

Introduction



Shrink Polymer Systems is a certified ISO 9001:2000 organisation developing a wide variety of Heatshrinkable Cable Accessories for applications upto 36kV.

Cable Accessory systems are supplied internationally for Cabling networks in the Electrical Equipment Manufacturing Industry, Electricity Supply Authorities, Electrical Contractors and Land, Sea & Air Transportation Industries.

Railway Product Development: Working in conjunction with Railway Engineers, Shrink Polymer Systems introduced a combination of specialised kits suitable for the most hostile environmental conditions.

We have various Network Rail Certificate of Acceptances and

SPS kits comprise Network Rail approved Heat shrinkable material and associated components.

Network Rail Cable Specifications: SPS kits are suitable for Cables manufactured to Network Rail Signalling Cable Specification RT/E/PS/00005 & Unit Twin Copper Compound filled Telecommunication Cables Specification RT/E/PS/00015

Technical Support

Highly experienced personnel are able to advise about any product application from our extensive range, or discuss development of new applications.

Technical Support can be provided in the form of product familiarisation presentations that are designed to help promote the required product installation skills.



How To Order

The entire Shrink Polymer Systems product range is available directly from us !

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GAS TORCH KITS

Two Gas Torch kits SPS 201 and SPS 202 have been specially developed for use in the Railway environment. They are designed to provide the most efficient Hot air or Flame type heat sources for use with Heatshrink kits indoors or outdoors.

SPS 201 : PADS CAT NO: 54/37088

This gas Torch is featured in the Tool Handbook for Signalling Technicians and is also part of the Track Bonding Tool Kit No: 3 P.A.D.S CAT NO: 86/3023.

It delivers a powerful stream of hot air and its easy to carry design makes it ideal for use by maintenance teams using Primus 2000 Gas Cylinders.

SPS 201 features fail safe automatic ignition and the special Brass Adaptor supplied with the kit allows the Torch to be converted for use on standard LPG Propane Cylinder outlet valves.





SPS 863: PADS CAT. NO: 54/31016

This is a replacement Hose for kit reference number SPS 201: P.A.D.S CAT. NO: 54/37088

SPS 202: PADS CAT. NO: 40/17801

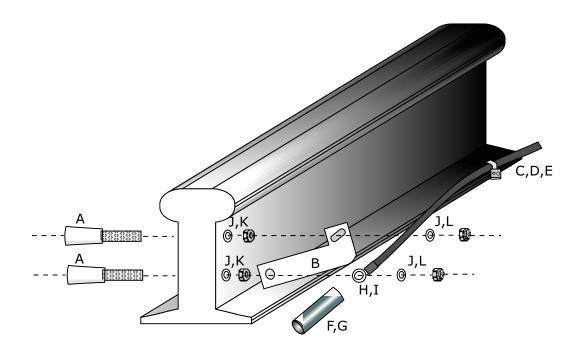
This gas Torch delivers an ideal soft flame suitable for use with Heatshrinkable material. It is designed for use with standard LPG Propane Cylinder Outlet Valves.

Note: The Torch Head is manually lit and does not feature the Auto Ignite Handle.





TRACK CIRCUIT RAIL CONNECTION COMPONENTS



GUIDE TO TRACK CIRCUIT RAIL CONNECTION KIT COMPONENTS

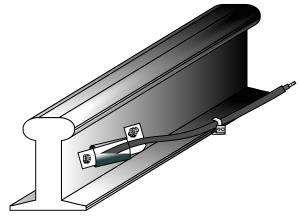
| LETTER CODE | PART NUMBER | P.A.D.S CAT. NO | COMPONENTS |
|----------------|------------------------|--------------------|---|
| А | SPS 696 | 86/44013 | STAINLESS STEEL TAPER PIN |
| В | SPS 697 | 86/43488 | STAINLESS STEEL "L" BRACKET |
| С | SPS 115 | 86/43489 | FLANGE CLIP WITH 12mm CABLE CLEAT |
| D | SPS 116 | 86/43498 | FLANGE CLIP WITH 15mm CABLE CLEAT |
| E | SPS 117 | 86/43499 | FLANGE CLIP WITH 25mm CABLE CLEAT |
| F | TMI 22/6/55 | 55/120989 | HEATSHRINK SUPPORT SLEEVE 2.5mm ² CABLE |
| G | TMI 30/8/55 | 54/158116 | HEATSHRINK SUPPORT SLEEVE 35mm ² CABLE |
| н | AMP 324063 | 54/119568 | 2.5mm ² CRIMP RING TERMINAL (BLACK) |
| I | T35-6 | 54/119492 | 35mm ² CRIMP TERMINAL |
| J | A2 SS M6 FMA WASHER | 3/190825 | STAINLESS STEEL A2 M6 FMA WASHER |
| к | A2 SS M6 FULL NUT | 3/175013 | STAINLESS STEEL A2 M6 FULL NUT |
| L | A2 SS SELF LOCK NUT | 3/179995 | STAINLESS STEEL A2 SELF LOCK NUT |

Table 1

Page 2



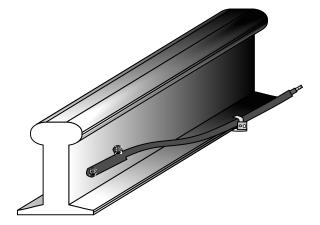
STAINLESS STEEL TRACK CIRCUIT RAIL CONNECTION KITS



SINGLE CORE 2.5mm² TC CABLE 6/120130

| PART NUMBER | P.A.D.S CAT. NO | KIT CONTENTS (SEE TABLE 1) | APPLICATION |
|----------------|--------------------|--------------------------------|---|
| SPS 695 | 86/44019 | 2A, 1B, 1C, 1F, 1H, 4J, 2K, 2L | COMPLETE TRACK CIRCUIT RAIL CONNECTION KIT FOR 1 CORE 2.5mm ² (6/120130) |
| SPS 699 | 86/44021 | 2A, 1B, 1D, 1G, 1I, 4J, 2K, 2L | TRACK CIRCUIT RAIL CONNECTION KIT FOR JOINTLESS ASTER OR T1 21 1 CORE 35mm ² |

