

Electricity Specification 400C29

Issue 9 November 2021

Connectors and Fittings for Overhead Line Conductors



Amendment Summary

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1 Scope

This Specification comprises general and technical requirements for connectors and fittings for overhead line conductors used on the electricity distribution network (Network) owned by Electricity North West Limited, as Distribution Licensee.

NOTE: that helical fittings are covered in Specification ES400H2.

NOTE: that the conductors required for lines constructed to ES400O2, ES400O3 and ES400O4 are specified in ES400C3.

2 Definitions

Approval	Sanction by the Electricity North West Overhead Line Circuits Manager that specified criteria have been satisfied
Contract	The agreement between Electricity North West and the Contractor for the execution of the Works including therein all documents to which reference may properly be made in order to ascertain the rights and obligations of the parties under the said agreement.
Contractor	The person or person's firm or company, including personal representatives, successors and permitted assigns, who's Tender has been accepted by Electricity North West.
Specification	The Specifications and schedules (if any) agreed by the parties for the purpose of the Contract.
Sub-Contractor	Any person (other than the Contractor) named in the Contract for any part of the Works or any person to whom any part of the Contract has been sub-let with the consent in writing of the Electricity North West Overhead Line Circuits Manager, and the legal representatives, successors and assigns of such person.
Supplier	Any person or person's firm or company who supplies goods to Electricity North West or to its Contractor.
Tender	An offer in writing to execute work or supply goods at a fixed price.
Tenderer	The person or person's firm or company, including personal representatives, successors and permitted assigns, invited by Electricity North West to submit a Tender.

3 General Requirements for Approvals and Testing

3.1 Product not to be Changed

No change in the product, packaging or labelling shall be made after Approval has been granted without prior notice to the Electricity North West Overhead Line Circuits Manager, and receipt of a written agreement to the proposed change from the Electricity North West Overhead Line Circuits Manager.

3.2 Electricity North West Technical Approval

The Tenderer shall submit, with this Tender, proposals for testing which will demonstrate, to the satisfaction of the Electricity North West Overhead Line Circuits Manager, compliance with this Specification. Such tests shall be carried out without expense to Electricity North West.

Alternatively, technical reports and other data may be submitted that the Tenderer considers will demonstrate, to the satisfaction of the Electricity North West Overhead Line Circuits Manager, compliance with this Specification. Acceptance of this evidence shall be at the discretion of the Electricity North West Overhead Line Circuits Manager but will not be unreasonably withheld.

Approval shall be 'factory specific' and is not transferable to another factory without the written Approval of the Electricity North West Overhead Line Circuits Manager.

The Supplier and product shall comply with all the relevant requirements of Electricity North West documents EPD311 and CP311.

3.3 Quality Assurance

The Tenderer shall confirm whether or not Approval is held in accordance with a quality assurance scheme accredited under ISO 9000. If not, the Tenderer shall submit a statement of the quality assurance procedures employed to control the quality of the product, including the performance of Suppliers and Sub-Contractors.

The right is reserved for the repeat of such tests, from time to time, that the Electricity North West Overhead Line Circuits Manager may deem to be reasonably necessary to demonstrate continued compliance with the Specification.

The Tenderer shall submit, with the Tender, a list of tests and inspections which are carried out on the product prior to despatch which shall demonstrate, to the satisfaction of the Electricity North West Overhead Line Circuits Manager, fitness for installation and service.

The Tenderer shall provide free of charge to Electricity North West such samples as may, in the opinion of the Electricity North West Overhead Line Circuits Manager, be reasonably required for inspection and/or retention as quality control samples. The Electricity North West Overhead Line Circuits Manager will confirm the requirement for samples at the time of Tendering.

The right is reserved for inspections to be made of Tenderer's facilities, from time to time, as deemed reasonably necessary by the Electricity North West Overhead Line Circuits Manager to ensure compliance with this Specification and any Contract of which it forms a part.

The Tenderer shall submit, with the Tender, such details of product packaging disposal, as will enable Electricity North West to comply with the requirements of BS EN ISO 14001 - Environmental Management Systems.

3.4 Formulation

The Tenderer shall submit, with the Tender, such details of the formulation and use of the product and associated substances as will enable Electricity North West to comply with the obligations of the Health and Safety at Work Act 1974 and the Control of Substances Hazardous to Health Regulations 2002, in the use, storage and disposal of the product. The Tenderer may stipulate, prior to submission of such information, that it is to remain confidential, and the Electricity North West Overhead Line Circuits Manager will, if requested, confirm agreement to this prior to receipt of the information.

3.5 Identification Markings

The Tenderer shall submit, with the Tender, details of markings which it is proposed to apply to the product or packaging to identify manufacturing batches or items. The forms and content of such markings shall be subject to the Approval of the Electricity North West Overhead Line Circuits Manager and shall in all cases include the Electricity North West approved description and commodity code number.

The Tenderer shall submit, with the Tender, such details of marking gross weight on components, assemblies and packages, as will enable Electricity North West to comply with the Health and Safety Manual Handling Operation Regulations 1992, for components, assemblies and packages supplied with a gross weight over 1kg. The forms and content of such markings shall be subject to the Approval of the Electricity North West Overhead Line Circuits Manager.

3.6 Minimum Life Expectancy

The minimum life expectancy of all products covered by this Specification is 40 years.

3.7 Product Conformity

Preference will be given to those Suppliers who can provide suitable product conformity certification to a recognised or specified standard, or an equivalent certification.

3.8 Confirmation of Conformance

The Tenderer shall complete the conformance declaration sheets in [Appendix C](#). Failure to complete these declaration sheets may result in an unacceptable bid.

4 Requirements for Type and Routine Testing

The Electricity North West Overhead Line Circuits Manager shall set out the requirement of the following tests to be carried out by the Supplier at the Supplier's cost.

4.1 Requirement for Type Tests at Suppliers Premises

These are a series of one-off type tests, which are carried out to ensure the satisfactory performance of the product design, under extremes of operating stresses, and of endurance, as may be appropriate, to be determined by the Electricity North West Overhead Line Circuits Manager.

These may or may not be destructive tests.

4.2 Requirement for Routine Tests at the Supplier's Premises

These tests may be required to be carried out on every individual unit or component, as specified, or at some regular frequency to be determined by the Electricity North West Overhead Line Circuits Manager.

The results of these tests may be required to be supplied to Electricity North West with each unit purchased or retained for inspection, at a period to be determined by the Electricity North West Overhead Line Circuits Manager.

5 Additional Requirements

All the connectors and fittings covered by this Specification are listed in [Appendix A](#). It is important to note that the Commodity Code Number (CC No) of a component defines the function of that component as per the corresponding description. In certain cases, a Supplier's product may fulfil the requirements of more than one CC No. In every such case, the Tenderer shall indicate the range of CC numbers covered by the product. Each CC No and description shall be displayed on the product (or product packaging) in accordance with [Section 3.5](#).

In [Appendix A](#), the description of an individual connector or fitting does not normally contain the material from which it is manufactured. However, the material shall be compatible with the conductor, such that:

- The electrical performance of the connector or fitting matches the electrical performance of the conductor.
- The long-term performance of the conductor/connector or fitting combination matches the minimum life expectancy of the component (refer to [Section 3.6](#)).

The Supplier shall indicate the correct tool and die required to ensure long-term performance (refer to [Appendix A](#)).

The hole sizes quoted in [Appendix A](#) are to accommodate bolt sizes of 1mm less; e.g. 13mm hole is for 12mm bolt.

Fittings shall comply with ENA TS 43-92 or BS 3288 where applicable. LV ABC fittings shall comply with ENA TS 43-14.

Additional information on individual connectors and fittings is included in [Appendix B](#) (e.g. [Appendix A3](#) dropper kits).

6 Documents Referenced

All references to documents listed below are to the latest versions, unless stated otherwise.

