Global Marine

CATALOGUE

UJ & UQJ TOOLS & EQUIPMENT

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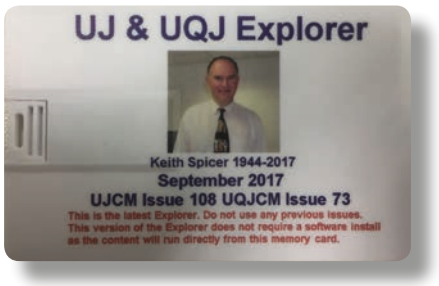
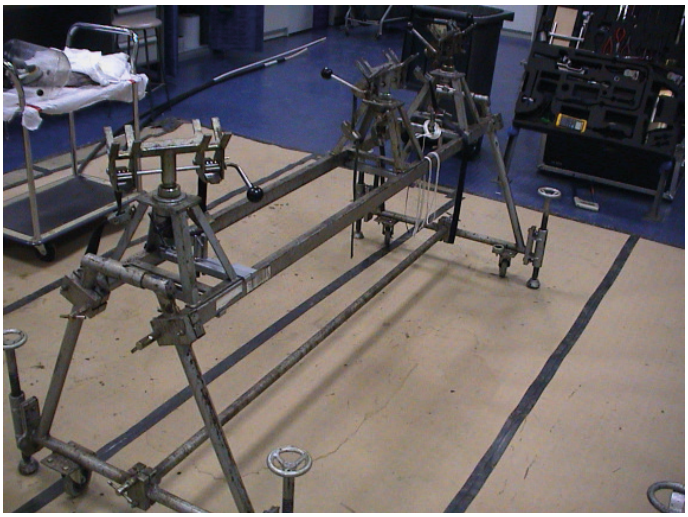
UJ Core Equipment

UJ & UQJ Explorer USB

USB containing all the jointing manuals and other documentation for Universal Jointing Consortium Qualified Cables. It is only available from the UJ Consortium on an annual subscription basis.

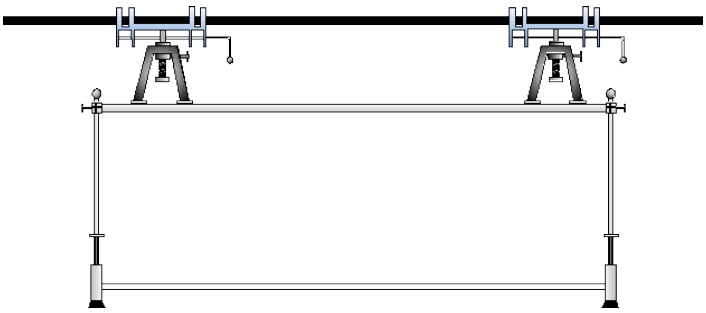
Please contact the UJ Consortium Coordinator via the website: www.UJConsortium.com.





Preparation Frame (FRM002AA)

Support frame for holding and supporting the cable whilst prepared for jointing to the second cable. Ideally, two preparation frames are required; one for each cable.



Armour Joint Tool Kit (KIT101AA)

If the cable is an armoured variety, a certain quantity of armour wires must be removed and unlaid before work commences on the lightweight section. The Armour Joint Tool Kit contains the tools required for this operation.

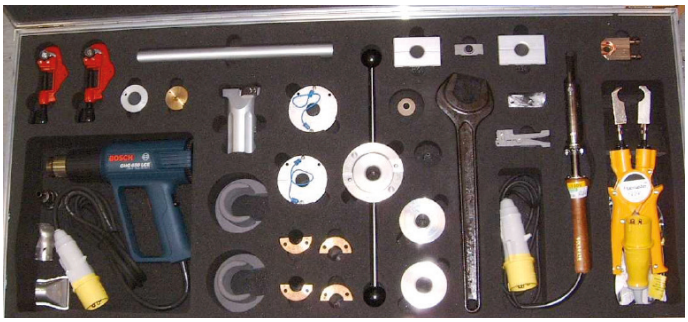
Please note that these tools will get contaminated with armour bitumen and are kept separate from the other hand tools in KIT100AA.

UJ Core Equipment

UJ Tool Kit (KIT100AA)

Tool kit containing all the hand and power tools required for general use during the construction of the Universal Joint. The wide-ranging contents include grinders, drills, Dremels, micrometers, a complete range of hand tools and all the specific tooling required for UJ.

Note: photo shows top layer only

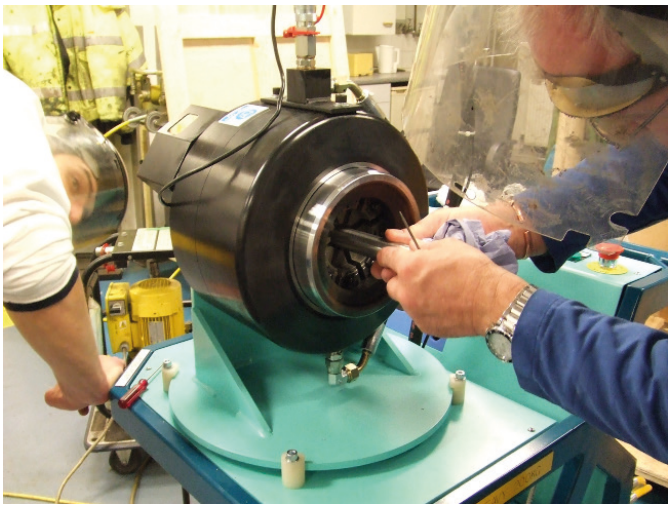


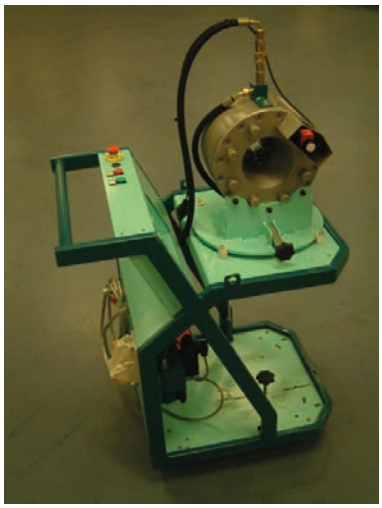
End Specific Tool Kits

Each cable type has a dedicated tool kit that contains the requisite tooling for carrying out specific operations connected with that cable. One end specific tool kit is required for each cable type that will need to be jointed.

