



**Interconnect Solutions Worldwide**



**NCAGE Code U5792    [www.polamco.com](http://www.polamco.com)**

**Polamco**



# Polamco

## From 1976 beginnings to the present day.

Polamco was founded in 1976 by David Polson as a high precision manufacturing engineering company.

As a qualified design engineer, David saw the opportunity to create a company which could design and manufacture its own products. He saw the interconnection market as the way forward for Polamco, where it could offer innovative design, competitive pricing and quality products, underpinned with excellent customer service.

Today Polamco is a world renowned backshell and connector manufacturer dedicated to servicing customers through design, quality, service and reliability. A flexible workforce, 24-hour working and the latest machine tools ensures that, Polamco makes continued customer requirements a reality.

Investment in state-of-the-art machine tools is essential to Polamco's business success, with CNC machines, the majority of which are under five years old.

The company invests in its own people through its in-house training courses, continuous improvement and open and honest communication between the senior management and shop floor personnel.

It's the people at Polamco that make our success possible. We provide an equal opportunity workplace and create an environment where employees share a sense of ownership. We are dedicated towards pursuing business interests worldwide in a socially and environmentally responsible manner and in accordance with high standards of legal and ethical conduct.

Andrew Polson  
Managing Director

*“The success of the company has been the ability to react to customer requirements in an efficient manner, rapidly converting enquiries into a design concept and in a matter of hours, a competitively priced product.”*

David Polson, Chairman

Tel: +44 (0)845 017 1545

- Circular Backshells
- Rectangular Backshells
- Aerospace Backshells
- Pull Break Connectors
- Torque Differential Connectors - High Vibration
- Integral Backshell Connectors
- RJ45 and USB Connectors
- High Temperature Connectors
- Hermetic and Filtered Connectors
- Fibre Optic Connectors
- Heat Shrink Kits
- Protection Covers
- Blanking Cans
- Dummy Receptacles
- Conduit Systems
- Nomex Lacing Tape
- Heat Shrink Boots
- High Temperature Sleeving
- Cable Protection
- Adhesives
- Screenbraid



## From a range of ready-to-order items...

Polamco has a wide range of products as featured on the website [www.polamco.com](http://www.polamco.com) - which is continually updated with new designs and new product technical information. The flexible manufacturing system allows Polamco's distributor network to keep the popular ranges in stock on a Kanban system allowing next day delivery to meet customers' specific demands. Our modern, highly computerised, machine shop manufactures components and assemblies of the highest quality for customers throughout the world. Our constant investment and re-investment in the latest material and production technologies has provided a sophisticated and highly flexible 'design-to-delivery' manufacturing facility through the use of complex CNC multi-axis lathes and machining centres.

NCAGE Code U5792  
NATO Stock Numbers  
assigned to over 2000 of our parts.

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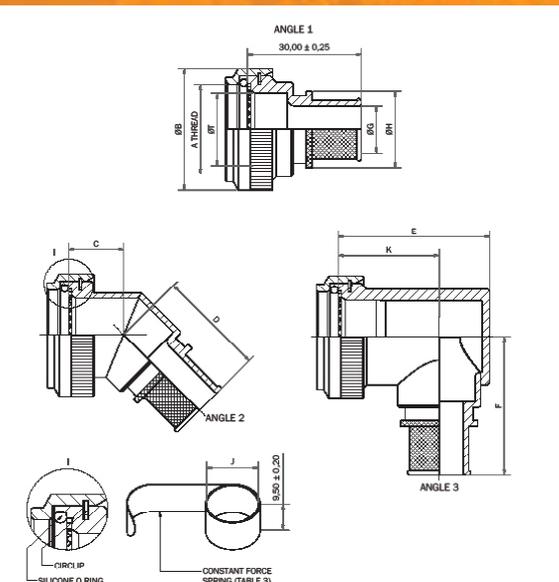
**91 Series Spring Adaptor**  
Interface H

To fit typical connector: MIL-DTL-38999 SERIES III & IV



**Polamco**

Interconnect Solutions Worldwide



ANGLE 1  
30,00 ± 0,25

ANGLE 2

ANGLE 3

CIRCLIP  
SILICONE O RING

CONSTANT FORCE SPRING (TABLE 3)