DOCUMENTS REFERENCED	
Health and Safety at Work Act 1974	
Control of Substances Hazardous to Health Regulations 2002	
Manual Handling Operations Regulations 1992	
BS EN ISO 9000:	Quality management systems.
BS EN ISO 14001:	Environmental management systems. Requirements with guidance for use.
BS 3288:	Insulator and conductor fittings for overhead power lines. Performance and general requirements.
ENA TS 43-14	Insulated Aerial Bundled Conductors For Low Voltage Overhead Distribution Systems – Conductor Fittings and Associated Apparatus
ENA TS 43-92	Overhead Line Fittings
CP311:	Equipment Approval Policy and Process
ES400C3:	Wood Pole Overhead Line Conductors (up to and including 132kV).
ES400H2:	Supply and Delivery of Helical Fittings.
ES400O2:	Overhead-Lines of Compact-Covered-Construction for 6.6, 11 & 33kV.
ES400O3:	Bare-Wire Overhead-Lines on Wood Poles for 11/6.6 and 33kV.

ES40004:

LV Overhead-lines of Aerial Bundled Conductor.

7 Keywords

Conductor; connector; fitting; overhead.

Appendix A – Schedule of Connectors and Fittings for Overhead Line Conductors Per Line Type

A1 ES40002 Components (Covered Conductor Lines)

DESCRIPTION	CC NO	MANUF CODE	DIE SIZE REQUIRED	TOOL
Lightning protection devices				
Conductor fitting, bail, bimetal, c/w fixings	121004			
Conductor fitting, baseplate electrode, Cu, lightning protection device	119410			
Conductor fitting, baseplate, lightning protection device	119400			
Conductor fitting, electrode (11kV), bimetal, lightning protection device	119420			
Conductor fitting, electrode (33kV), bimetal, lightning protection device	121030			
Conductor fitting, lightning protection device (11kV), Al, compacted covered conductor, 50mm ²	121001			
Conductor fitting, lightning protection device (11kV), Al, compacted covered conductor, 120mm ²	121018			
Conductor fitting, lightning protection device (11kV), Al, compacted covered conductor, 185mm ²	121013			
Conductor fitting, lightning protection device (33kV), Al, compacted covered conductor, 120mm ²	121014			
Conductor fitting, lightning protection device (33kV), Al, compacted covered conductor, 185mm ²	121015			

Compression dead ends

Conductor fitting, compression dead end, double tee off, 13mm hole, compacted covered conductor, 50mm ² , c/w shrouds	121022			
Conductor fitting, compression dead end, double tee off, 13mm hole, compacted covered conductor, 120mm ² , c/w shrouds	121023			
Conductor fitting, compression dead end, double tee off, 13mm hole, compacted covered conductor, 185mm ² , c/w shrouds	121024			

Full tension compression connectors

Conductor fitting, compression full tension, compacted covered conductor, 50mm ² , c/w shrouds	127285			
Conductor fitting, compression full tension, compacted covered conductor, 120mm ² , c/w shrouds	127282			
Conductor fitting, compression full tension, compacted covered conductor, 185mm ² , c/w shrouds	127290			

Non tension compression connectors

Conductor fitting, compression non tension, compacted covered conductor, 50mm ² , c/w shrouds	127269			
Conductor fitting, compression non tension, compacted covered conductor, 120mm ² , c/w shrouds	121021			
Conductor fitting, compression non tension, compacted covered conductor, 185mm ² , c/w shrouds	124910			

Insulation piercing compression connectors (IPCCs)

Conductor fitting, insulation piercing compression connector, compacted covered conductor, 50mm ² , c/w shroud	121006			
Conductor fitting, insulation piercing compression connector, compacted covered conductor, 120mm ² , c/w shroud	121003			

Conductor fitting, insulation piercing compression connector, compacted covered conductor, 185mm ² , c/w shroud	121008			
Lugs				
Conductor fitting, lug, 2-hole (13mm), right angled, bimetal, compacted covered conductor, 50mm ² , c/w shroud	176240			
Conductor fitting, lug, 2-hole (13mm), right angled, bimetal, compacted covered conductor, 120mm ² , c/w shroud	176245			
Conductor fitting, lug, 2-hole (13mm), right angled, bimetal, compacted covered conductor, 185mm ² , c/w shroud	176250			
Conductor fitting, lug, 2-hole (13mm), straight, bimetal, compacted covered conductor, 50mm ² , c/w shroud	127237			
Conductor fitting, lug, 2-hole (13mm), straight, bimetal, compacted covered conductor, 120mm ² , c/w shroud	124894			
Conductor fitting, lug, 2-hole (13mm), straight, bimetal, compacted covered conductor, 185mm ² , c/w shroud	124890			
Conductor fitting, lug, 2-hole (19mm), straight, bimetal, compacted covered conductor, 50mm ²	127245			
Conductor fitting, lug, 2-hole (23mm), straight, bimetal, compacted covered conductor, 50mm ²	127253			
Conductor fitting, lug, 2-hole (13mm), straight, compacted covered conductor, 50mm ²	124886			
Conductor fitting, lug, 2-hole (13mm), straight, compacted covered conductor, 120mm ²	124887			
Conductor fitting, lug, 2-hole (13mm), straight, compacted covered conductor, 185mm ²	176200			

Vibration dampers

Refer to ES400H2

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A2 ES40003 Components (Bare Wire Lines)

DESCRIPTION	CC NO	MANUF CODE	DIE SIZE REQUIRED	TOOL
Compression dead ends				
Conductor fitting, compression dead end, double tee off, 13mm holes, AAAC, 100mm ²	130950			
Conductor fitting, compression dead end, double tee off, 13mm holes, AAAC, 150mm ²	130960			
Conductor fitting, compression dead end, double tee off, 13mm holes, AAAC, 200mm ²	130970			
Full tension compression connectors				
Conductor fitting, compression full tension, AAAC, 50mm ²	130605			
Conductor fitting, compression full tension, AAAC, 100mm ²	130701			
Conductor fitting, compression full tension, AAAC, 150mm ²	130702			
Conductor fitting, compression full tension, AAAC, 200mm ²	130703			
Conductor fitting, compression full tension, HDCu, 38mm ²	124125			
Conductor fitting, compression full tension, HDCu, 70mm ²	130699			
Conductor fitting, compression full tension, HDCu, 100mm ²	130700			
Non tension compression connectors				
Conductor fitting, compression non tension, AAAC, 50mm ²	130842			

Conductor fitting, compression non tension, AAAC, 100mm ²	124990			
Conductor fitting, compression non tension, AAAC, 150mm ²	130675			
Conductor fitting, compression non tension, AAAC, 200mm ²	130680			
Conductor fitting, compression non tension, HDCu, 32/38mm ²	130664			
Conductor fitting, compression non tension, HDCu, 70mm ²	130850			
Conductor fitting, compression non tension, HDCu, 100mm ²	130670			
Lugs				
Conductor fitting, lug, 2-hole (13mm), right angled, AAAC, 50mm ²	131440			
Conductor fitting, lug, 2-hole (13mm), right angled, AAAC, 100mm ²	131450			
Conductor fitting, lug, 2-hole (13mm), right angled, AAAC, 150mm ²	131460			
Conductor fitting, lug, 2-hole (13mm), right angled, AAAC, 200mm ²	131470			
Conductor fitting, lug, 2-hole (13mm), right angled, bimetal, AAAC, 50mm ²	124940			
Conductor fitting, lug, 2-hole (13mm), right angled, bimetal, AAAC, 100mm ²	124942			
Conductor fitting, lug, 2-hole (13mm), right angled, bimetal, AAAC, 150mm ²	124944			
Conductor fitting, lug, 2-hole (13mm), right angled, bimetal, AAAC, 200mm ²	124938			