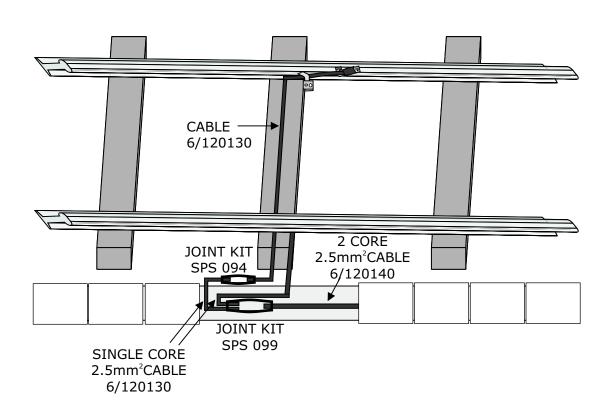
MOULDED LEAD TRACK CIRCUIT RAIL FIXINGS



| PART NUMBER | P.A.D.S CAT. NO | KIT CONTENTS (SEE TABLE 1) | APPLICATION |
|----------------|--------------------|-------------------------------|--|
| SPS 698 | 86/10037 | 10A, 10K, 20J, 10L | TRACK CIRCUIT MAINTENANCE KIT (5 FIXINGS PER KIT) |
| SPS 700 | 86/44017 | 2A, 1C, 2K, 4J, 2L | STAINLESS STEEL FIXING KIT FOR ALL TYPES OF MOULDED TRACK CIRCUIT RAIL CONNECTION KITS |



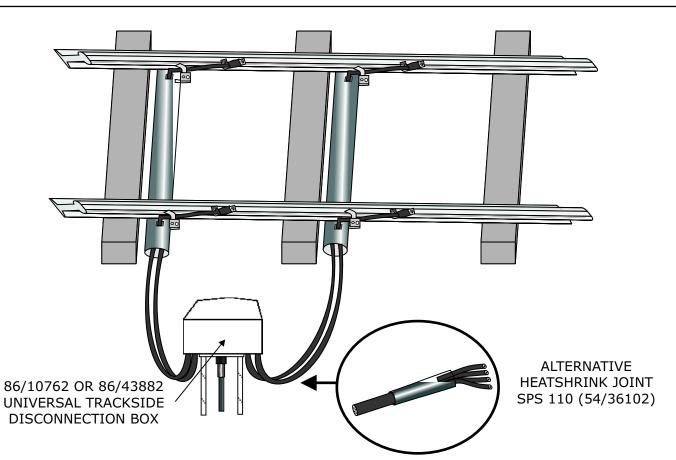
TRACK CIRCUIT CABLE JOINT KITS ALL KITS COMPLETE WITH CRIMP CONNECTORS



| PART NUMBER | P.A.D.S CAT. NO | JOINT DESCRIPTION | JOINT STYLE |
|----------------|--------------------|--|---------------------------|
| SPS 094 | 54/15875 | JOINT KIT FOR SINGLE CORE 2.5mm ² TC CABLE (10 JOINTS PER KIT) | 1 x 6/120130 1 x 6/120130 |
| SPS 095 | 54/37005 | JOINT KIT FOR SINGLE CORE 10mm ² TC CABLE (10 JOINTS PER KIT) | 1 x 6/120062 1 x 6/120062 |
| SPS 099 | 54/15289 | JOINT KIT FOR 2 x SINGLE CORE 2.5mm ² TC CABLE TO 1 x 2 CORE 2.5mm ² | 2 x 6/120130 1 x 6/120140 |
| SPS 100 | 54/15873 | JOINT KIT FOR 2 x SINGLE CORE 10mm ² TC CABLE TO 1 x 2 CORE 2.5mm ² | 2 x 6/120062 1 x 6/120140 |



DUPLICATED TRACK CIRCUIT CABLE JOINT KITS ALL KITS COMPLETE WITH CRIMP CONNECTORS



| PART NUMBER | P.A.D.S CAT. NO | JOINT DESCRIPTION | JOINT STYLE |
|----------------|--------------------|--|---------------------------|
| SPS 109 | 54/36101 | JOINT KIT FOR SINGLE CORE 2.5mm ² TC CABLE TO 1 x SINGLE CORE 2.5mm ² CABLE | 2 x 6/120130 1 x 6/120130 |
| SPS 110 | 54/36102 | JOINT KIT FOR 4 x SINGLE CORE 2.5mm ² TC CABLE TO 1 x 2 CORE 2.5mm ² | 4 x 6/120130 1 x 6/120140 |
| SPS 111 | 54/36103 | JOINT KIT FOR 4 x SINGLE CORE 2.5mm ² TC CABLE TO 1 x 4 CORE 2.5mm ² | 4 x 6/120130 1 x 6/120141 |
| SPS 114 | 54/36106 | JOINT KIT FOR 2 x 2 CORE 2.5mm ² TC CABLE TO 1 x 4 CORE 2.5mm ² | 2 x 6/120140 1 x 6/120141 |



YELLOW BONDING KITS

| PART NUMBER | P.A.D.S CAT. NO | JOINT DESCRIPTION | JOINT STYLE |
|----------------|--------------------|---|-------------|
| SPS 702 | 54/37092 | JOINT KIT FOR SINGLE CORE 35mm ² TYPE B1 YELLOW BONDING CABLE | 6/120063 |
| SPS 983 | 54/64087 | 15mm I/D EASY FIT YELLOW BONDING CABLE IDENTIFICATION SLEEVE (5 PER PACK) | |
| SPS 984 | 54/64088 | 25mm I/D EASY FIT YELLOW BONDING CABLE IDENTIFICATION SLEEVE (5 PER PACK) | |
| SPS 985 | 54/64089 | 35mm I/D EASY FIT YELLOW BONDING CABLE IDENTIFICATION SLEEVE (5 PER PACK) | |

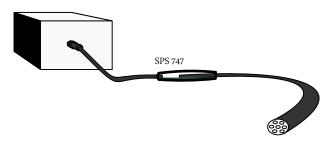
T.P.W.S - TRAIN PROTECTION WARNING SYSTEM KITS



| PART NUMBER | P.A.D.S CAT. NO | JOINT DESCRIPTION | JOINT STYLE |
|----------------|--------------------|---|--------------------------|
| SPS 970 | 54/37093 | JOINT KIT FOR 2 CORE 2.5mm ² SCREENED TWISTED PAIR CABLE (TYPE 6/160086) | 1 x6/160086 1 x 6/160086 |
| SPS 980 | 54/37094 | MOISTURE BARRIER KIT SEALING END OF CABLE TYPE 6/160086 | |