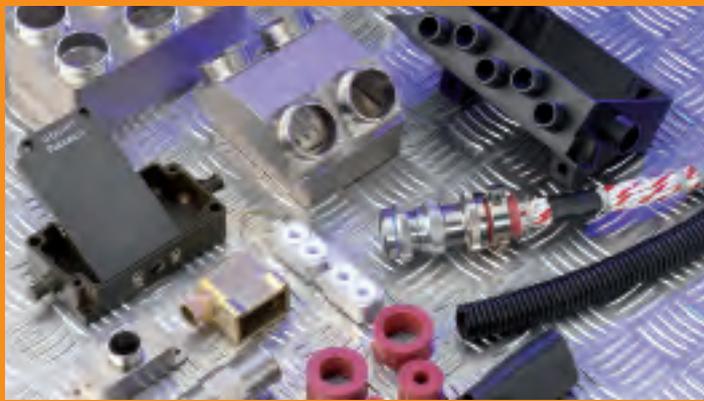
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DRAWING NOT TO SCALE  
DIMENSIONS IN MM

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### Manufacturing

#### CNC Turning Capability

- CNC Turning – twin spindle, twin turret, live C and Y-Axis
- Nakamura, Miyano Daewoo, Index
- Twin Table High Production and Rapid Prototyping
- Matsuura, Haas

**Welding** – Induction, Gas, Electron Beam

**Moulding** – Bipel 80 Ton Press

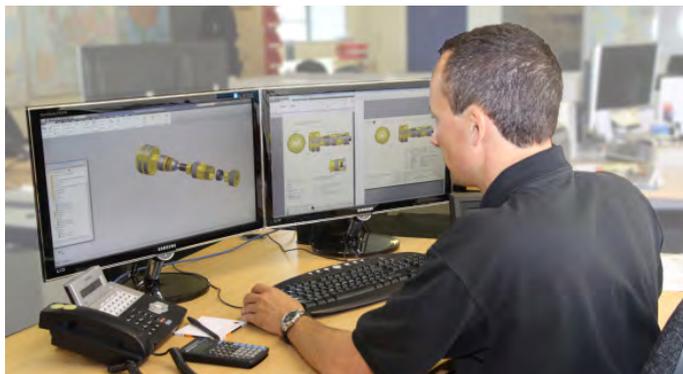
### Design and Test Capability

- Application Design Service
- Customer Visit Support
- Interactive Design Proposals by E-mail
- Rapid Prototyping
- Customer Specific Design Protection
- Inter-active Web Conferencing

## ...to customised solutions.

Our keen awareness of our customers' changing needs has resulted in the creation of our dedicated in-house research and development engineering team. Using our comprehensive CAD/CAM facilities, Polamco's design department will provide comprehensive interconnect solutions for the most demanding applications.

Our experienced engineers are ready to produce 3D product development models and design drawings for customer review within hours of receiving the enquiry.





## From AS9100 registration... to customer appreciation

Quality is at the heart of the Polamco corporate philosophy and the company holds and is working towards, an impressive array of customer specific and product approvals.

**AS9100-Rev C**

**ISO9001:2008**

**SC21 Bronze Award**

**VG95319-1011**



SGS Certificate of Registration: Polamco is registered to design, manufacture, stock and distribute cable harness accessories (connector backshells for open, heatshrink, environmentally sealed, EMC/RFI and conduit harnesses) and sub-contract machining, as well as circular and rectangular connectors for the aerospace and defence industries.

**Customer approvals include:**

- BAE Systems
- General Dynamics
- EADS Astrium
- Northrop Grumman
- Thales
- Ultra
- Rolls Royce
- Rockwell Collins
- GKN Aerospace
- Bombardier
- Lockheed Martin
- Cobham
- Goodrich Aerostructures



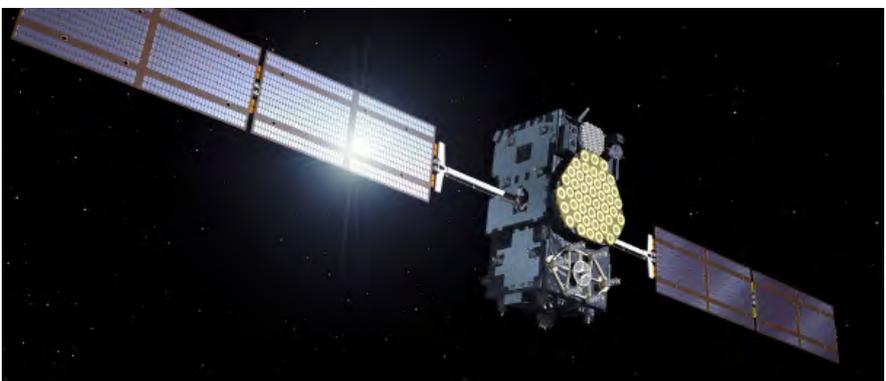
*More than a supplier and manufacturer, Polamco has been central to the success of R&D programmes worldwide.*