Conductor fitting, lug, 2-hole (13mm), right angled, HDCu, 38mm ²	124930			
Conductor fitting, lug, 2-hole (13mm), right angled, HDCu, 70mm ²	130610			
Conductor fitting, lug, 2-hole (13mm), right angled, HDCu, 100mm ²	124932			
Conductor fitting, lug, 2-hole (13mm), straight, AAAC, 50mm ²	131240			
Conductor fitting, lug, 2-hole (13mm), straight, AAAC, 100mm ²	131250			
Conductor fitting, lug, 2-hole (13mm), straight, AAAC, 150mm ²	131260			
Conductor fitting, lug, 2-hole (13mm), straight, bimetal, AAAC, 50mm ²	130620			
Conductor fitting, lug, 2-hole (13mm), straight, bimetal, AAAC, 100mm ²	130630			
Conductor fitting, lug, 2-hole (13mm), straight, bimetal, AAAC, 150mm ²	124936			
Conductor fitting, lug, 2-hole (13mm), straight, bimetal, AAAC, 200mm ²	131340			
Conductor fitting, lug, 2-hole (17mm), straight, AAAC, 200mm ²	131270			
Conductor fitting, lug, 2-hole (13mm), straight, HDCu, 38mm ²	124926			
Conductor fitting, lug, 2-hole (13mm), straight, HDCu, 70mm ²	124745			
Conductor fitting, lug, 2-hole (13mm), straight, HDCu, 100mm ²	124928			
Wedge taps				

Conductor fitting, wedge tap bail, bimetal, AAAC, 50mm ²	131185			
Conductor fitting, wedge tap bail, bimetal, AAAC, 100mm ²	131189			
Conductor fitting, wedge tap bail, bimetal, AAAC, 150mm ²	131190			
Conductor fitting, wedge tap bail, bimetal, AAAC, 200mm ²	131191			
Conductor fitting, wedge tap bail, HDCu, 38mm ²	131185			
Conductor fitting, wedge tap bail, HDCu, 70mm ²	131188			
Conductor fitting, wedge tap bail, HDCu, 100mm ²	131189			

A3 Components Common to ES40002 and ES40003

DESCRIPTION	CC NO	MANUF CODE	DIE SIZE REQUIRE D	TOOL
Backplates for compression connectors				
Conductor fitting, backplate, compression dead ends and IPCCs, c/w fixings	1210 20			
Dropper kits				
Conductor fitting, dropper kit 1 (ABS, GVR, PMT) (Dwg I-400C29-CF-001)	1248 71			
Conductor fitting, dropper kit 2 (Links above PMT) (Dwg I-400C29-CF-002)	1210 10			
Conductor fitting, dropper kit 3 (OYT, OYS) (Dwg I-400C29-CF-003)	1248 80			
Conductor fitting, dropper kit 4 (11kV cable term) (Dwg I-400C29-CF-004)	1248 83			
Earth clamps				
Conductor fitting, earth bond clamp, ≤11kV (pole-top steelwork)	1332 20			
Lugs				
Conductor fitting, lug extender, earthing pin PMT, conductor, flexible, 65mm ²	1248 84			
Conductor fitting, lug, 2-hole (13mm), 45°, LL braid, 65mm ²	1241 41			
Conductor fitting, lug, 2-hole (13mm), right angled, conductor, flexible, 65mm ²	1762 55			
Conductor fitting, lug, 2-hole (13mm), straight, conductor, flexible, 65mm ²	1248 92			

A4 ES40004 Components (ABC/Mural Lines)

DESCRIPTION	CC NO	MANUF CODE	DIE SIZE REQUIRED	TOOL
Anchor clamps				
Conductor fitting, clamp, anchor, ABC, 2 x 35mm ²	110418			
Conductor fitting, clamp, anchor, ABC, 2 x 95mm ²	110426			
Conductor fitting, clamp, anchor, ABC, 4 x 25-50mm ²	110175			
Conductor fitting, clamp, anchor, ABC, 4 x 70-95mm ²	110177			
Suspension clamps				
Conductor fitting, clamp, suspension, ABC, 2 x 35 -120mm ² / 4 x 25-120mm ² , up to 60° angle	110744			
Conductor fitting, clamp, weak link suspension, ABC	234893			
Non tension compression connectors				
Conductor fitting, compression non tension, ABC, 25mm ²	234478			
Conductor fitting, compression non tension, ABC, 25mm ² - Cu 16mm ²	127580			
Conductor fitting, compression non tension, ABC, 25mm ² - Cu 25mm ²	127581			
Conductor fitting, compression non tension, ABC, 35mm ²	234494			
Conductor fitting, compression non tension, ABC, 35mm ² - Al 25mm ²	127345			
Conductor fitting, compression non tension, ABC, 35mm ² - Al 35mm ²	127337			
Conductor fitting, compression non tension, ABC, 35mm ² - Cu 4mm ²	118818			

Conductor fitting, compression non tension, ABC, 35mm ² - Cu 16mm ²	127019			
Conductor fitting, compression non tension, ABC, 35mm ² - Cu 25mm ²	127108			
Conductor fitting, compression non tension, ABC, 95mm ²	124137			
Conductor fitting, compression non tension, ABC, 95-35mm ²	110752			
Conductor fitting, compression non tension, ABC 95mm ² - Cu 70mm ²	126861			
Full tension connectors				
Conductor fitting, compression full tension, ABC, 25mm ²	175280			
Conductor fitting, compression full tension, ABC, 35mm ²	139112			
Conductor fitting, compression full tension, ABC, 95mm ²	118524			
Insulation piercing compression connectors (IPCCs-				
Conductor fitting, insulation piercing compression connector, ABC 6-35/54mm ²	261466			
Conductor fitting, insulation piercing compression connector, ABC main 25-95mm ² , ABC tap 25-95mm ² , single bolt	127275			
Conductor fitting, insulation piercing compression connector, ABC main 25-95mm ² , ABC tap 25-95mm ² , double bolt	127276			
Conductor fitting, insulation piercing compression connector, ABC main 25-95mm ² , ABC service 4-35mm ² , single bolt	110264			

Conductor fitting, insulation piercing compression connector, ABC, 25-95mm ² /bare 30/10-100mm ² , double bolt	116548			
Lugs				
Conductor fitting, lug, 2-hole (13mm), bimetal, ABC, 25mm ² , palm	124138			
Conductor fitting, lug, 2-hole (13mm), bimetal, ABC, 35mm ² , palm	125225			
Conductor fitting, lug, 2-hole (13mm), bimetal, ABC, 95mm ² , palm	126780			
Conductor fitting, lug, 1-hole (13mm), straight, HDCu, 70mm ²	124532			
Tailed out connectors				
Conductor fitting, non tension, ABC 25mm ² - tail 400mm long transformed - Cu 32mm ²	175284			
Conductor fitting, non tension, ABC 35mm ² - tail 400mm long transformed - Al 25mm ²	127329			
Conductor fitting, non tension, ABC 35mm ² - tail 400mm long transformed - Al 35mm ²	127388			
Conductor fitting, non tension, ABC 35mm ² - tail 400mm long transformed - Cu 4mm ²	127280			
Conductor fitting, non tension, ABC 35mm ² - tail 400mm long transformed - Cu (bare) 16mm ²	127264			
Conductor fitting, non tension, ABC 35mm ² - tail 400mm long transformed - Cu 25mm ²	127027			
Conductor fitting, non tension, ABC 95mm ² - tail 300mm long transformed - Cu 70mm ²	126845			
End caps				
Conductor fitting, heatshrink end cap, ABC, 35mm ²	261469			