FLEXIBLE TAIL CABLE JOINT KITS ALL KITS COMPLETE WITH CRIMP CONNECTORS



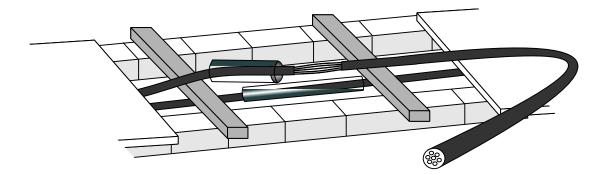
| PART NUMBER | P.A.D.S CAT. NO | JOINT DESCRIPTION | CABLE | TYPES |
|----------------|--------------------|--|--|--|
| SPS 111 | 54/36103 | JOINT KIT FOR 4 CORE 2.5mm ² TYPE C2 TAIL CABLE | 1x6/120141 | 1x6/12041 |
| SPS 747 | 54/37125 | JOINT KIT FOR 7-16 CORE 2.5mm ² TYPE C2 TAIL CABLE | 1x6/120142 1x6/120143 1x6/120144 1x6/120145 | 1x6/120142 1x6/120143 1x6/120144 1x6/120145 |
| SPS 944 | 54/37114 | JOINT KIT FOR 2 CORE 1.5mm ² POINT HEATER CABLE | 1x6/120081 | 1x6/120081 |

DATA - LINK CABLE JOINT KITS SCREENED AND UNSCREENED

| PART NUMBER | P.A.D.S CAT. NO | JOINT DESCRIPTION | JOINT STYLE |
|----------------|--------------------|--|-----------------------|
| SPS 107 | 54/37079 | JOINT KIT FOR UNSCREENED 2 CORE 1.5mm ² DATA-LINK CABLE | 1x6/166065 1x6/166065 |
| SPS 108 | 54/15877 | JOINT KIT FOR 2 CORE 1.5mm ² WITH ADDITIONAL SCREENING CORE | 1x6/167020 1x6/167020 |
| SPS 720 | 54/37070 | MOISTURE BARRIER KIT FOR SCREENED OR UN- SCREENED DATA-LINK CABLE | |



LINESIDE MULTICORE SIGNALLING CABLE JOINT KITS ALL KITS COMPLETE WITH CRIMP CONNECTORS



| PART | P.A.D.S | JOINT DESCRIPTION | CABLE P.A.D.S CAT. NO |
|---------|----------|-------------------------|-----------------------|
| NUMBER | CAT. NO | SIZE (mm ²) | CABLE P.A.D.S CAT. NO |
| SPS 071 | 54/15870 | 7 CORE 1.5 JOINT | 6/120091 |
| SPS 071 | 54/15870 | 10 CORE 0.75-1.5 JOINT | 6/120093 AND 6/120094 |
| SPS 071 | 54/15870 | 12 CORE 0.75-1.5 JOINT | 6/120096 AND 6/120097 |
| SPS 072 | 54/15871 | 19 CORE 0.75-1.5 JOINT | 6/120099 AND 6/120100 |
| SPS 073 | 54/15874 | 27 CORE 0.75-1.5 JOINT | 6/120102 AND 6/120103 |
| SPS 074 | 54/15872 | 37 CORE 0.75-1.5 JOINT | 6/120105 AND 6/120106 |
| SPS 075 | 54/37009 | 48 CORE 0.75-1.5 JOINT | 6/120108 AND 6/120109 |
| SPS 076 | 54/15880 | 61 CORE 0.75-1.5 JOINT | |
| SPS 703 | 54/37120 | 7 CORE 2.5 JOINT | 6/120092 |
| SPS 703 | 54/37120 | 10 CORE 2.5 JOINT | 6/120095 |
| SPS 703 | 54/37120 | 12 CORE 2.5 JOINT | 6/120098 |
| SPS 704 | 54/37121 | 19 CORE 2.5 JOINT | 6/120101 |
| SPS 705 | 54/37122 | 27 CORE 2.5 JOINT | 6/120104 |
| SPS 706 | 54/37123 | 37 CORE 2.5 JOINT | 6/120107 |
| SPS 707 | 54/37124 | 48 CORE 2.5 JOINT | 6/120110 |

LINESIDE MULTICORE SIGNALLING CABLE JOINT KITS FOR NON STANDARD APPLICATIONS

WRAPAROUND TEST POINT REPAIR SPS 848/718/719

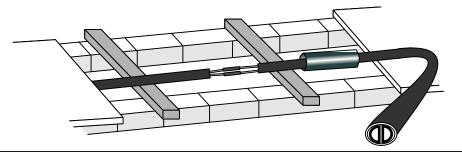




| PART | P.A.D.S | CABLE | JOINT DESCRIPTION |
|---------|----------|-------------------------|--------------------------------------|
| NUMBER | CAT. NO | SIZE (mm ²) | |
| SPS 848 | | 7-10 CORE 0.75-2.5 | TEST POINT KITS FOR SIGNALLING CABLE |
| SPS 718 | 54/37078 | 12-27 CORE 0.75-2.5 | TEST POINT KITS FOR SIGNALLING CABLE |
| SPS 719 | 54/37077 | 37-48 CORE 0.75-2.5 | TEST POINT KITS FOR SIGNALLING CABLE |
| SPS 134 | 54/15889 | 37 CORE 0.75-1.5 | INDUCTION LOOP JOINT (REED T/C) |
| SPS 709 | 54/15846 | 37 CORE 0.75-1.5 | TRANSITION JOINT TYPE B2 TO PILC |
| SPS 710 | 54/15848 | 19 CORE 0.75-1.5 | TRANSITION JOINT TYPE B2 TO PILC |



POWER CABLE JOINT KITS FOR STRANDED COPPER AND SOLID SECTORAL ALUMINIUM CONDUCTORS 0.6/1kV



| PART | P.A.D.S | JOINT DESCRIPTION | CABLE P.A.D.S CAT. NO |
|----------|-------------|--|---------------------------|
| NUMBER | CAT. NO | | INC. ALUMINIUM CONNECTORS |
| SPS 711 | 54/37095 | 2 CORE 16mm2 TYPE BR880 CABLE | |
| SPS 712 | 54/37096 | 2 CORE 25mm2 TYPE BR880 CABLE | 6/142519 |
| SPS 713 | 54/37097 | 2 CORE 35mm2 TYPE BR880 CABLE | 6/142609 |
| SPS 714 | 54/37098 | 2 CORE 50mm2 TYPE BR880 CABLE | 6/142629 |
| SPS 715 | 54/37099 | 2 CORE 70mm2 TYPE BR880 CABLE | 6/142639 |
| SPS 716 | 54/37100 | 2 CORE 95mm2 TYPE BR880 CABLE | 6/142644 |
| SPS 1013 | APPLIED FOR | JOINT COMPLETE WITH MECHANICAL CONNECTORS TO SUIT 16-95mm2 2 CORE SOLID AL POWER CABLE | 0000 |
| SPS 832 | 54/37101 | 4 CORE 70mm2 TYPE BR880 CABLE | 6/151469 |
| SPS 975 | 54/37102 | 4 CORE 95mm2 TYPE BR880 CABLE | 6/151494 |