Dimension Set Press (PRS100AA)

The majority of UJ cables require the use of a swaged or pressed ferrule for securing the strand wires in the Universal Joint and reinstating the parent strength of the cable. Different cables require different swaged dimensions and the Dimension Set Press allows the jointer to pre-set the final swaged dimensions of the ferrule. When the hydraulic pump is operated, the press swages the ferrule to the pre-set dimensions with no further adjustment.





UJ Core Equipment

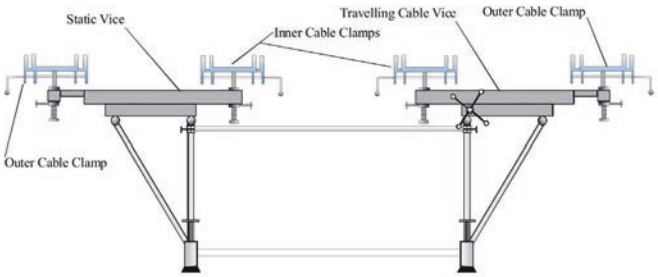
Enerpac Hydraulic Pump (PUP009AA)

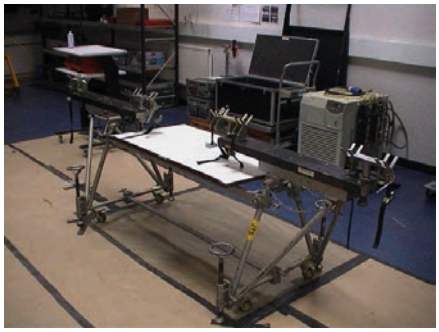
Electrically powered hydraulic pump used to power both the Dimension Set Press and the 80 Ton Armour Press.

A limit switch allows the press to be pre-set to the required pressure.

Jointing Frame (FRM001AA)

When the two cables have been prepared in the Preparation Frames, they are transferred to the Jointing Frame for the common jointing operations such as fibre splicing and moulding. There are two ends to the frame, both with cable vices; the static end and the dynamic end. As the names suggest, the dynamic end can be moved towards the static end to achieve the accurate locations required during the jointing process.





Fibre Fusion Splicer (UJS-S200) – K14

The fibre fusion splicer provides the means to splice the fibres together with minimum loss. It is a highly sophisticated piece of equipment that allows all splicing parameters to be adjusted to the requirements of the many fibre types. The kit also contains the cleaver which cleaves the fibre end to a high degree of precision and the printer, which provides a written record of the splice data. The splicer contains a built-in oven for shrinking the heat-shrink fibre splices once completed.

UJ Core Equipment

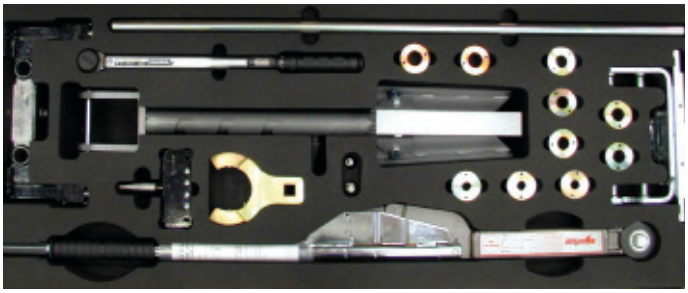
Fibre Fusion Splicer Tool kit (UJS-S200) – K15

Kit containing the supplementary equipment/tools that are used with the UJS-S100 splicer for UJ splicing.

Splicing Table (TBL005AA)

The Splicing Table locates on the Jointing Frame during the fibre splicing operation and is large enough to accommodate all the fibre splicing equipment and the full length fibres before they are wrapped in the joint.

UJ Torque Equipment Kit for KIT09001 & KIT09002 Technology (KIT102AA)



UJ Torque Equipment Kit for KIT09002 Technology (KIT140AA)

These kits contains all the torque wrenches and associated support equipment for securing the Universal Joint bolts and fixings to the correct torque. These kits are for both KIT09001 and KIT09002 technology.

UJ Core Equipment

Joint Encapsulation (Moulding)

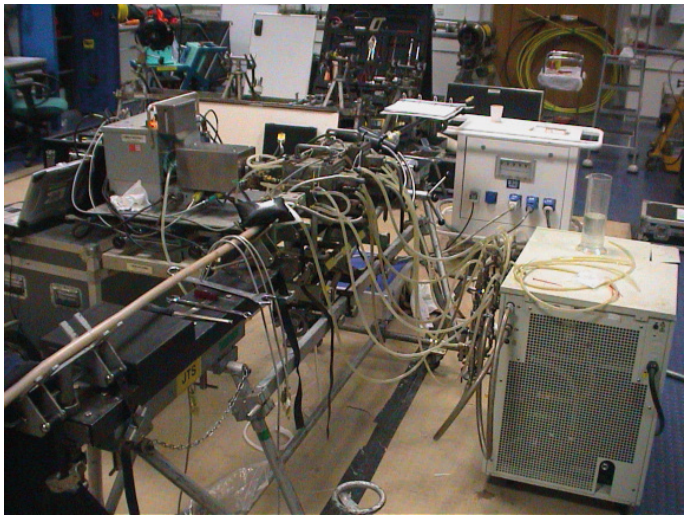
To prevent water ingress in the Universal Joint when it is submerged, it can either be moulded by the injection of molten polyethylene or sealed with a modular heatshrink moulding.