**From altitudes of 36,000 feet to 800 feet below the sea. From a standing start to more than 2450mph. From Arctic ice to Sahara sand. From UK to worldwide supply.**

Polamco design, manufacture and supply a wide range of interconnection products to markets worldwide. These include aerospace, defence, communications, automotive, industrial, medical, mass transit, shipbuilding, oil and space.

The following pages represent an overview of our product capability, please visit [www.palamco.com](http://www.palamco.com) for more details.



# Backshells

## Circular Backshells

Polamco design and manufacture the following circular backshells:

### Screened

- 91 Series – Spring Backshells
- 95 Series – Braid Trap Backshells
- 70 Series – Braid Tail Backshells
- 60 Series – Memory Ring Backshells
- BT Series – Banding Backshells
- 88 Series – Band in Can Backshells
- 84 Series – Cable Sealing Band in Can Backshells
- AP Series – Banding Backshells
- 22 Series – Dual Screened Backshells
- KM Series – Angled Extender Backshells
- 64 Series – Cone Clamp Backshells
- 308 Series – Double Cone Backshells
- 35/36/39 Series – Cone Clamp Cable Sealing Backshells

### Screened Characteristics

- Backshells for individual or overall 360 degree screen options
- Available in all materials and straight, 45 or 90 degree options
- Compatible with Mil-Spec dimensions and performance
- Options to use Heat Shrink Boots
- Options on low profile, extended length and alternative angles

### Non Screened Characteristics

- All parts machined from solid material for reliable strength and performance
- Available in all materials and straight, 45 or 90 degree options
- Compatible with Mil-Spec dimensions and performance
- Options to use Heat Shrink Boots

### Non Screened

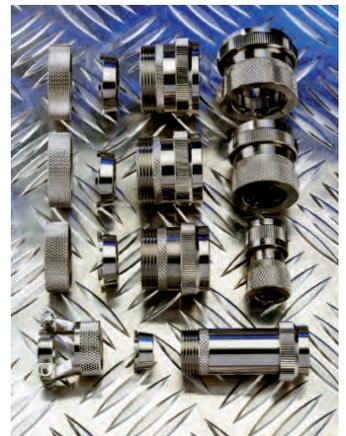
- 97 Series – Heat Shrink Boot Backshells
- 76 Series – Low Profile Heat Shrink Boot Backshells
- 96 Series – Strain Relief Backshells
- 96LP Series – Low Profile Strain Relief Backshells
- 77 Series – Strain Relief Backshells
- 37 Series – Cable Sealing Backshells
- 86 Series – Tie Post Backshells
- 98 Series – E Nut Backshells



91 Series



95 Series



64 Series



70 Series



BT Series

## Rectangular Backshells

Polamco offer a wide range of rectangular products for the following connectors:

MIL-DTL-24308 – D-Subminiature  
MIL-DTL-83513 – Micro-D  
Nano-D Connectors – Nano-D  
MIL-C-83733 / Arinc 404 / 600  
MIL-C-83527 / MIL-C-81659

### Characteristics

- Backshells for individual or overall 360 degree screening options
- Solid, split or sliding lid shells
- Shielded gasket options
- Jackscrew, jackpost fixing options
- All parts machined from solid material for reliable strength and performance
- Available in all materials and top, side, 45 or 90 degree outlet options
- Compatible with Mil-Spec dimensions and performance
- Options to use Heat Shrink Boots
- Options on low profile, extended length and alternative angles

## Heat Shrink Kits

Polamco offer pre-installed Heat Shrink Boots on the rear of Backshells and Feedthroughs.