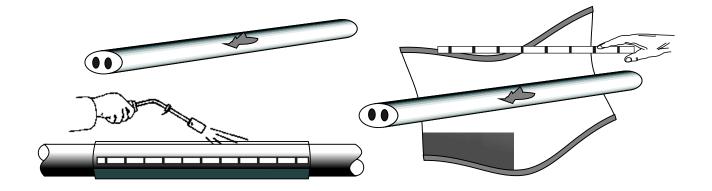
| PART NUMBER | P.A.D.S CAT. NO | JOINT DESCRIPTION | CABLE P.A.D.S CAT. NO INCLUDES COPPER CONNECTORS |
|----------------|--------------------|---------------------------------|---|
| SPS 101 | 54/37012 | 2 CORE 1.5-2.5mm2 TYPE B2 CABLE | 6/120081 & 6/120082 |
| SPS 102 | 54/15857 | 2 CORE 10mm2 TYPE B2 CABLE | 6/120083 |
| SPS 103 | 54/15891 | 2 CORE 35mm2 TYPE B2 CABLE | 6/120084 |
| SPS 104 | 54/15892 | 2 CORE 50mm2 TYPE B2 CABLE | |
| SPS 105 | 54/15878 | 2 CORE 70mm2 TYPE B2 CABLE | 6/120085 |
| SPS 106 | 54/15879 | 2 CORE 95mm2 TYPE B2 CABLE | 6/120086x |
| SPS 717 | 54/37074 | TRANSITION 2 CORE 35mm2 | |
| | | TYPE B2 TO 35mm2 PILC | |
| SPS 748 | 54/37090 | 4 CORE 10mm2 TYPE B2 CABLE | |

| PART | P.A.D.S | JOINT DESCRIPTION | CABLE P.A.D.S CAT. NO |
|---------|----------|-------------------------------|-------------------------|
| NUMBER | CAT. NO | | CONNECTORS NOT INCLUDED |
| SPS 079 | 54/15759 | 2 CORE 10-35mm2 TYPE B2 CABLE | 6/120083 |
| SPS 080 | 54/15886 | 2 CORE 70-95mm2 TYPE B2 CABLE | 6/120084 |
| SPS 081 | 54/36100 | 4 CORE 70-95mm2 TYPE B2 CABLE | 6/120085 |

| PART NUMBER | P.A.D.S CAT. NO | JOINT DESCRIPTION | CABLE P.A.D.S CAT. NO CONNECTORS NOT INCLUDED | | |
|----------------|--------------------|--|--|--|--|
| SPS 916 | 54/37115 | 2 CORE 10-35mm2 CABLE END TERMINATING KIT | 6/12083 & 6/120084 | | |
| Page 9 | | | | | |



HEATSHRINK WRAPAROUND CABLE SHEATH REPAIR SUITABLE FOR POWER, SIGNALLING AND TELECOM CABLES



| PART | P.A.D.S | RECOMMENDED | JOINT STYLE |
|--|--|--|--|
| NUMBER | CAT. NO | Working Range | |
| SWRS 50-15-1000 SWRS 75-22-1000 SWRS 105-30-1000 SWRS 146-38-1000 SWRS 188-55-1000 | 54/18640 54/18606 54/18608 54/18609 54/18607 | 13mm TO 40mm 20mm TO 60mm 28mm TO 90mm 35mm TO 130mm 50mm TO 175mm | ALL TYPES OF POWER, SIGNALLING AND TELECOM CABLES |

MOISTURE BARRIER KITS

| PART | P.A.D.S | JOINT DESCRIPTION | JOINT STYLE |
|---------|----------|--|--|
| NUMBER | CAT. NO | TO SUIT CABLE DIA | |
| SPS 077 | 54/13658 | CABLE GLAND SUPPORT AND SEALING COLLAR (10 PER KIT) | ALL TYPES OF POWER AND SIGNALLING CABLE |
| SPS 980 | 54/37094 | TPWS CABLE (24 PER KIT) | |
| SPS 720 | 54/37070 | 6mm TO 14mm (24 PER KIT) | |
| SPS 096 | 54/37052 | 13mm TO 24mm (24 PER KIT) | |
| SPS 097 | 54/37053 | 20mm TO 37mm (24 PER KIT) | |
| SPS 098 | 54/37054 | 27mm TO 48mm (24 PER KIT) | |

CABLE END SEALING CAPS

| PART NUMBER | P.A.D.S CAT. NO | RECOMMENDED WORKING RANGE | JOINT STYLE |
|----------------|--------------------|------------------------------|-------------------|
| | | | CABLE SEALING CAP |
| C12-4 | 54/10716 | 4mm TO 10mm | |
| C20-8 | 54/12054 | 9mm TO 18mm | |
| C40-15 | 54/12051 | 15mm TO 35mm | |
| C63-25 | 54/12052 | 25mm TO 60mm | |
| C76-30 | 54/12053 | 30mm TO 72mm | |



COMPOUND FILLED UNIT TWIN COPPER TELECOM JOINT ENCLOSURES CABLE SPECIFICATION RT/E/PS/00015

SPS Telecom Jointing kits comprise a range of Heatshrinkable Enclosures in Tubular and Wraparound form. The system accommodates Single and Multi-Cable entry and each Enclosure allows re-entry if required.