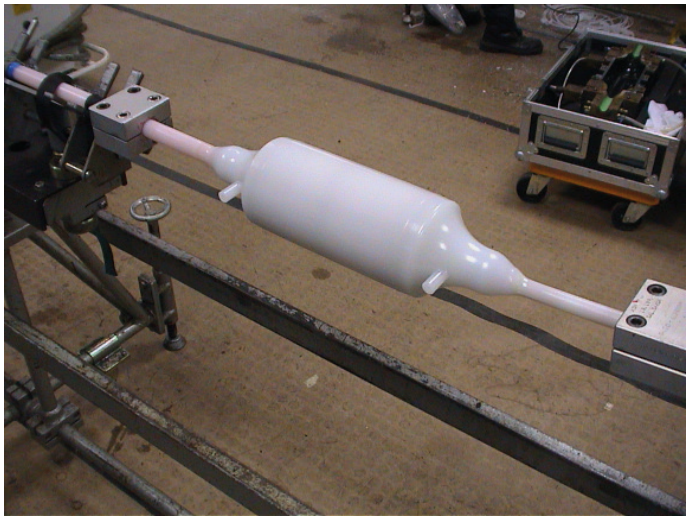
Cables that are powered are always injection moulded.

Cables that are unpowered can be injection moulded or modular heatshrink moulded depending on the qualification process. The majority of cables are injection moulded.

Depending on the specific cable requirements, the mandatory equipment will either be Injection Moulding Technology or Modular Heatshrink Moulding Technology.

Injection Moulding Technology



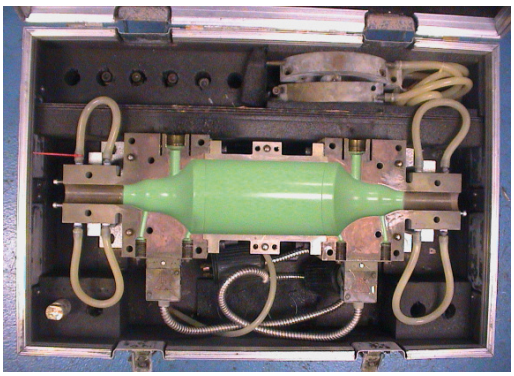


Moulding Jack (JAK001AA)

Scissor jack that bolts to the Jointing Frame and supports the Joint Housing Mould during the moulding process. It allows the mould to be set to the correct height for the two cables to be moulded.

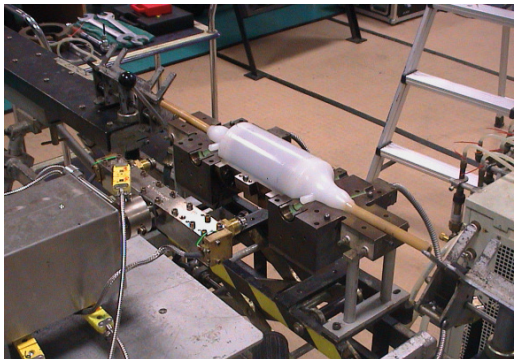
UJ Core Equipment

Joint Housing Mould (MLD029AA)



The Joint Housing Mould is the mould cavity containing both cable ends and the Universal Joint which is connected to the moulding equipment for the injection of molten polyethylene.

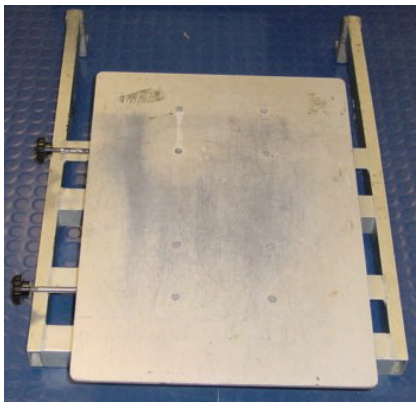
It is a complex structure manufactured to very high tolerances and is lined with PTFE to prevent polyethylene adhering to the mould.



The mould is in two halves, top and bottom and each half contains water cooling tubes for the circulation of cooling water.

The mould also contains heating elements.

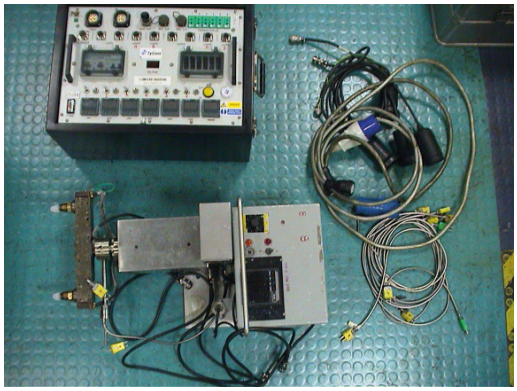
Note that the mould inserts for the various cable diameters are located in the end specific tool kits.



Moulding Table (TBL001AA)

Like the Splicing Table, the Moulding Table also locates on the Jointing Frame during the moulding process and supports the SAMS polyethylene injection equipment.

SAMS Moulding Equipment (A9Ce)



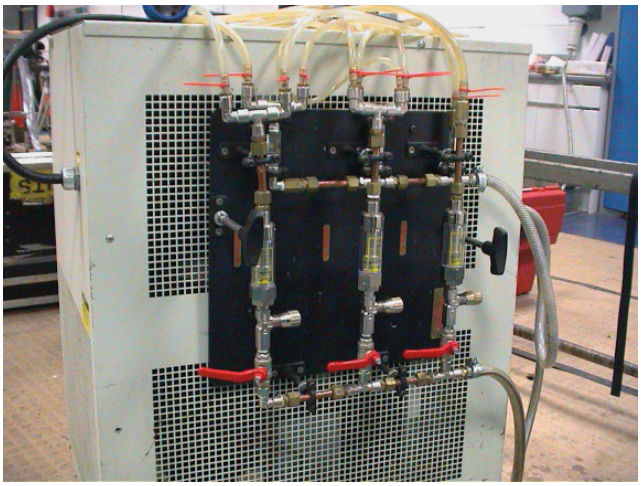
Kit containing all the polyethylene injection moulding equipment with the exception of the C-SAMS lap top computer, software and water cooling equipment.