Conductor fitting, heatshrink end cap, ABC, 95mm²

261470

A5 Components used on Existing Overhead Lines and for Refurbishment Only

DESCRIPTION	CC NO	MANUF CODE	DIE SIZE REQUIRED	TOOL
Compression bails				
Conductor fitting, compression bail, ACSR, 100mm ²	139113			
Conductor fitting, compression elbow bail, ACSR, 50mm ²	106453			
Conductor fitting, compression elbow bail, ACSR, 100mm ²	106437			
Conductor fitting, compression elbow bail, HDCu, 16mm ²	106429			
Conductor fitting, compression elbow bail, HDCu, 70mm ²	106445			
Compression ceetaps				
Conductor fitting, ceetap shroud, small	118958			
Conductor fitting, compression ceetap, ACSR/AAAC, 25mm ²	119334			
Conductor fitting, compression ceetap, ACSR/AAAC, 50mm ²	119350			
Conductor fitting, compression ceetap, ACSR/AAAC, 50-25mm ²	119369			
Conductor fitting, compression ceetap, ACSR/AAAC, 100-25mm ²	119342			
Conductor fitting, compression ceetap, ACSR/AAAC, 100-50mm ²	119393			
Conductor fitting, compression ceetap, HDCu, 16mm ²	119040			
Conductor fitting, compression ceetap, HDCu, 16/25mm ²	119032			

Conductor fitting, compression ceetap, HDCu, 32-16mm ²	119016			
Conductor fitting, compression ceetap, HDCu, 35/40mm ²	119008			
Conductor fitting, compression ceetap, HDCu, 70mm ²	119105			
Conductor fitting, compression ceetap, HDCu, 70-35mm ²	119075			
Conductor fitting, compression ceetap, HDCu, 125-100mm ²	119245			
Compression dead ends				
Conductor fitting, compression dead end, double tee off, 17mm holes, ACSR, 50mm ²	120901			
Conductor fitting, compression dead end, double tee off, 17mm holes, ACSR, 100(6/7)mm ²	120960			
Conductor fitting, compression dead end, double tee off, 17mm holes, ACSR, 150(18/1)mm ²	120979			
Earth clamps				
Conductor fitting, earth bond clamp, ≤11kV (pole-top steelwork)	133220			
Full tension compression connectors				
Conductor fitting, compression full tension, AAAC, 25mm ²	130591			
Conductor fitting, compression full tension, AAC, 50mm ²	130575			
Conductor fitting, compression full tension, AAC, 100mm ²	130583			
Conductor fitting, compression full tension, ACSR, 150(30/7)mm ²	124796			

Conductor fitting, compression full tension, Cad or HDCu, 8.75mm - 10.65mm dia	124133			
Conductor fitting, compression full tension, Cad or HDCu, 12mm ² - 16mm ²	124109			
Conductor fitting, compression full tension, Cad or HDCu, 22mm ² - 32mm ²	124703			
Non tension compression connectors				
Conductor fitting, compression non tension, AAC, 50mm ²	130818			
Conductor fitting, compression non tension, AAC 50mm ² - HDCu 32mm ²	127604			
Conductor fitting, compression non tension, AAC, 100mm ²	130826			
Conductor fitting, compression non tension, AAC 100mm ² - HDCu 70mm ²	127639			
Conductor fitting, compression non tension, ACSR 25mm ² - HDCu 16mm ²	127655			
Conductor fitting, compression non tension, ACSR/AAC 50mm ² - HDCu 16mm ²	127671			
Conductor fitting, compression non tension, ACSR/AAC 50mm ² - HDCu 32mm ²	127698			
Conductor fitting, compression non tension, ACSR, 100mm ²	106380			
Conductor fitting, compression non tension, HDCu, 16mm ²	130656			
Conductor fitting, compression non tension, HDCu, 125mm ²	130710			
Conductor fitting, compression non tension, Insulink, Al, 25mm ²	127574			

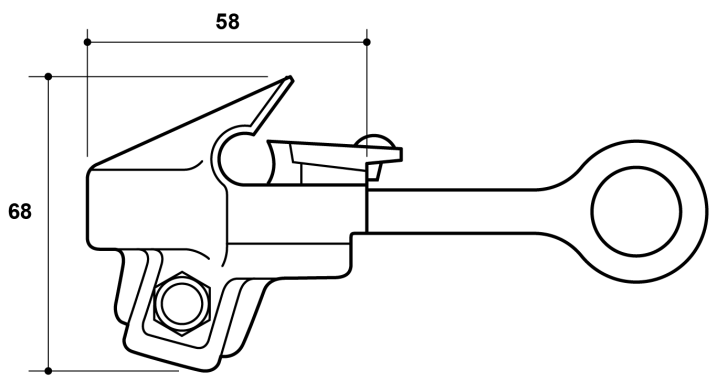
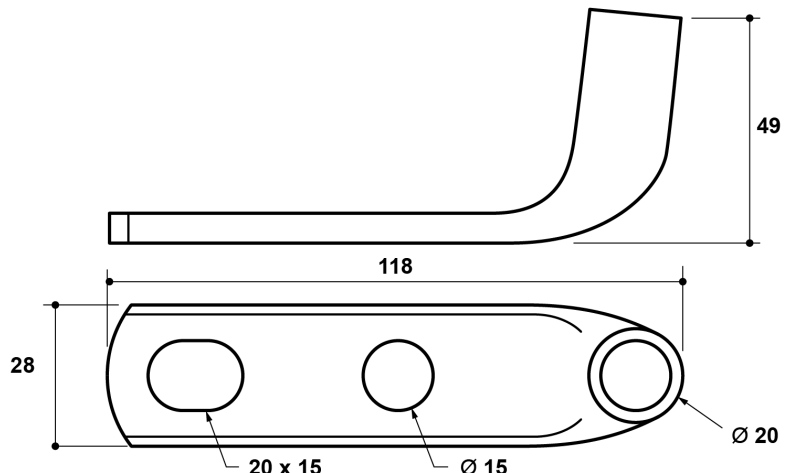
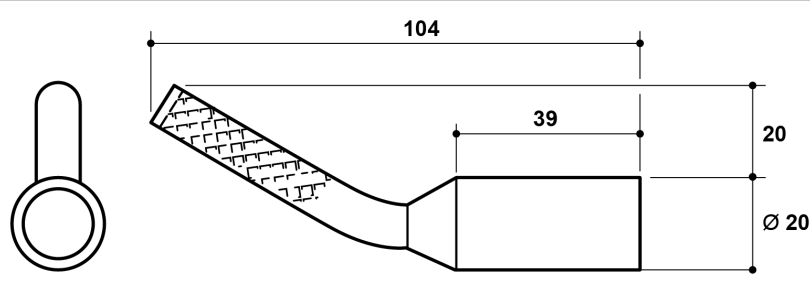
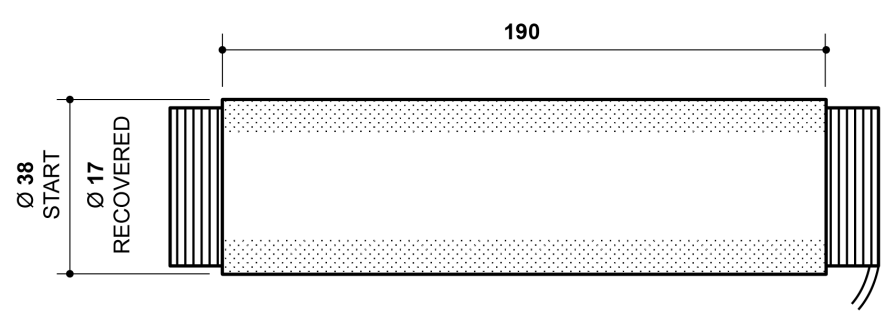
Conductor fitting, compression non tension, Insulink, Al, 25-50mm ²	127558			
Conductor fitting, compression non tension, Insulink, Al, 50mm ²	127566			
Compression taps				
Conductor fitting, compression tap, bimetal, HDCu, 16mm ²	137901			
Conductor fitting, compression tap, bimetal, HDCu, 32mm ²	137928			
Conductor fitting, compression tap, bimetal, HDCu, 70mm ²	137936			
Lugs				
Conductor fitting, lug, 1-hole (11mm), straight, HDCu, 16mm ²	124486			
Conductor fitting, lug, 1-hole (13mm), straight, HDCu, 16mm ²	124516			
Conductor fitting, lug, 1-hole (13mm), straight, HDCu, 32mm ²	124524			
Conductor fitting, lug, 1-hole (17mm), 30° angle palm, bimetal, ACSR/AAC, 50mm ²	124907			
Conductor fitting, lug, 1-hole (17mm), right angled, bimetal, ACSR/AAC, 100mm ²	124842			
Conductor fitting, lug, 1-hole (17mm), straight, CuCad/HDCu, 4.8mm ² - 6.13mm ²	124508			
Conductor fitting, lug, 1-hole (17mm), straight, HDCu, 16mm ²	124567			
Conductor fitting, lug, 1-hole (17mm), straight, HDCu, 32mm ²	124575			
Conductor fitting, lug, 1-hole (17mm), straight, HDCu, 70mm ²	124583			