| PART NUMBER | P.A.D.S CAT. NO | JOINT DESCRIPTION | JOINT STYLE |
|--|--|---|---|
| SPS 733 SPS 734 | 54/37084 54/37085 | UP TO 5 PAIR 0.9mm CONDUCTORS UP TO 10 PAIR 0.9mm CONDUCTORS | H/S TUBE IN- LINE JOINT CLOSURE FOR REPAIRS TO SUB SPURE TEL. CABLES |
| SPS 735 SPS 736 SPS 737 | 54/15849 54/15852 54/15853 | 5/10 PAIR COMPOUND FILLED CABLE 20/30 PAIR COMPOUND FILLED CABLE 50/75 PAIR COMPOUND FILLED CABLE | H/S TUBE IN -LINE JOINT CLOSURE WITH BRAID LINING |
| SPS 738 SPS 739 SPS 740 SPS 897 | 87/4810 87/4811 87/4812 87/4813 | 5/10/20 PAIR COMPOUND FILLED CABLE 30/50 PAIR COMPOUND FILLED CABLE 70/100 PAIR COMPOUND FILLED CABLE 150 PAIR COMPOUND FILLED CABLE | WRAPAROUND SLEEVE IN -LINE OR BRANCH CLOSURE WITH LAMINATED LINER. BRANCH CLIP NOT INCLUDED |
| SPS 741 SPS 742 SPS 743 | 54/37081 54/37082 54/37083 | 20 PAIR COMPOUND FILLED CABLE 50 PAIR COMPOUND FILLED CABLE 100 PAIR COMPOUND FILLED CABLE | H/S TUBE IN-LINE CLOSURE WITH METAL CANISTER ENCLOSURE |
| SPS 1000 SPS 1001 SPS 1002 | 54/37062 54/37060 54/37061 | 5/10/20 PAIR COMPOUND FILLED CABLE 30/50 PAIR COMPOUND FILLED CABLE 70/100 PAIR COMPOUND FILLED CABLE | WRAPAROUND SLEEVE IN -LINE OR BRANCH CLOSURE WITH LAMINATED LINER. INCLUDES BRANCH CLIP |

Shrink Polymer Systems Cable Installation Materials - 24 volts to 36 kV

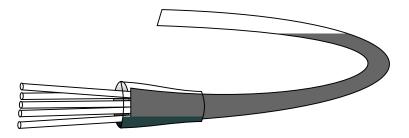
CCTV COAXIAL AND SUNDRY TELECOM KITS

| PART NUMBER | P.A.D.S CAT. NO | JOINT DESCRIPTION | JOINT STYLE | |
|----------------|--------------------|--|---------------------|--|
| SPS 744 | 54/15894 | SINGLE OR DOUBLE SHEATHED CCTV COAXIAL CABLE TYPE A&B | | |
| SPS 745 | 54/35012 | URM 70 CAMERA CABLE TO TYPE A CCTV COAXIAL CABLE | | |
| SPS 895 | 54/37139 | MOISTURE SHIELD EARTH BOND AND CLIP | | |
| SPS 932 | 54/37140 | CAST RESIN CABLE SEALING CONE | | |
| SPS 936 | 54/37141 | 10-50 PAIR TERMINATING KIT WITH SHIELD BONDING KIT (PACK OF 5 KITS) | | |
| SPS 949 | 54/37142 | SHEATH GAPPING KIT FOR CABLES WITH METALLIC SHEATH | | |
| SPS 972 | 54/37143 | 2-10 PAIR TERMINATING KIT WITH SHIELD BONDING KIT (PACK OF 5 KITS) | | |
| SPS 973 | 54/37144 | 10-18mm DIA FIBRE OPTIC CABLE MOSITURE BARRIER KIT (PACK OF 10 KITS) | | |
| SPS 353 | 54/37108 | WRAPAROUND SEALING KIT TO REPAIR LEAKING PUTTY WIPES ON PRESSURISED CLOSURES | | |
| JOINT C | LOSURES | FOR SEPARATE SCREENIN | IG CONDUCTOR CABLES | |
| SPS 851 | 54/37126 | INLINE JOINT 150mm ² STR. AL. WITH CONNECTOR | | |
| SPS 852 | 54/37127 | SPUR JOINT 150mm ² STR. AL. TO 16mm ² STR. CU. WITH CONNECTOR | | |
| SPS 853 | 54/37128 | SPUR JOINT 150mm ² STR. AL. TO 150mm ² STR. AL. WITH CONNECTOR | | |

FOR DETAILS ON 250mm² SIZE COMBINATIONS, CONSULT SHRINK POLYMER SYSTEMS

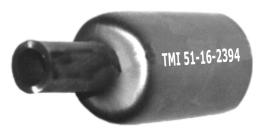


HEATSHRINKABLE POLYOLEFIN TUBE THIN WALL FLAME RETARDED 2:1 SHRINK RATIO



| PART | P.A.D.S | EXPANDED | RECOVERED | STANDARD | RECOVERED | COLOUR |
|---------|----------|----------|-----------|----------|-----------|--------------|
| NUMBER | CAT. NO | DIAMETER | DIAMETER | LENGTH | THICKNESS | RANGES |
| TWM 48 | 54/73439 | 4.8mm | 2.4mm | 60mtr | 0.51mm | |
| TWM 64 | 54/73440 | 6.4mm | 3.2mm | 60mtr | 0.64mm | RED |
| TWM 95 | 54/72441 | 9.5mm | 4.8mm | 60mtr | 0.64mm | YELLOW |
| TWM 127 | 54/73442 | 12.7mm | 6.4mm | 60mtr | 0.64mm | BLUE |
| TWM 191 | 54/73443 | 19.1mm | 9.5mm | 60mtr | 0.76mm | BLACK |
| TWM 254 | 54/44058 | 25.4mm | 12.7mm | 30mtr | 0.89mm | CLEAR |
| TWM 381 | 54/44059 | 38.1mm | 19.1mm | 30mtr | 1.02mm | GREEN/YELLOW |
| TWM 508 | 54/44060 | 50.8mm | 25.4mm | 30mtr | 1.14mm | |