The software is contained on the UJ Explorer USB. Any laptop can be used although a ruggedised version is recommended.

UJ Core Equipment

C-SAMS/SAMS Water Chiller Assembly (A13C)

Provides cooling water for the mould. It is used in conjunction with KIT A14C.



C-SAMS/SAMS Water Manifold Assembly Kit (A14C)

Kit containing the cooling interface assembly connected between the Chiller and the Mould. Also controls the water flow rate through the mould.

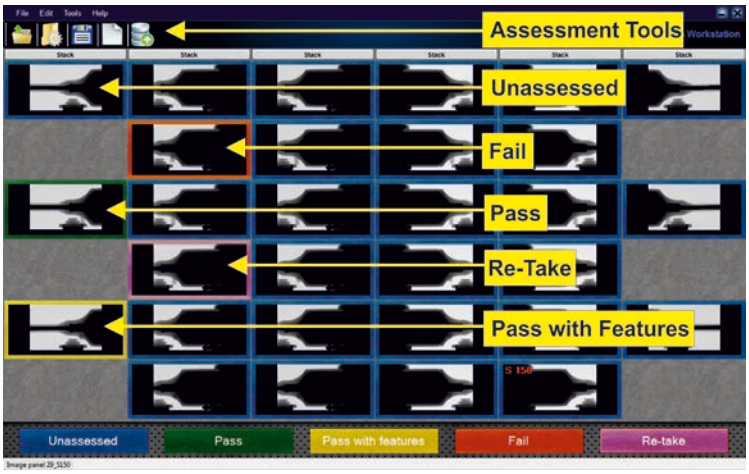
Digitial X-Ray Camera DXr1 (CAM010AA)

The UJ Polyethylene Moulding has to conform to very high inspection standards to ensure that it does not contain voids, inclusions or other criteria that may affect its performance when powered at extreme sea pressures. To assess the quality, a quantity of radiographs are taken after moulding. The Digital X-ray Camera DXr1 has been specially designed to take the requisite radiographs at the appropriate angles and positions around the moulding.

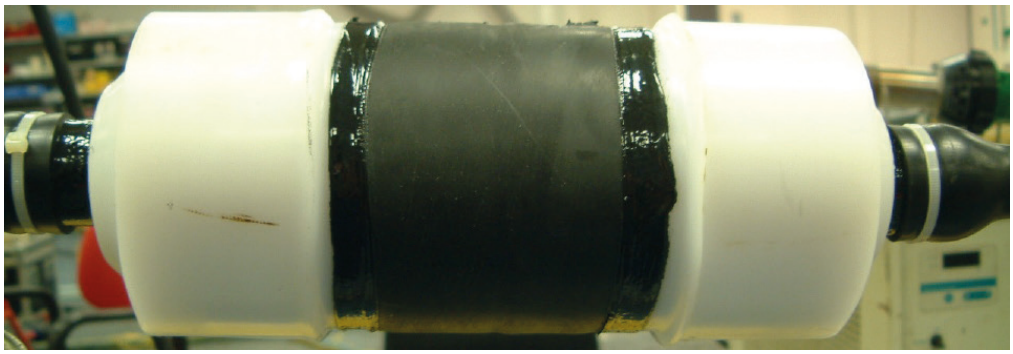
UJ Core Equipment

Digitial X-Ray Camera DXr1 (CAM010AA) - continued

For optimum results, the camera should be connected to the local network and as soon as the images are available, they are transferred to a folder on the local network for storage and assessment. The images are assessed using bespoke software on a remote computer (not supplied) which is also connected to the local network. No chemicals, films or graticules viewers are required when using the DXr1. Assessed mages can be annotated, stored on digital media and emailed. The assessment software is a licensed product and is supplied with the camera.



Modular Heatshrink Moulding Technology



Hot Air Gun Kit (KIT104GM)

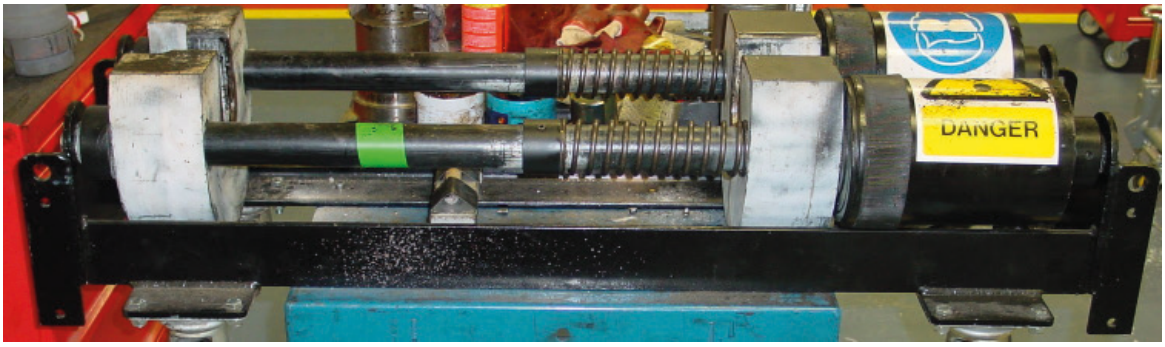
Hot air gun shrinking is now the recommended technology. This kit contains the hot air gun and ovens for shrinking the heatshrink encapsulation.