### Characteristics

- Kits for screened or unscreened options
- Reliable single part construction for combined screen termination and environmental protection
- High screening performance (90dbs to 300MHz)
- Low fire, zero Halogen Heat Shrink, low smoke, toxicity and flammability
- All parts machined from solid material for reliable strength and performance – easy to install/repair
- Available in all materials and straight, 45 or 90 degree options
- Compatible with Mil-Spec dimensions and performance
- Options on low profile, extended length and alternative angles
- Applications – all industries including shipbuilding and submarines

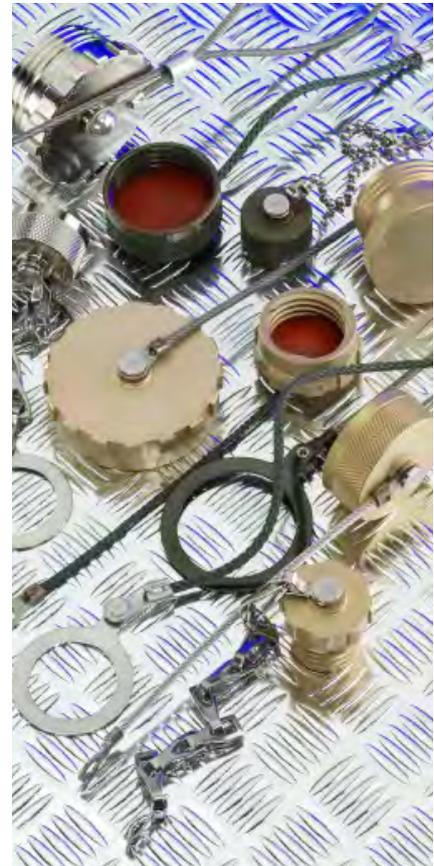
## Protection Covers, Blanking Cans and Dummy Receptacles

Polamco manufacture a wide range of covers for all known connectors.

MIL-DTL-24308 – D-Subminiature  
MIL-DTL-83513 – Micro-D  
MIL-C-83733 – Arinc 404 / 600  
MIL-C-83527 / MIL-C-81659

### Characteristics

- All parts machined from solid material for reliable strength and performance
- Compatible with Mil-Spec dimensions and performance
- Wide choice of lanyard options
- Arctic grip option available
- Gasket material options available



# RJ45 & USB Connectors

## High Performance Cat5 & Cat6a RJ45 and USB-A & USB-B Connector Assemblies for Harsh Environments

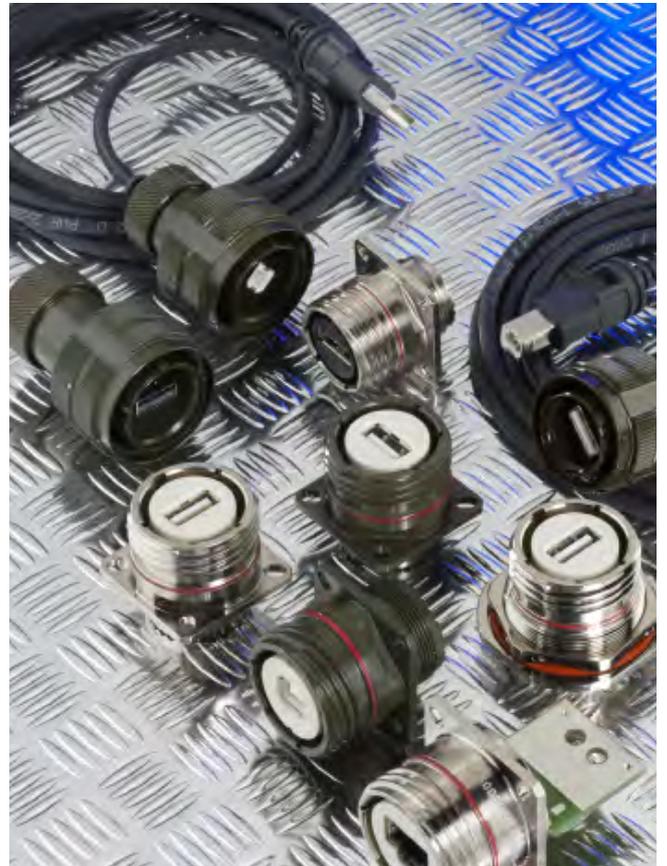
The Polamco high speed RJ45 & USB connector systems incorporates a MIL-DTL-38999 series III derived metal shell with full 360 degree EMC and mechanical protection and has been designed to meet the requirements of high speed data connections where reliability through environmental sealing and enhanced mechanical protection and EMC performance are required.