HEATSHRINKABLE POLYOLEFIN TUBE THICK WALL 3:1 SHRINK RATIO SEALANT LINED



| PART | P.A.D.S | EXPANDED | RECOVERED | STANDARD | RECOVERED | COLOUR |
|------------|----------|----------|-----------|----------|-----------|--------|
| NUMBER | CAT. NO | DIAMETER | DIAMETER | LENGTH | THICKNESS | RANGES |
| TMI 12-3 | 54/73436 | 12mm | 3mm | 1500mm | 2.0mm | |
| TMI 22-6 | 54/73431 | 22mm | 6mm | 1500mm | 2.5mm | |
| TMI 33-8 | 54/73432 | 33mm | 8mm | 1500mm | 3.2mm | |
| TMI 45-12 | 54/73433 | 45mm | 13mm | 1500mm | 4.1mm | BLACK |
| TMI 55-16 | 54/73434 | 55mm | 16mm | 1500mm | 4.1mm | ONLY |
| TMI 69-22 | 54/73435 | 69mm | 22mm | 1500mm | 4.1mm | |
| TMI 95-30 | 54/73437 | 95mm | 30mm | 1500mm | 4.3mm | |
| TMI 130-36 | 54/73430 | 130mm | 36mm | 1500mm | 4.3mm | |
| TMI 160-50 | | 160mm | 50mm | 1500mm | 4.3mm | |



HEATSHRINKABLE CABLE GLANDS FOR THE SUPPORT AND SEALING OF UNARMOURED CABLES

Cables terminated into Railway Signalling equipment should be protected against the risk of accidental damage caused by external forces pulling at the Cable Termination connections and ingress of moisture which may result in equipment failure.

The HCS series of Heatshrinkable Standard and

Entry Glands were developed to provide a cost effective method of ensuring a secure support and weatherproof seal on all types of non armoured Railway Signalling Cable. The high shrink ratio heatshrinkable collar

`Modified'Cable



enables suitability for a range of Cable diameters.

The Glands are manufactured in accordance with MIL-1-81765/1 and MIL-1-23053/15 specifications and provide a flame retarded adhesive lined body along with a male threaded bush to enable fixture to the Gland Plate.

A range of Glands are available complete with Brass Threaded Adaptor, Locknut and Fibre Washers to suit all types of Signalling and Switching equipment. The majority of Glands with Adaptors are intended to be clearance fit enabling them to be re-used upon servicing of the equipment.

MODIFIED RANGE

LOCKNUT AND FIBRE WASHERS

BRASS ² ADAPTOR



HEATSHRINKABLE CABLE GLANDS STANDARD RANGE - DIMENSIONAL DETAIL

| PART NUMBER | | | | MAX PLATE THICKNESS (mm) | | | EQUIVELENT P.A.D.S REFERENCE NUMBERS |
|----------------|-----------|-------|----|-----------------------------|------|----|---|
| HCS 1 | 54/109179 | 4-12 | 19 | 6 | 25 | 26 | |
| HCS 2 | 54/109175 | 7-17 | 19 | 6 | 25 | 26 | |
| HCS 3 | 54/109176 | 13-26 | 28 | 8 | 34 | 35 | 54/1003 |
| HCS 4 | 54/109164 | 19-38 | 40 | 10 | 50 | 51 | |
| HCS 4s | 54/109165 | 19-53 | 53 | 10 | 59 | 60 | |
| HCS 5 | 54/109181 | 36-70 | 73 | 18 | 86.5 | 88 | |

HEATSHRINKABLE CABLE GLANDS MODIFIED RANGE - DIMENSIONAL DETAIL

| PART Number | P.A.D.S Cat. No | MAX CABLE DIA | MAX GLAND I.D | ENTRY HOLE DIA | EQUIVELENT P.A.D.S REFERENCE NUMBER |
|----------------|--------------------|------------------|------------------|-------------------|--|
| SPS 721 | 54/000092 | 18 | 19 | 25 | 54/001002 |
| | | mm | mm | mm | |
| SPS 722 | 54/000093 | 18 | 19 | 25 | 54/037067 |
| 010122 | | mm | mm | mm | 0 11001 001 |
| SPS 723 | 54/000094 | 15 | 16 | 20 | 54/001001, 54/001005, 54/037056 |
| | | mm | mm | mm | 0-1/00/001, 0-1/00/000, 0-1/00/000 |
| SPS 724 | 54/000095 | 20 | 21 | 27 | 54/037068, 54/037058 |
| | | mm | mm | mm | 04/00/000, 04/00/000 |
| SPS 725 | 54/000096 | 25 | 26 | 32 | 54/037059 |
| | | mm | mm | mm | 04/001000 |
| SPS 726 | 54/000097 | 25 | 26 | 32 | 54/001004, 54/037057 |
| 010720 | | mm | mm | mm | |
| SPS 727 | 54/000098 | 28 | 28 | 32 | 54/037055 |
| | | mm | mm | mm | 0-1001000 |
| SPS 728 | 54/000099 | 13.5 | 14 | 19 | 54/037050, 54/037051 |
| 51 5 7 20 | | mm | mm | mm | 54/00/000, 54/00/001 |



HEATSHRINKABLE CABLE ENTRY SEALING GLANDS APPLICATION TABLE

The Equipment Application listed has been established with the co-operation of the NRS (Crewe) Technical Section.

Rail Equipment Cable entry apertures may vary depending on the equipment age, therfore it is highly recommeded that this is taken into account when selecting a suitable Gland from the Table below.