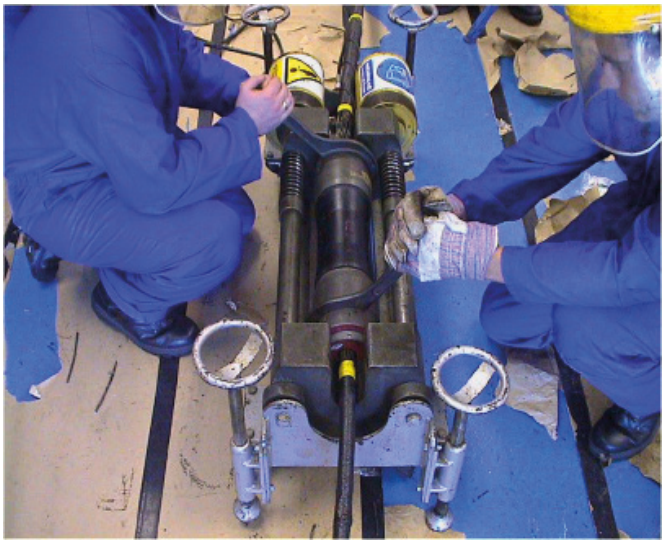
UJ Core Equipment

80 Ton Armour Press (TOL034AA)

When the joint has been x-rayed, the joint is completed by the installation of the protection components. In the case of armoured joints, the armour components have to be assembled under pressure in the 80 Ton Armour Press in conjunction with the electric hydraulic pump (PUP009AA).

The standard press adapters are supplied in this kit, whilst the cable specific adapters are supplied in the cable end specific tool kits.





UJ Optional Equipment
Moulding

C-SAMS Controller Assembly (A9Ce-1A)

Kit containing only the C-SAMS Controller Assembly (ethernet).

C-SAMS Extruder Assembly (A9C-2A)

Kit containing the C-SAMS Extruder Assembly and the Interconnection Leads.

C-SAMS Extruder Assembly (A9C-2B)

Kit containing the C-SAMS Extruder but with no Interconnection Leads.

C-SAMS Interconnection Leads (A9C-3)

Kit containing only the C-SAMS Connection Leads.

C-SAMS Extruder Manifold Screw Kit (A11S)

Kit containing replacement screws for the Extruder Manifold.

C-SAMS/SAMS Water Manifold Flow Meter Upgrade Kit (A14D)

Upgrades the Water Manifold to include a Flow Meter.

SAMS Spare Parts Kit (A15)

Kit containing spare parts for earlier CIMAC SAMS Moulding Equipment and is not applicable for C-SAMS.

C-SAMS Spare Parts Kit (A24Ce)

Kit containing spare parts for the C-SAMS Moulding Equipment (ethernet).

C-SAMS Spare Parts Upgrade Kit (A15D)

Upgrade kit for Kit A15C.

C-SAMS/SAMS Maintenance Tool Kit (A16C)

Maintenance kit for both SAMS & C-SAMS Moulding Equipment.

C-SAMS Extruder Nozzle Kit (A19)

Kit containing a replacement Nozzle for the C-SAMS Extruder.

UJ Optional Equipment
Moulding

Joint Housing Mould Spares Kit (KIT215AA)

Kit containing spare parts for the Joint Housing Mould (MLD029AA).

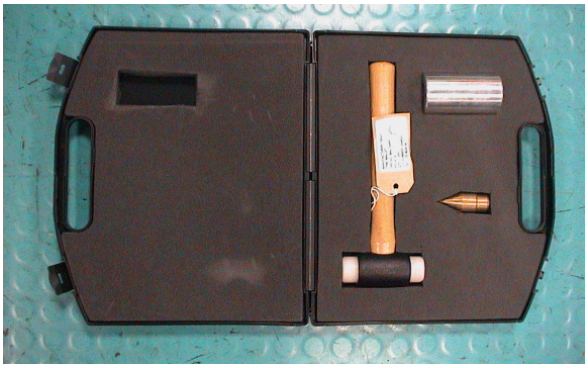
Includes heaters and mould bolts. Includes KIT214AA.

UJ Mould Screw Kit (KIT214AA)

Kit containing a complete set of screws for the Joint Housing Mould (MLD029AA). This is also included in KIT215AA.

Mould Block Alignment Kit (KIT094GM)

To ensure continuity of successful mouldings, it will be necessary to periodically re-align the different elements of the Joint Housing Mould (MLD029AA). The Mould Block Alignment Kit contains a surface plate and the requisite tools for this maintenance work.



Mould Insert Repair Kit (KIT119AA)

Because of the different diameters of cables, they require mould inserts to ensure a perfect fit in the Joint Housing Mould. These inserts can become distorted with time and the Mould Insert Repair Kit contains the tools to carry out the necessary refurbishment.

UJ Optional Equipment
Moulding

X-Ray Camera Spares Kit (145AA)

Kit containing a range of spare parts to carry out minor repair and replacement work on the DXr1 X-Ray Camera.

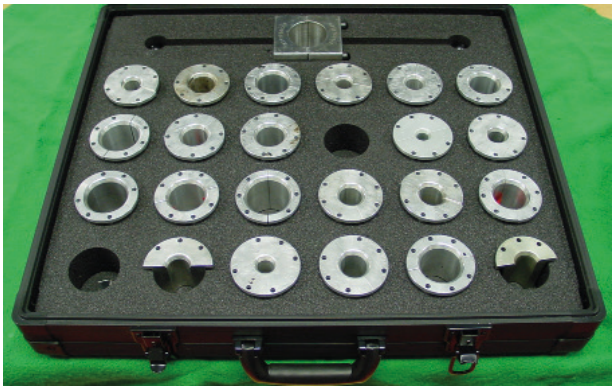
UJ Optional Equipment
UJ Consortium Tool Kit

UJC UJ/UC/UQJ Cable Stripper Kit (KIT160AA)

The removal of long lengths of polyethylene insulation can be time consuming. The UJ Motorised Cable Stripper can carry out this operation in a fraction of the time. It contains a range of inserts or bushes to locate on a wide range of cables, UJ & UQJ.