Conductor fitting, lug, 1-hole (17mm), straight, HDCu, 125mm ²	124605			
Conductor fitting, lug, 1-hole (21mm), straight, HDCu, 16mm ²	124613			
Conductor fitting, lug, 1-hole (21mm), straight, HDCu, 32mm ²	124621			
Conductor fitting, lug, 1-hole (21mm), straight, HDCu, 70mm ²	124648			
Conductor fitting, lug, 1-hole (21mm), straight, HDCu, 100mm ²	124656			
Conductor fitting, lug, 1-hole (21mm), straight, HDCu, 125mm ²	124664			
Conductor fitting, lug, 2-hole (13mm), 45°, bimetal, ACSR/AAC, 50mm ²	124958			
Conductor fitting, lug, 2-hole (13mm), right angled neema palm, bimetal, ACSR/AAC, 50mm ²	124885			
Conductor fitting, lug, 2-hole (13mm), straight, HDCu, 125mm ²	124559			
Conductor fitting, lug, 2-hole (17mm), right angled, bimetal, ACSR/AAC, 50mm ²	124974			
Tailed out connectors				
Conductor fitting, non tension, SAC 25mm ² - tail 400mm long transformed - Cu 16mm ²	127442			
Conductor fitting, non tension, SAC 35mm ² - tail 400mm long transformed - Cu 25mm ²	127450			
Wedge taps				
Conductor fitting, wedge tap bail, bimetal, ACSR/AAC, 50mm ²	131181			
Conductor fitting, wedge tap bail, bimetal, ACSR/AAC, 100mm ²	131189			

Conductor fitting, wedge tap bail, bimetal, ACSR 150/175mm ²	131190			
Conductor fitting, wedge tap bail, bimetal, ACSR 175mm ² (Lynx)	131191			
Conductor fitting, wedge tap bail, HDCu, 16/25mm ²	131181			

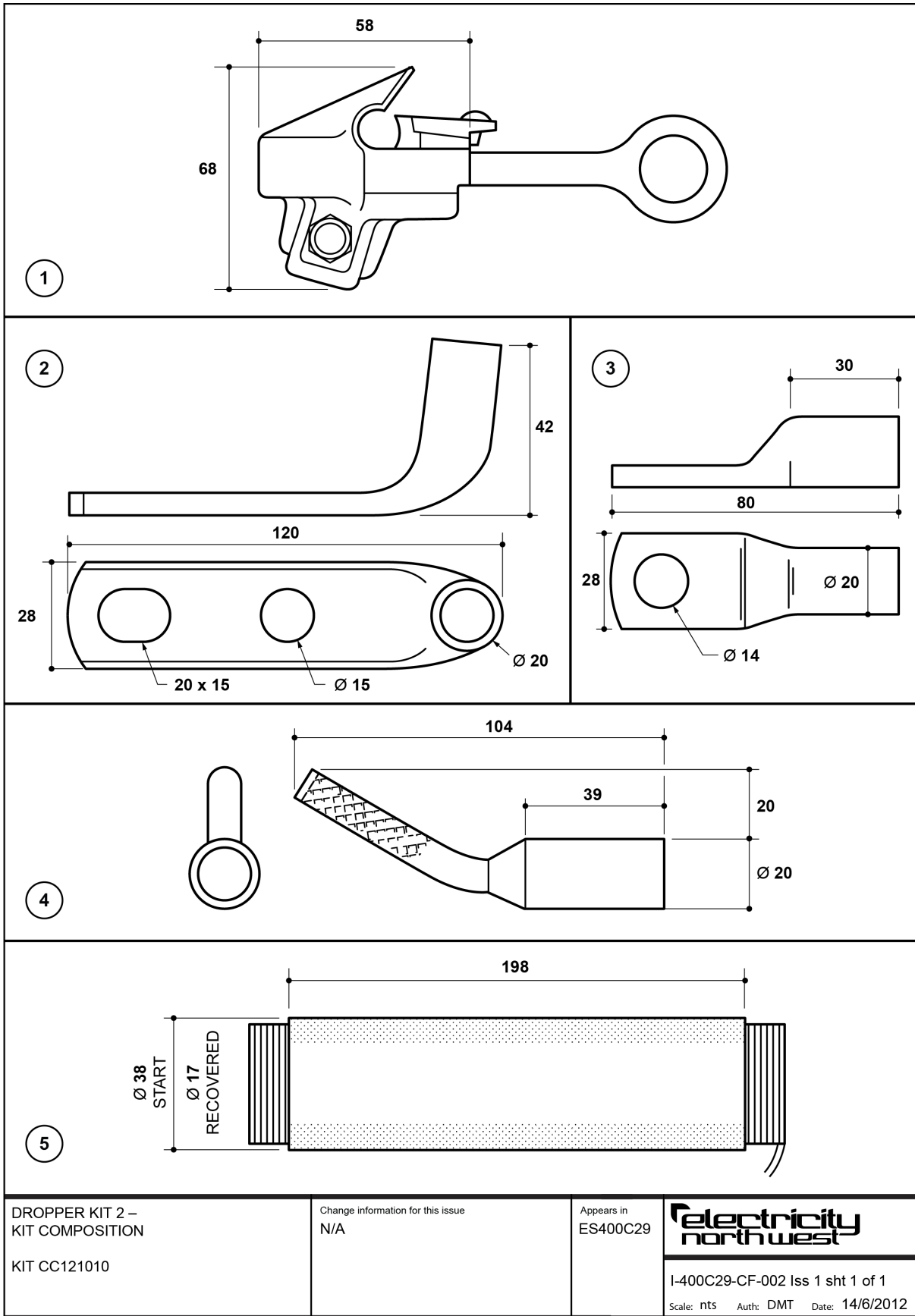
Appendix B – Additional Information on Individual Components

APPENDIX A REFERENCE	ITEM DESCRIPTION	CC NO	ADDITIONAL INFORMATION
A3 Dropper Kits	Conductor fitting, dropper kit 1 (ABS, GVR, PMT) (Dwg I-400C29-CF-001)	124871	Refer to drawings I-400C29-CF-001 to -004 on the following pages for composition of these kits and component detail. Refer to drawings I-400O2-GA-048 to -051 (copied from a construction specification) on the following pages for general arrangements using these kits.
	Conductor fitting, dropper kit 2 (Links above PMT) (Dwg I-400C29-CF-002)	121010	
	Conductor fitting, dropper kit 3 (OYT, OYS) (Dwg I-400C29-CF-003)	124880	
	Conductor fitting, dropper kit 4 (11kV cable term) (Dwg I-400C29-CF-004)	124883	
A3 Lugs	Conductor fitting, lug extender, earthing pin PMT, conductor, flexible, 65mm ²	124884	Refer to drawing I-400C29-CF-005 for guidance.