| EQUIPMENT P.A.D.S CAT. NO | EQUIPMENT DESCRIPTION | SCREW FIT GLAND OPTION | CLEARANCE FIT GLAND OPTION | STANDARD GLAND OPTION |
|------------------------------|--|------------------------------|----------------------------------|--------------------------|
| 87/37887-88-90 | DAC & RACAL WEATHERPROOF TELEPHONES | | SPS 728 | |
| 86/43476-86 | ADTRANZ T1-21 TUNING UNITS | | | HCS 2 |
| 86/43743-44-49-67-73 | ML ASTER TUNING UNITS | | | HCS 2 |
| 86/9130 to 86/9137 | NRS STANDARD SIGNAL HEADS | | | HCS 3 |
| 86/28779 | AUTOMATIC OPEN, CONTROLLED LOCALLY (AOCL UNITS) | | | HCS 2 |
| 86/1258-59 | FIBRE OPTIC STENCIL & THEATRE INDICATORS | | | HCS 2 |
| 86/41070-71 | POSITION LIGHT GROUND SIGNALS | SPS 724 | | |
| 86/1262 | SIGNAL HOUSE-OPTIC FIBRE LIT SIGNALS TYPE PL1W, PL1R AND PL2R | | SPS 726 | |
| 86/32113 | CLAMPLOCK & DETECTOR MECHANISM ASSEMBLY | SPS 726 | | HCS 2 |
| 86/32521-41 | ELECTRO HY DRAULIC POWER PACKS (PUMP UNITS) | | SPS 725 | |
| 86/41451 | SIGNAL POST REPLACEMENT SWITCHES | SPS 726 | | |
| 86/46305-310-315 | DOUBLE ARM TREADLE SWITCHES | SPS 727 | | |
| 86/46300 | SINGLE ARM TREADLE SWITCHES | SPS 727 | | HCS 2 |
| 86/32650 | TRAIN OPERATED POINTS ACCUMULATOR UNITS | | | |
| 86/30000 | ELECTRICAL DETECTOR BOXES | SPS 727 | | |
| 88/19195 | TRAIN STOPS | SPS 727 | | |
| 86/7273 to 76 | 4&6 WAY ROTARY CONTROLLERS | SPS 727 | | |
| | WSL OLD STYLE P3 IMPEDANCE BONDS | SPS 727 | | |
| 86/17023-24 | WSL & HOWELL'S TYPE 2&3 IMPEDANCE BONDS (4 x 20mm HOLES) | | SPS 723 | |
| 86/17024 | WSL & HOWELL'S TYPE 3 IMPEDANCE BONDS (1 x 26mm HOLE) | | SPS 721 | |
| 86/17023 | WSL TYPE 2 IMPEDANCE BOND (26mm HOLE) | | SPS 724 | |
| 86/17023 | HOWELL'S TYPE 2 IMPEDANCE BOND (LARGE 26mm HOLE) | | SPS 721 | |
| 62/6736-37 | AWS ELECTRO INDUCTORS HOWELL'S STANDARD & EXTRA STRENGTH | | SPS 721 | |
| 62/6781-85 | AWS SUPPRESSOR INDUCTORS HOWELL'S STANDARD & EXTRA STRENGTH | SPS 724 | SPS 722 | |
| 88/381-383 | ALSTOM HW POINT MACHINES | SPS 727 | SPS 725 | |
| 88/12008-88- 88/81253 | WSL STYLE 63 POINT MACHINES | | | HCS 4 |
| 55/121369-370 | POINT HEATER TRANSFORMER 20mm PORT | | SPS 723 | |
| 55/121369-370 | POINT HEATER TRANSFORMER 26mm PORT | | SPS 724 | HCS 2 |
| 55/121369-370 | POINT HEATER TRANSFORMER 32mm PORT | | SPS 725 | |



ZERO HALOGEN LSF CABLE JOINTS FOR LIMITED FIRE HAZARD CABLES



- Fire tested and compliant with london underground standards 2-0100-002 or the fire safety of materials and E4156 for the cable standard
- Slim profile and unlimited shelf life Complete with range taking mechanical shearbolt connectors
- Full range of joints available for all cable types including power and multicore cables

Shrink Polymer Systems can now offer a range of heatshrink joints suitable for both single and multicore low smoke fume zero halogen cables.

Developed for London Underground for use within the tunnels and above surface, the system incorporates flame retardant, non halogen polyolefin heatshrink tubing with a meltable inner liner that itself has excellent flame retardant properties with reduced acid gas emission and smoke generation.



The system incorporates a flexible outer fire barrier tube that

provides a high degree of fire resistance. For installations outside of the tunnels this can be omitted.

For ease of use, the range comes complete with range finding mechanical shearbolt connectors. Slim in profile the joints can be installed in horizontal and vertical planes and have an unlimited shelf life.

| HEATSHRINK JOINTS TO SUIT 1-4 CORE XLPE/SWA/LSOH | | | | | |
|--|--------------------------|-----------|--|--|--|
| PART | CABLE | VOLTAGE | | | |
| NUMBER | RANGE | | | | |
| SPA NHF 1.5-2.5- | 1.5 - 2.5mm ² | 600/1000V | | | |
| SPA NHF 4-6- | 4 - 6mm ² | 600/1000V | | | |
| SPA NHF 10-16- | 10 - 16mm ² | 600/1000V | | | |
| SPA NHF 25-50- | 25 - 50mm ² | 600/1000V | | | |
| SPA NHF 70-95- | 70 - 95mm ² | 600/1000V | | | |
| SPA NHF 120-185- | 120 - 185mm ² | 600/1000V | | | |
| SPA NHF 240-300- | 240 - 300mm ² | 600/1000V | | | |
| SPA NHF 400-630- | 400-630mm ² | 600/1000V | | | |
| SPA NHF 800-1000- | 800-1000mm ² | 600/1000V | | | |
| | | | | | |

Notes:-

- 1 For non armoured joints, omit letter (A) from the part number
- 2 Add last digit to part number to indicate number of cores



ADDITIONAL PRODUCTS

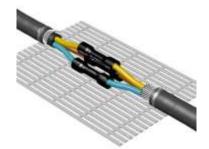


Medium Voltage Terminations and Joints

A range of Heatshrink Joints and Terminations for Paper and Polymeric Insulated Cables up to voltages of 36kV.

Low Voltage Terminations and Joints

A range of Heatshrink Joints and Terminations for Paper and Polymeric Insulated Cables for voltages 0.6/3.6kV





Heatshrink Busbar Tube and Zero Halogen Tube

A range of red highly flexible Busbar Insulation Tubing is available for applications up to 36kV.

Also available on their own or incorporated within Joints kits are Thin, Medium and Thick Wall Heatshrink Tube products for LSF and Zero Halogen applications.

Tapes

A variety of Tapes are available including Melt Tapes, Heatshrink Tapes, Zero Halogen, Stress Control and EPR Rubber Tapes..



For further details on our extensive product range Please request our General Catalogue or view it online at:-