Armour Reforming Tool Kit (KIT107GM)

During armour reinstatement, it is essential that the armour wires are re-laid in their original helical formation. Although normally carried out with a variety of hand-tools, the Armour Reforming Tool refines this operation to ensure consistent armour wire re-laying. It contains a range of inserts or bushes to locate on a wide range of cables, UJ & UQJ.



UJ Optional Equipment
Cable & fibre package preparation

Heated Die Elastomer Tool kit (A6)

This kit is required for Hytrel packaged cables only. It contains a range of dies for different cable types and removes the fibre package by heat and applied tension.

Heated Die Elastomer Spares Kit (A7)

Kit containing spares for the Heated Die Elastomer Stripper (A6).

HDES Precision Die Holder Kit (KIT248AA)

An enhancement to KIT A6 and contains Die Holders and precision Fluorosint Dies for an improved removal of the hytrel package.

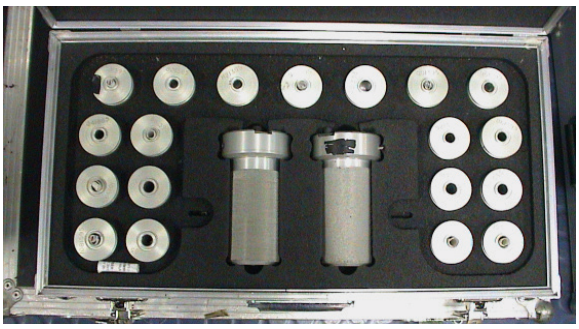
4-Gun Hytrel Stripper

This kit removes the hytrel package (on specific cables only) by a combination of heat, compressed air and controlled movement of the stripping head along the package. This equipment is no longer available.

SL/NL Fibre Proof Test Kit (A8)

Kit containing the equipment to carry out the fibre proof test on hytrel packaged cables after the removal of the hytrel by the use of the HDES or 4-Gun Stripper.

Seal Location Cutter Tool kit (KIT110AA)

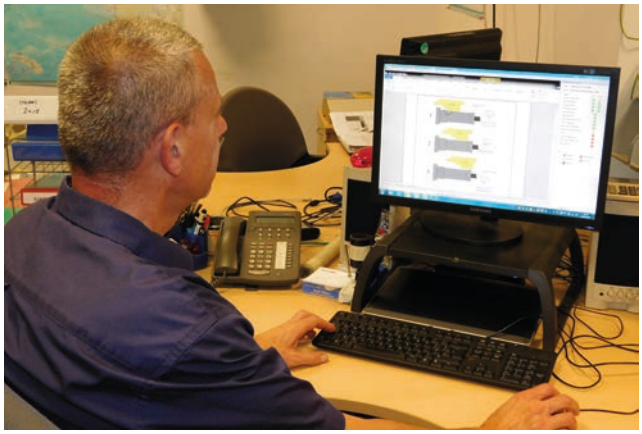


Traditionally, the polyethylene shoulder for the location of the PEEK Seal was carried out using tooling that located on the polyethylene. In cases where the polyethylene is eccentric, the PEEK Seal can be a poor fit on the shoulder. The tooling in the Seal Location Cutter Tool kit is an enhancement to the traditional method as it locates on the copper tube and not on the polyethylene, thus ensuring a consistent cut and improved fit for the PEEK Seal. The kit contains adapter plates for the majority of cables employing PEEK Seals.

UJ Optional Equipment
Miscellaneous

JADE

JADE is dual-purpose software programme for generating bespoke, mainly pictorial construction manuals for UJ & UQJ and recording all joint and testing data during the jointing process. An information pack containing a video is available to highlight the facilities within JADE.



Fume Extraction Kit (KIT216AA)

This kit is for the extraction of solvent fumes from the immediate jointing area. It may be discontinued in the near future.

KIT09001 Sleeve Fitting Kit (KIT112GM)

In KIT09001 technology, the polyethylene sleeve has to be pre-fitted over the pressure sleeve. The KIT09001 Sleeve Fitting Kit provides the tooling to carry out the fitting in a clean and controlled way.

UJ/UQJ Spares Kit (KIT19000)

KIT19000 is not a tool kit but a piece part spares kit. It contains a large range of commonly used screws, washers, seals and other small parts that can be lost or damaged during the jointing process. Having such a useful range of spares in one kit reduces the risk of broaching another end specific kit for minor items during a repair.

UJ Optional Equipment
Cable specific

SL Screen Termination Tool kit (A1)

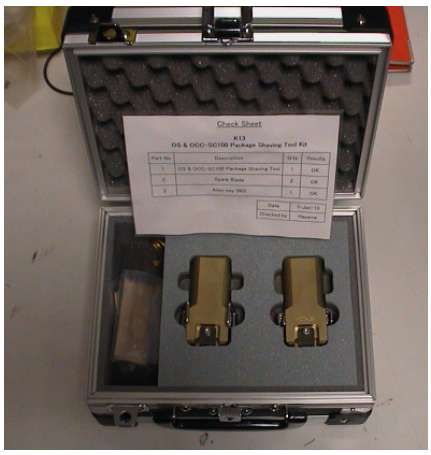
Kit containing the tooling required to install the Tyco SL17 & SL21 Mechanical Screen Termination (not Heatshrink).

C-Tube Removal Tool (BRZ009AA)

This tool is used to remove the copper tube located on the Hytrel Package of ASN NL cables. It is also available as KIT313AA for UQJ use on ASN S3 cables.

