)	Weight
6793	9V	Yes	260 x 180 x 110	0.5kg





## TEN Group

The Energy Network (Australia) Pty Ltd

ABN 72 093 052 441

### QUEENSLAND

65 Wentworth Place

BANYO QLD 4014

P|F +61 7 3212 8999 | 8998

W [www.tengroup.com.au](http://www.tengroup.com.au)

E [salesqld@tengroup.com.au](mailto:salesqld@tengroup.com.au)

### TEN HIRE

91 Basalt Street

GEEBUNG QLD 4034

P +61 7 3212 8999

W [www.tenhire.com.au](http://www.tenhire.com.au)

E [hire@tengroup.com.au](mailto:hire@tengroup.com.au)

### WESTERN AUSTRALIA

4/15 Baile Road

CANNING VALE WA 6155

P +61 8 9455 5574

E [saleswa@tengroup.com.au](mailto:saleswa@tengroup.com.au)

### NEW SOUTH WALES

Suite F2, Level 1

152-156 Pacific Highway

TUGGERAH NSW 2259

P +61 417 631 443

E [salesnsw@tengroup.com.au](mailto:salesnsw@tengroup.com.au)

### VICTORIA

Unit 16, 191-195 Greens Road,

DANDENONG STH VIC 3175

P|F +61 3 9793 1622 | 1644

E [salesvic@tengroup.com.au](mailto:salesvic@tengroup.com.au)

### TASMANIA | STH AUSTRALIA

CAMBRIDGE TAS 7170

P +61 499 996 441

E [salestas@tengroup.com.au](mailto:salestas@tengroup.com.au)



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