www.shrinkpolymersystems.co.uk



Shrink Polymer Systems Cable Installation Materials – 24 volts to 36 kV

P.A.D.S CAT. NO. / PART NO. / PAGE NO. CROSS REFERENCE LIST

| CAT NO | SPS PART NO | PAGE | CAT NO | SPS PART NO | PAGE | CATNO | SPS PART NO | PAGE | CAT NO | SPS PART NO | PAGE |
|-----------|-------------|------|----------|------------------|------|----------|-------------|------|----------|----------------|------|
| 40/17801 | SPS 202 | 1 | 54/15874 | SPS 073 | 8 | 54/37079 | SPS 107 | 7 | 54/43488 | SPS 697 | 2 |
| 54/000092 | SPS 721 | 15 | 54/15875 | SPS 094 | 4 | 54/37081 | SPS 741 | 11 | 54/44058 | TWM 254 | 13 |
| 54/000093 | SPS 722 | 15 | 54/15877 | SPS 108 | 7 | 54/37082 | SPS 742 | 11 | 54/44059 | TWM 381 | 13 |
| 54/000094 | SPS 723 | 15 | 54/15878 | SPS 105 | 9 | 54/37083 | SPS 743 | 11 | 54/44060 | TWM 508 | 13 |
| 54/000095 | SPS 724 | 15 | 54/15879 | SPS 106 | 9 | 54/37084 | SPS 733 | 11 | 54/73429 | TMI122-40-1200 | 13 |
| 54/000096 | SPS 725 | 15 | 54/15880 | SPS 076 | 8 | 54/37085 | SPS 734 | 11 | 54/73430 | TMI90-30-1500 | 13 |
| 54/000097 | SPS 726 | 15 | 54/15886 | SPS 080 | 9 | 54/37088 | SPS 201 | 1 | 54/73431 | TMI22-6-1500 | 13 |
| 54/000098 | SPS 727 | 15 | 54/15889 | SPS 134 | 8 | 54/37090 | SPS 748 | 9 | 54/73432 | TMI 30-8-1500 | 13 |
| 54/000099 | SPS 728 | 15 | 54/15891 | SPS 103 | 9 | 54/37092 | SPS 702 | 6 | 54/73433 | TMI40-12-1500 | 13 |
| 54/10716 | C10-4 | 10 | 54/15892 | SPS 104 | 9 | 54/37093 | SPS 970 | 6 | 54/73434 | TMI51-16-1500 | 13 |
| 54/109164 | HCS 4 | 15 | 54/15894 | SPS 744 | 12 | 54/37094 | SPS 980 | 6 | 54/73435 | TM168-22-1500 | 13 |
| 54/109165 | HCS4S | 15 | 54/18606 | SWRS 75-22-1000 | 10 | 54/37095 | SPS 711 | 9 | 54/73436 | TMI12-3-1200 | 13 |
| 54/109175 | HCS 2 | 15 | 54/18607 | SWRS 188-55-1000 | 10 | 54/37096 | SPS 712 | 9 | 54/73437 | TMI90-30-1500 | 13 |
| 54/109176 | HCS 3 | 15 | 54/18608 | SWRS 105-30-1000 | 10 | 54/37097 | SPS 713 | 9 | 54/73439 | TWM 48 | 13 |
| 54/109179 | HCS 1 | 15 | 54/18609 | SWRS 146-38-1000 | 10 | 54/37098 | SPS 714 | 9 | 54/73440 | TWM 64 | 13 |
| 54/109181 | HCS 5 | 15 | 54/18610 | SWRS 35-10-1000 | 10 | 54/37099 | SPS 715 | 9 | 54/73441 | TWM 95 | 13 |
| 54/12051 | C 40-15 | 10 | 54/18640 | SWRS 50-15-1000 | 10 | 54/37100 | SPS 716 | 9 | 54/73442 | TWM 127 | 13 |
| 54/12052 | C63-25 | 10 | 54/31016 | SPS 863 | 1 | 54/37101 | SPS 832 | 9 | 54/73443 | TWM 191 | 13 |
| 54/12053 | C76-30 | 10 | 54/35012 | SPS 745 | 12 | 54/37102 | SPS 975 | 9 | 86/43489 | SPS 115 | 2 |
| 54/12054 | C20-8 | 10 | 54/36100 | SPS 081 | 9 | 54/37108 | SPS 353 | 12 | 86/43498 | SPS 116 | 2 |
| 54/120989 | TM122-6-55 | 2 | 54/36101 | SPS 109 | 5 | 54/37114 | SPS 944 | 7 | 86/43499 | SPS 117 | 2 |
| 54/120991 | SPS 701 | 2 | 54/36102 | SPS 110 | 5 | 54/37115 | SPS 916 | 9 | 86/44013 | SPS 696 | 2 |
| 54/121906 | TWM 381 RED | 13 | 54/36103 | SPS 111 | 5 | 54/37120 | SPS 703 | 8 | 86/44017 | SPS 700 | 3 |
| 54/13658 | SPS 077 | 10 | 54/36106 | SPS 114 | 5 | 54/37121 | SPS 704 | 8 | 86/44019 | SPS 695 | 3 |
| 54/15289 | SPS 099 | 4 | 54/37005 | SPS 095 | 4 | 54/37122 | SPS 705 | 8 | 86/44021 | SPS 699 | 3 |
| 54/15759 | SPS 079 | 9 | 54/37009 | SPS 075 | 8 | 54/37123 | SPS 706 | 8 | 86/4810 | SPS 738 | 11 |
| 54/158116 | TM130-8-55 | 2 | 54/37012 | SPS 101 | 9 | 54/37124 | SPS 707 | 8 | 87/10037 | SPS 698 | 11 |
| 54/15846 | SPS 709 | 8 | 54/37052 | SPS 096 | 10 | 54/37125 | SPS 747 | 7 | 87/4811 | SPS 739 | 11 |
| 54/15848 | SPS 710 | 8 | 54/37053 | SPS 097 | 10 | 54/37126 | SPS 851 | 12 | 87/4812 | SPS 740 | 11 |
| 54/15849 | SPS 735 | 11 | 54/37054 | SPS 098 | 10 | 54/37127 | SPS 852 | 12 | 87/4813 | SPS 897 | 11 |
| 54/15852 | SPS 736 | 11 | 54/37060 | SPS 1001 | 11 | 54/37128 | SPS 853 | 12 | 87/64087 | SPS 983 | 6 |
| 54/15853 | SPS 737 | 11 | 54/37061 | SPS 1002 | 11 | 54/37139 | SPS 895 | 12 | 87/64088 | SPS 984 | 6 |
| 54/15857 | SPS 102 | 9 | 54/37062 | SPS 1000 | 11 | 54/37140 | SPS 932 | 12 | 87/64089 | SPS 985 | 6 |
| 54/15870 | SPS 071 | 8 | 54/37070 | SPS 720 | 10 | 54/37141 | SPS 936 | 12 | | | |
| 54/15871 | SPS 072 | 8 | 54/37074 | SPS 717 | 9 | 54/37142 | SPS 949 | 12 | | | |
| 54/15872 | SPS 074 | 8 | 54/37077 | SPS 719 | 8 | 54/37143 | SPS 972 | 12 | | | |
| 54/15873 | SPS 100 | 4 | 54/37078 | SPS 718 | 8 | 54/37144 | SPS 973 | 12 | | | |

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