### RJ45 Performance

- Cat 5 per ISO/IEC 11801
- Cat 6a 10Gb with enhanced grounding option
- D38999 shell size 19 / 26482 shell size 18
- Sealed to IP68 for fluid and dust laden environments
- High levels of shock, vibration and mechanical impact protection
- Fully enclosed Aluminium, Marine Bronze and Stainless Steel shells for superior mechanical strength
- Positive cordset retention >100N axial force
- Optional external screen termination features on cable plug
- Isolated RJ-to-shell or grounding option

### USB Performance

- USB High Speed (2.0) 480Mbit/sec
- D38999 shell size 15 USB A, shell size 17 USB A + USB B
- Sealed to IP68 for fluid and dust laden environments
- High levels of shock, vibration and mechanical impact protection
- Fully enclosed Aluminium, Marine Bronze and Stainless Steel shells for superior mechanical strength
- Positive cordset retention >100N axial force
- Optional external screen termination features on cable plug



# Expanded Beam - Fibre Optic Connectors

## D38999 Derived Expanded Beam Connectors for Harsh Environment Applications

Polamco expanded beam fibre-optic connectors have been produced with the popular and proven MIL-DTL-38999 Series III connector format. The generic, tri-start one-turn anti-decoupling mechanism and rugged construction, with our wide choice of materials and plating finishes makes the system particularly suitable for harsh environments. The expanded beam arrangement provides high-reliability transmission and can be easily cleaned 'in the field' without the need for specialist cleaning materials.

### Performance

- Shell sizes 11,13,15,17
- Inserts 1 fibre to 16 fibres
- Hybrid options available by replacing fibre with copper contact
- Insertion Loss:
  - 9/125 fibre @ 1310nm/1550nm: -1.5dB MAX (typical -1.0dB)
  - 50/125 fibre @ 850nm/1300nm: -1.0dB MAX (typical -0.7dB)
- Return Loss: >-32dB (TYPICAL -40dB)
- Operating Temperature: -40°C TO +85°C
- Storage Temperature: -55°C TO +85°C
- Ingress Protection: IP68

### Characteristics

- The fibre is sealed behind a lens so it can't be damaged in service
- The light emitting from the fibre is expanded and transmitted as a collimated beam across an air gap into the mating connector, with no contact between the lenses.
- The lens increases the active area of the fibre, so the connector is less sensitive to dirt and contamination than butt-contact types
- Polamco expanded beam connectors are at least IP67 rated - mated, unmated, with or without dust cap fitted



# Connector Solutions

## Standard Connectors, High Temperature Connectors

Polamco Mil-Spec derived connector assemblies provide a wider choice of materials, finishes, mounting dimensions and performance characteristics than can be achieved with standard connector product. Working in partnership with some of the leading connector manufacturers, the Polamco design team can access many of their standard and well proven components whilst utilising our own comprehensive and highly flexible manufacturing facility to quickly incorporate changes to dimension and specification that address our customers' particular design needs. Such examples have included integral screening termination, rear potting chambers, push-pull or blind-mate, copper/fibre hybrid layouts to creating complete and uniform Mil-Spec derived connector panel sets, with inserts from completely different connector families.

### Standard Connector Performance

- Alternative mounting dimensions
- Integral screen termination options
- May be filtered or hermetically sealed
- Solid Machined Construction for performance and reliability
- High performance grounding spring, blind-mate and break-away release options
- Wide choice of materials and finishes, including aluminium, bronze, stainless and composite

### High Temperature Connectors

Qualified to Rolls-Royce ESC004 specification (MIL-DTL-5015 Class K).

- Solid Machined Construction for reliable strength and performance
- Stainless steel
- Anti-decoupling
- Firewall/fire resistant -55 °C to +260 °C
- Resistant to fluid contamination
- Environmentally sealed



# Filtered Connectors, Hermetic Connectors and Special Connectors

## Connector Solutions

Interconnect problem-solving through innovative design and manufacture. We produce a wide variety of connector variants which accommodate many features not normally available in standard connector families.

- Lightweight materials
- High temperature performance
- Low profile
- Power and signal combinations
- Integral screen termination
- Integral conduit termination
- Environmental sealing
- Hermetic options

## Filtered Connectors

Standard or custom design connectors incorporating high reliability planar array technology.