OS Package Shaving Tool (K13) (For OS cable)

The OS Package Shaving Tool is used to assist in stripping the fibre package on OS cables by shaving a series of flats on the package.



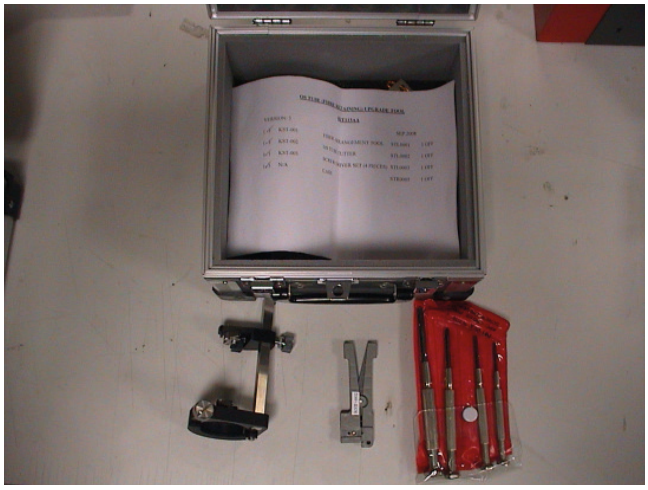
KCS OS & OCC SC-100 Solvent Fibre Extraction Kit (KIT249AA)

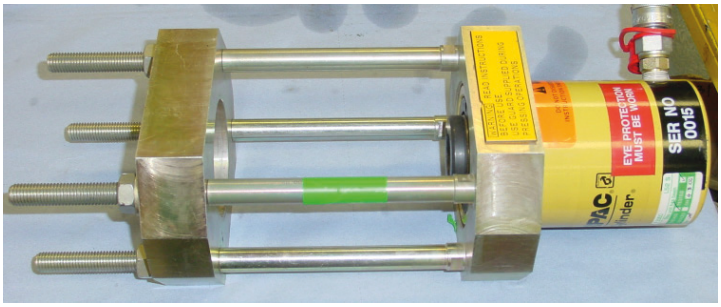
The OS & OCC SC-100 Solvent Fibre Extraction Kit is used to assist in stripping the fibre package on OS cables by the use of solvent.

UJ Optional Equipment
Cable specific

KCS OS TUBE Fibre Retaining Tool kit (KIT113AA)

The fibres in KCS OS TUBE cables were originally allowed movement (long wrap method). An alternative procedure was developed to retain the fibres and an additional tool kit is required when using this (recommended) method.



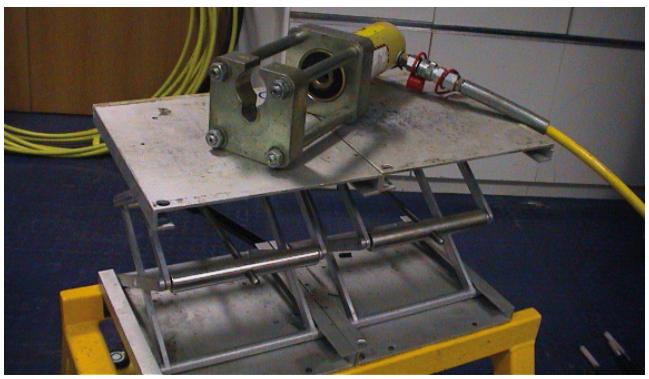


20T Ferrule Press & Hydraulic Pump (KIT302AA)

Although most UJ cables use the radial pressing technique (Dimension Set Press), some cables require a longitudinal press using the BD011L01 Press which is also used for UQJ and is contained in KIT302AA. This kit also contains a hand operated hydraulic pump. This press is used for Tyco SL17 and SL21L cables.

12 Ton Ferrule Press (PRS006AA) (For NSW 16C Cables)

NSW 16C cables also use a longitudinal press to press the ferrule. This press (PRS006AA) uses the hand operated pump located in KIT302AA.



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UQJ Cable Jointing Stand (KIT310AA)

UQJ support frame for preparing and jointing the cables. A minimum of two Cable Jointing Stands are required. If there is a possibility that UJ cables will also be jointed, it is recommended that FRM001AA & FRM002AA are used in preference.

Armour Joint Tool Kit (KIT305AA)

If the cable is an armoured variety, a certain quantity of armour wires must be removed and unlaid before work commences on the lightweight section. The Armour Joint Tool Kit contains those tools required for this operation. Please note that these tools will get contaminated with armour bitumen and are kept separate from the other hand tools in KIT301AA.

UQJ Tool Kit (KIT301AA)

Comprehensive kit containing all the hand and power tools required for general use during the construction of the Universal Quick Joint. If UJ jointing capability is also required, then KIT100AA and KIT500AA should be purchased instead of KIT301AA and KIT307AA.

UJ Common Specialised Tools (KIT307AA)

Kit containing a range of specialised UQJ tools that are not part of KIT301AA. If UJ jointing capability will also be required, then KIT100AA and KIT500AA should be purchased instead of KIT301AA & KIT307AA.

End Specific Tool Kits

Each cable type has a dedicated tool kit that contains the requisite tooling for carrying out specific operations connected with that cable. One end specific tool kit is required for each cable type that will need to be jointed.