<p>①</p> 			
<p>②</p> 			
<p>③</p> 			
<p>④</p> 			
<p>DROPPER KIT 1 – KIT COMPOSITION</p> <p>KIT CC124871</p>	<p>Change information for this issue N/A</p>	<p>Appears in ES400C29</p>	<p>Electricity north west</p> <p>I-400C29-CF-001 Iss 1 sht 1 of 1</p> <p>Scale: nts Auth: DMT Date: 14/6/2012</p>

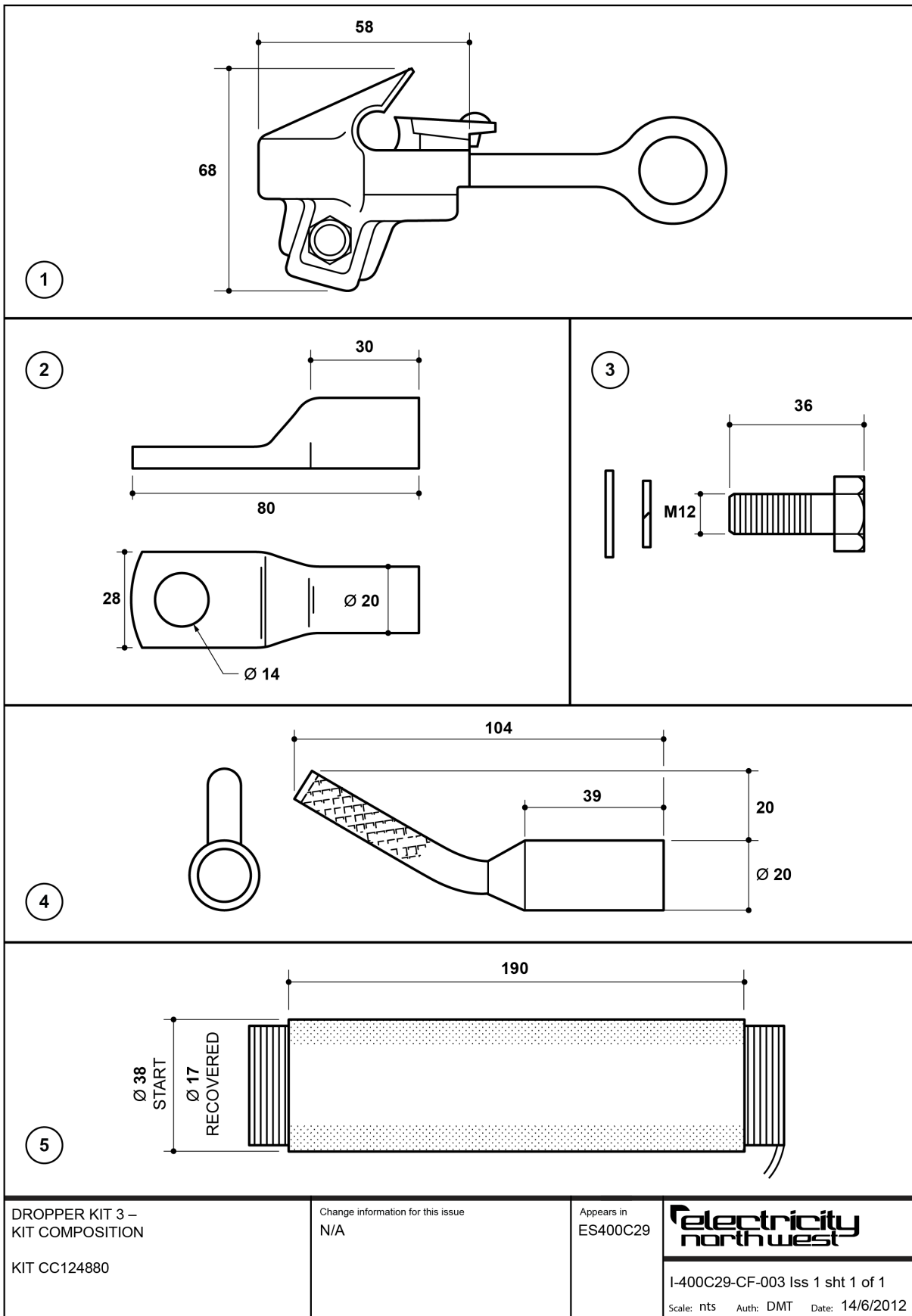
Dropper Kit 1

		DRAWING NO: I-400C29-CF-001	
ITEM NO	DESCRIPTION	QTY	CC NUMBER
1	Clamp, LL, phosphor bronze, 400 Amp, Cu conductor, 4mm to 10.5m dia	1	137863
2	Right angled neema palm lug, Cu, 65mm ²	1	-
3	Offset knurled thimble lug, 65mm ²	1	-
4	Pre-stretched cold-shrink tubing	2	-