- Compliant pin and grounding ensure high reliability
- Customer specific filtered, feedthrough, un-filtered options on each contact
- Independent capacitance and filter characteristics on each contact
- Transient and lightning strike protection
- Industry standard connector profile
- Customer specific profiles

## Hermetic Connectors

- Connector shells machined from solid material for reliable strength and EMC performance
- Standard Mil-Spec connector profiles may be easily changed to accommodate other features and mounting requirements
- Alternative materials and finishes
- Solder bucket or pc tail contacts
- High performance and reliability
- Any combination of filtered, unfiltered and grounded contacts in one package



## Conduit Solutions, Accessory Solutions and Aerospace Solutions

### Conduit Solutions

Spin-coupling EMC and environmental conduit adaptor system.

- Reliable conduit termination with integral environmental seal
- 360 degree screen termination feature for internal screen
- Separate earth tag may be specified for termination of individual screens
- No application tooling required for termination or re-work
- All components may be re-used
- May be supplied as individual adaptors or as complete system
- Comprehensive choice of standard conduit materials
- Adaptors for circular and rectangular connectors
- Solid machined adaptor construction for reliable strength and performance
- Straight, 45 and 90 degree standard
- Alternate angles on request
- Aluminium, bronze and stainless steel

### Accessory Solutions

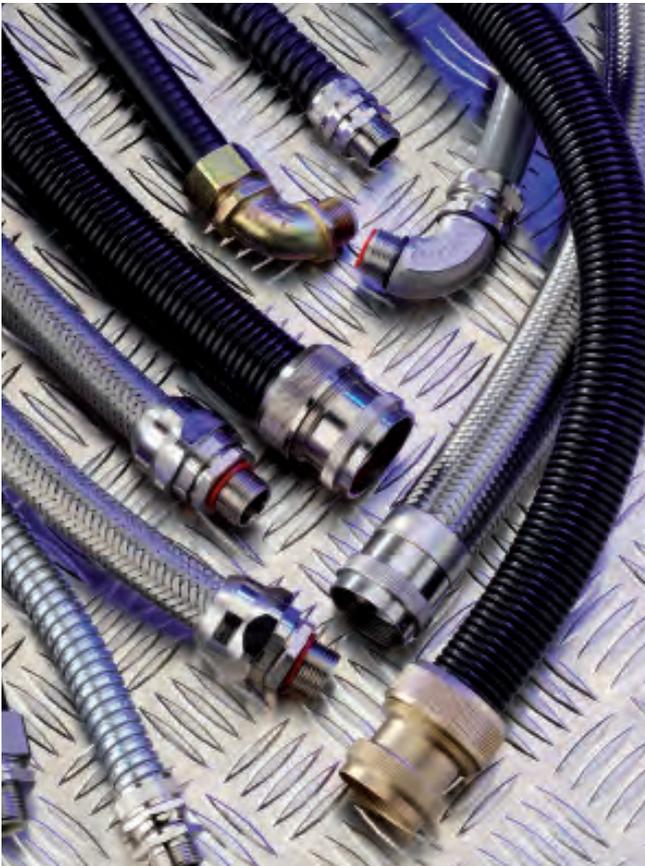
Custom design products for use in land, marine and industrial applications.

- Junction Boxes
- Dual Entry Adaptors
- EMC Feed-throughs
- Harness Transitions
- Non-metallic composites
- Special profiles
- Lightweight

### Aerospace Solutions

Custom design products for use in aerospace applications.

- Dual Entry Adaptors
- Junction Boxes
- EMC Feed-throughs
- Harness Transitions
- Pipe Support Clamps
- Special profiles
- Available with PTFE lining
- High temperature



# Associated Products

## Screenbraiding, Lacing Tapes, Adhesives, Hellermann Tyton®, and High Temperature Sleeving

### Screenbraid and Bonding Straps

EMC/RFI screen braided product supplied on a plastic former in order to ease cable harness assembly.

#### Screenbraid 90

- Minimum 90% coverage
- Cable diameter range of 2mm to 40mm

#### Screenbraid 93

- Minimum 93% coverage
- Cable diameter range of 3.7mm to 60mm
- Tin and nickel-plated copper, stainless steel and aluminium
- Knitmesh Stocking Braid
- Custom bonding strap design and client assembly service

### Nomex Lacing Tape

Breyden lacing cords are used as a binding medium to indicate an EMC classification of an open wiring harness.

- Temperature range: -55 degrees to +260 degrees
- Qualified to Eurofighter JN specification, Rolls Royce ESW 1900, MIL-T-43435B tape, lacing and tying
- Colours: red, blue, yellow, green, white, brown, violet, black and pink
- Material: Nomex yarn to MIL-C-43435B, type V, finish C

### Adhesives

A flexible, two-part, room temperature curing adhesive with shear and peel strengths. Although excellent for bonding a wide variety of substrates, the adhesive has been specifically designed for use in the manufacturing of high performance, cable harness assemblies.