UQJ Core Equipment

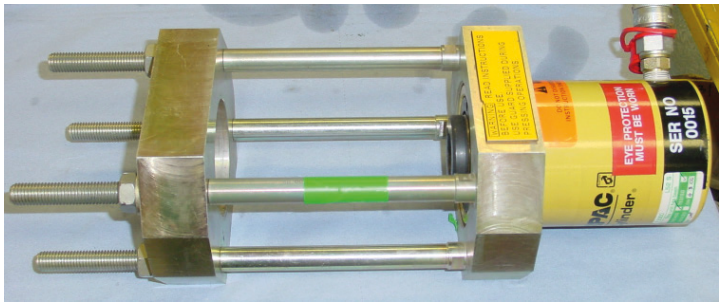
Global Marine

20Ton Ferrule Press and Hydraulic Pump (KIT302AA)

Certain UQJ cables require the use of the 20 Ton Ferrule Press for pressing the Plug and Socket. The kit contains the Ferrule Press (BD011L01) and also the hand operated hydraulic pump (PUP017AA).

UQJ Cables requiring the 20 Ton Ferrule Press: Tyco SL17, ASN S3, ASN URC-2, NSW Minisub CT, NSW Minisub SAi, AEI CSDH

The press is NOT required for: Pirelli MF, ASN & Nexans URC-1.



Fibre Fusion Splicer (UJS-S100) – K9

This is the fibre fusion splicer that provides the means to splice the fibres together with minimum loss. It is a highly sophisticated piece of equipment that allows all splicing parameters to be adjusted to the requirements of the many fibre types. The kit also contains the cleaver which cleaves the fibre end to a high degree of precision and the printer, which provides a written record of the splice data. The splicer contains a built-in oven for shrinking the heat-shrink fibre splices once completed. This is the UJ fibre splicer and although recommended for UQJ, it is not mandatory. If another splicer is used, the customer would be responsible to qualify their own fibre splice combinations.

Fibre Fusion Splicer Tool kit (UJS-S100) – K10

Kit containing the supplementary equipment/tools that are used with the UJS-S100 splicer for UJ splicing.

UQJ Core Equipment

Global Marine

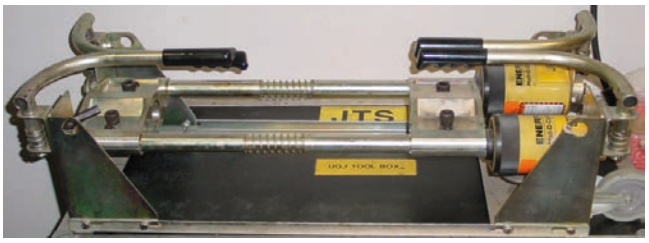
Fibre Splicing Equipment (KIT303AA)

Kit containing both the K9 and K10 kits listed above, the hytrel stripping equipment and fibre proof testing equipment. Only Hytrel packaged cables require the Hytrel stripping and proof testing equipment so if the application is loose-tube, only kits K9 & K10 will be required. The Fibre Proof Testing equipment is also available separately as Kit A8 and the Hytrel Stripping Equipment as Kits A6 & A7 (see UJ Optional Equipment).

Cables requiring fibre proof testing equipment: ASN S3, Tyco SL12

UQJ Heatshrink Tool Equipment (KIT304AA)

All UQJ cables are un-powered and hence use heat-shrink encapsulation. This kit contains the hot air equipment for heat-shrinking the encapsulation.



40 Ton Armour Press (KIT311AA)

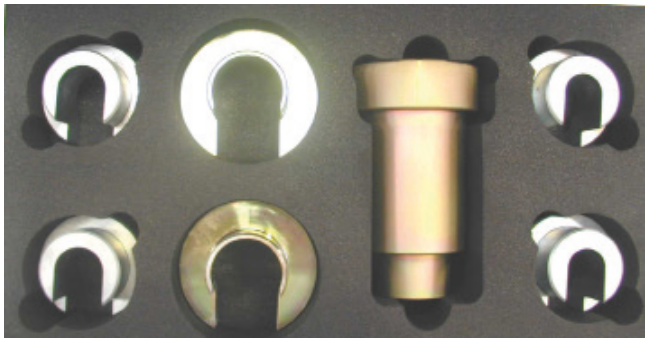
The Universal Quick Joint is completed by the installation of the protection components. In the case of armoured joints, the armour components have to be assembled under pressure in the 40 Ton Armour Press in conjunction with the hand operated hydraulic pump (PUP017AA), supplied in KIT302AA.

Alternatively, if UJ jointing capability is also required, an 80 Ton Press (TOL034AA) and Electric Hydraulic Pump (PUP009AA) can be used in conjunction with KIT500AA.

UQJ Adapter Case Assembly (KIT312AA)

Case containing the press adapters for the 40 Ton Armour Press.

Alternatively, if UJ jointing capability is also required, an 80 Ton Press (TOL034AA) and Electric Hydraulic Pump (PUP009AA) can be used. The 80 Ton Press Adapters are located in KIT500AA.



UQJ Optional Equipment
General

UJ Motorised Cable Stripper (KIT105GM)

The removal of long lengths of polyethylene insulation can be time consuming. The UJ Motorised Cable Stripper can carry out this operation in a fraction of the time. It contains a range of inserts or bushes to locate on a wide range of cables, UJ & UQJ.

Armour Reforming Tool Kit (KIT107GM)

During armour reinstatement, it is essential that the armour wires are re-laid in their original helical formation. Although normally carried out with a variety of hand-tools, the Armour Reforming Tool refines this operation to ensure consistent armour wire re-laying. It contains a range of inserts or bushes to locate on a wide range of cables, UJ & UQJ.

If you are already a UJ User, you can upgrade your existing UJ Equipment/Tools to perform UQJ with: UQJ General Hand Tools (KIT500AA). UJ KIT100AA will also be required.

The 40 Ton Armour Press (KIT311AA) will not be required as all the press adapters for the 80 Ton Armour Press are included in KIT500AA.

UQJ Optional Equipment
Cable specific

UQJ C-Tube Removal Unit (KIT313AA)

This tool is used to remove the copper tube located on the Hytrel Package of ASN S3 cables. It is also available as BRZ009AA for UJ use on ASN NL cables.

For further information on Global Marine please visit:
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