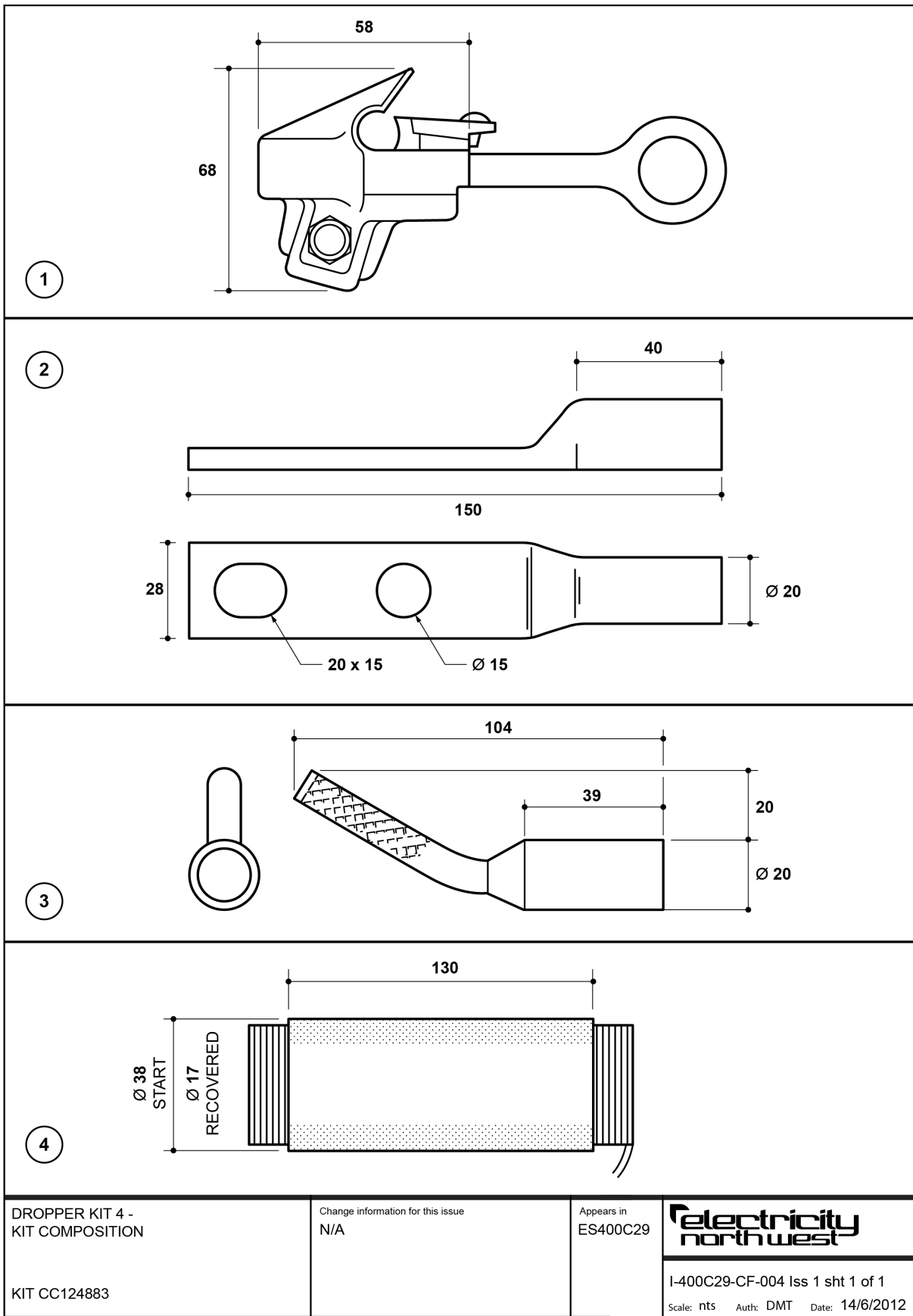
Dropper Kit 2

		Drawing No: I-400C29-CF-002	
ITEM NO	DESCRIPTION	QTY	CC NUMBER
1	Clamp, LL, phosphor bronze, 400 Amp, Cu conductor, 4mm to 10.5m dia	1	137863
2	Right angled neema palm lug, Cu, 65mm ²	1	-
3	Palm lug, 65mm ²	2	-
4	Offset knurled thimble lug, 65mm ²	1	-
5	Pre-stretched cold-shrink tubing	4	-



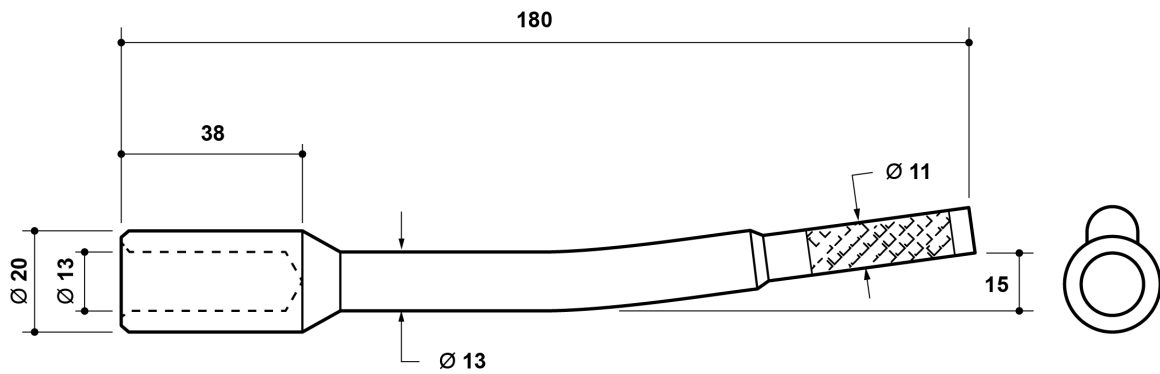
Dropper Kit 3

		DRAWING NO: I-400C29-CF-003	
ITEM NO	DESCRIPTION	QTY	CC NUMBER
1	Clamp, LL, phosphor bronze, 400 Amp, Cu conductor, 4mm to 10.5m dia	1	137863
2	Palm lug, 65mm ²	1	-
3	Stainless steel bolt, spring washer and washer	1	-
4	Offset knurled thimble lug, 65mm ²	1	-
5	Pre-stretched cold-shrink tubing	2	-



Dropper Kit 4

		Drawing No: I-400C29-CF-004	
ITEM NO	DESCRIPTION	QTY	CC NUMBER
1	Clamp, LL, phosphor bronze, 400 Amp, Cu conductor, 4mm to 10.5m dia	1	137863
2	Straight neema palm lug, Cu, 65mm ²	1	-
3	Offset knurled thimble lug, 65mm ²	1	-
4	Pre-stretched cold-shrink tubing	2	-



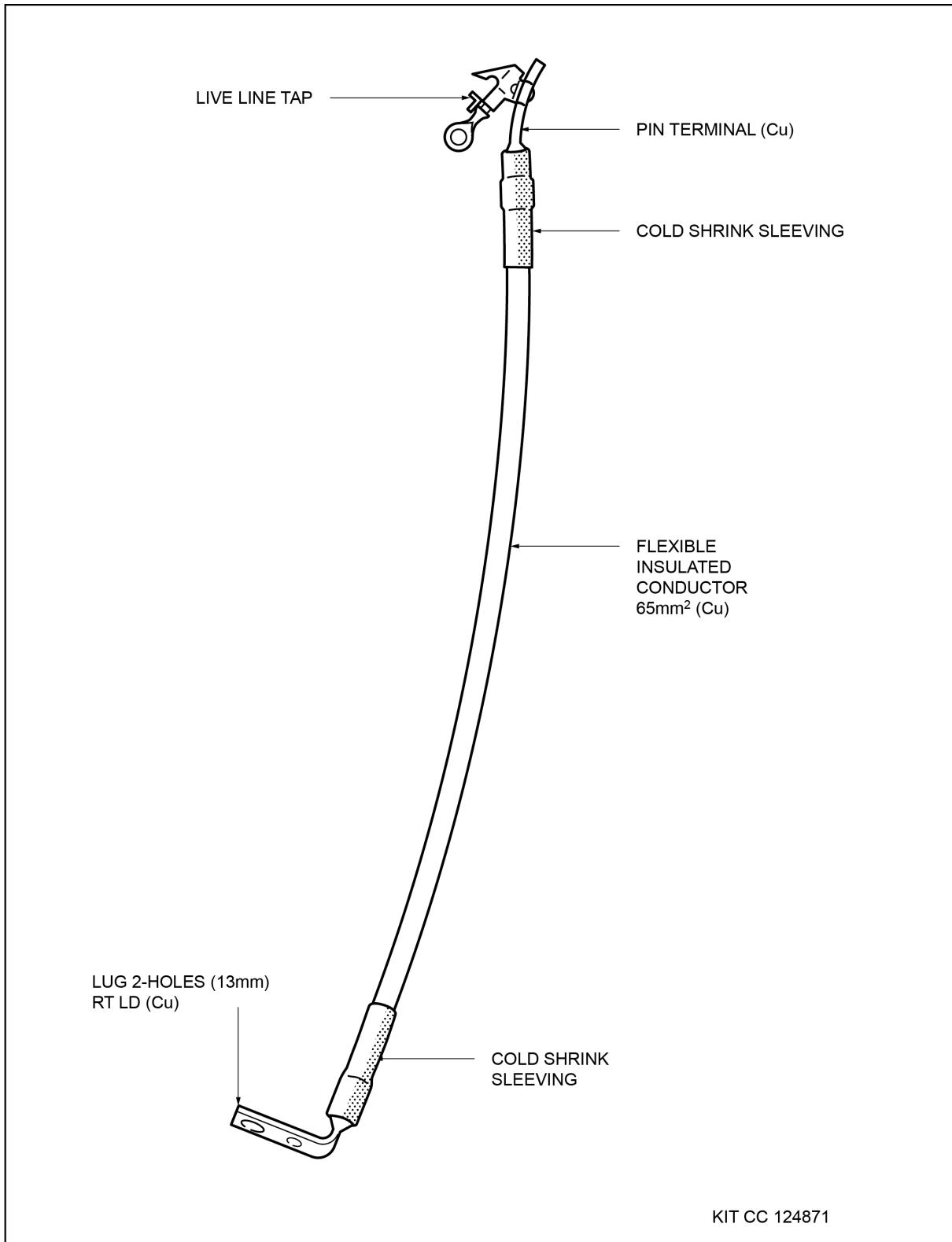
MATERIAL: COPPER

CC124884

CONDUCTOR FITTING
LUG EXTENDER
EARTHING PIN PMT
CONDUCTOR, FLEXIBLE, 65mm²

Change information for this issue
N/A

Appears in
ES400C29



DROPPER KIT 1
(ABS, GVR, PMT)