The adhesive is available in:

- 50ml duo-syringes, part no. RT125-DS-050
- Conductive adhesive, part no. RT183-DS-050

### Hellermann Tyton®

Heatshrink shapes are available for the complete range of electrical and electronic harnessing applications.

- Easy installation
- High dielectric strength
- Mechanical toughness
- Superior chemical and environmental resistance
- Up to 5:1 shrink ratio
- Made from Polyolefin and Viton
- Temperature range: -55 degrees to +200 degrees
- Adhesives: WM250 +80°C, W8 +105°C, W24 +200°C

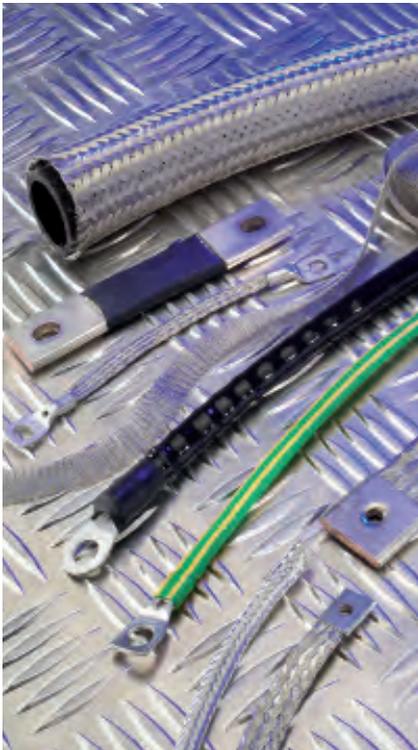
### Applications

- Mil/Aero, defence, submarines, mass transit, communications and shipbuilding industries

### Nomex High Temperature Sleeving

High temperature sleeving, manufactured from 100% continuous filament Nomex fibres. The result is a flexible, abrasion resistant material capable of withstanding temperatures up to +245 degrees.

- Colours: olive drab, ivory, black
- Sizes: 4mm to 30mm



## Assembly Tooling Kit

Housed in a durable plastic case, the full tooling set has been carefully compiled to provide a range of easy-to-use, torque-wrench compatible tools, for the reliable assembly of Polamco adaptors to D38999 connectors, in accordance with our recommended procedures.

Each set consists of 3/8 inch square drive precision machined connector holders, covering all D38999 connector shell sizes and keyway options, for both plugs and receptacles. Manufactured in Aerospace grade stainless steel, the most popular N keyway holder range is provided with master and minor keys to maximise support and minimise wear over extensive use.

Less common keyway variations are accommodated in the alternative universal holder range, which locates on the master key only.

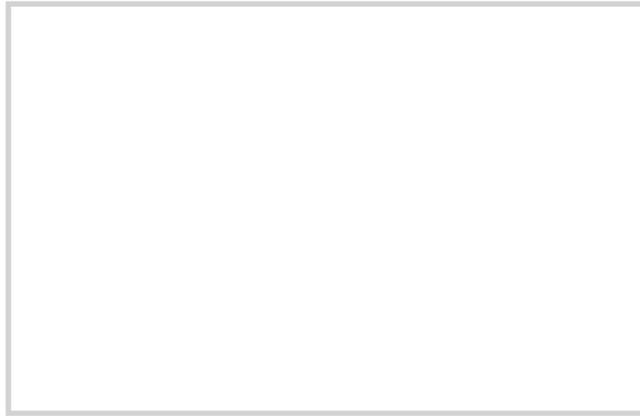
These universal holders are suitable for occasional use on all key variations of size 13 and above; however single key holders cannot be safely employed to full torque on the smaller 09 and 11 shell sizes, so for these applications, or for continuous heavy use in the larger shell sizes, Polamco advises the selection of specific multi key holders, which may be ordered separately as required.

Additionally, each set contains the Polamco strap wrench and soft jaw pliers. Both have been carefully designed to provide a reliable and user-friendly grip on the adaptor coupling nut, whilst preventing damage to the plating finish. The strap wrench provides an additional 3/8 inch square drive for torque wrench location.

Individual holders, replacement straps and soft jaw sets may be ordered separately, and are held in stock for immediate delivery.



Distributed By:



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