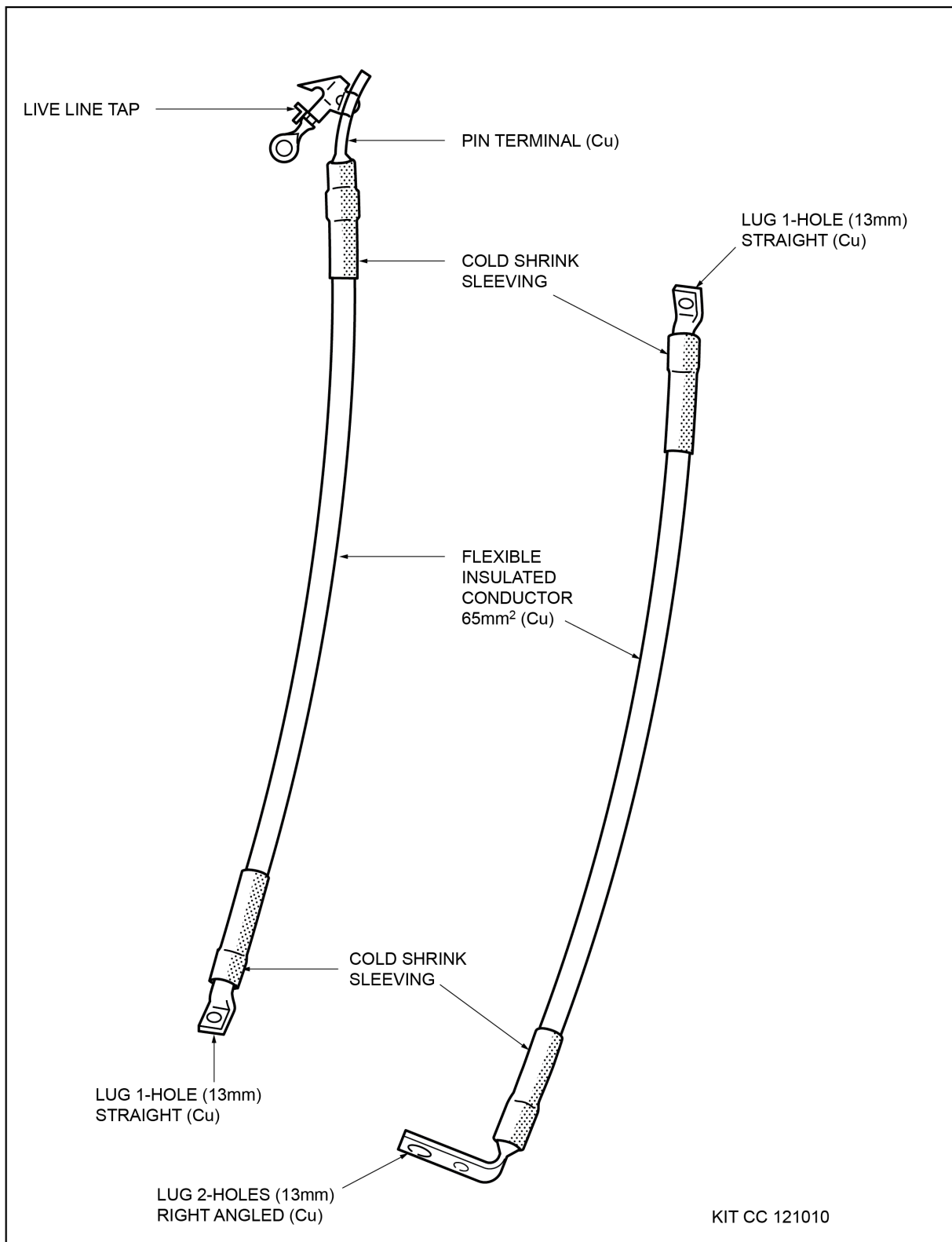
Change information for this issue
N/A

Appears in
ES400C29,
ES40002,
ES40003

**Electricity
north west**

I-40002-GA-048 Iss 2 sht 1 of 1

Scale: nts Auth: DMT Date: 14/6/2012



KIT CC 121010

DROPPER KIT 2
(LINKS ABOVE PMT)

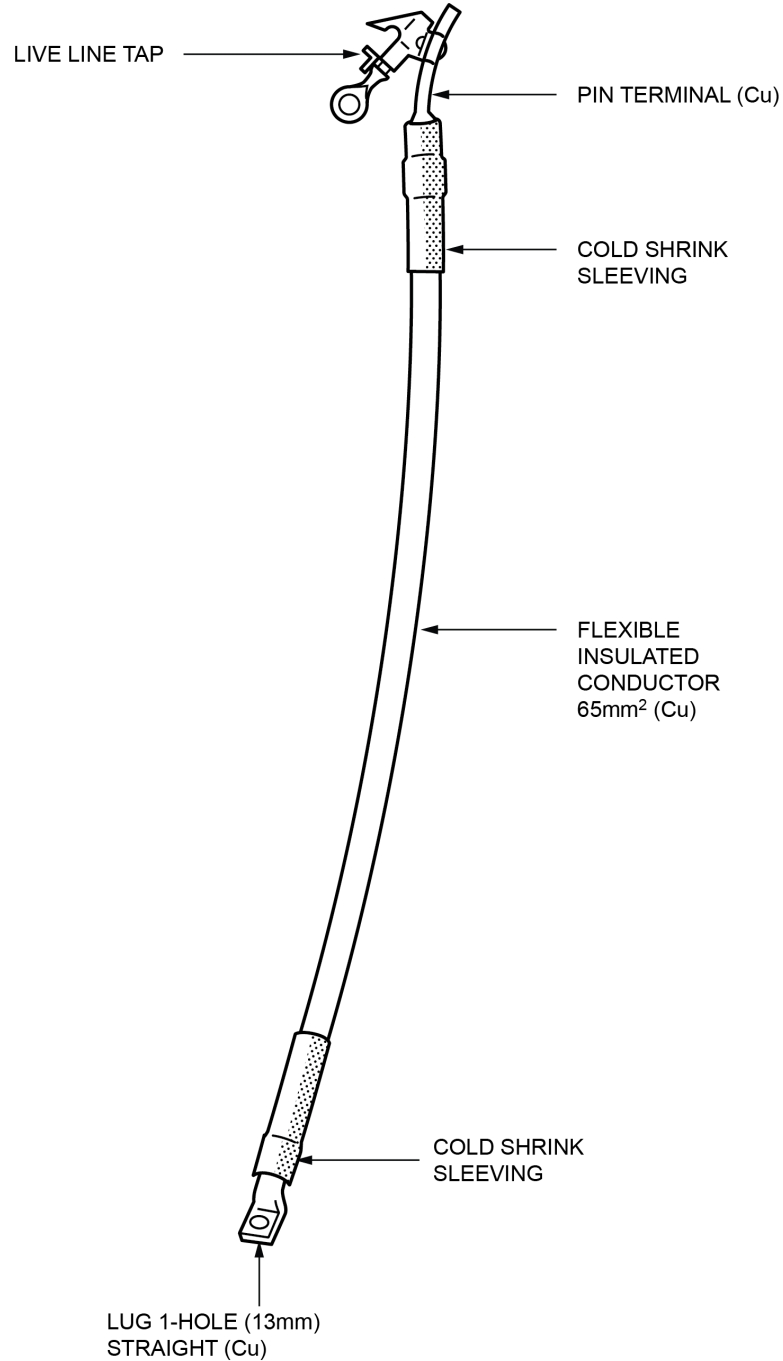
Change information for this issue
N/A

Appears in
ES400C29,
ES400O2,
ES400O3

**Electricity
north west**

I-400O2-GA-049 Iss 2 sht 1 of 1

Scale: nts Auth: DMT Date: 14/6/2012



KIT CC 124880

DROPPER KIT 3
(OYT, OYS)

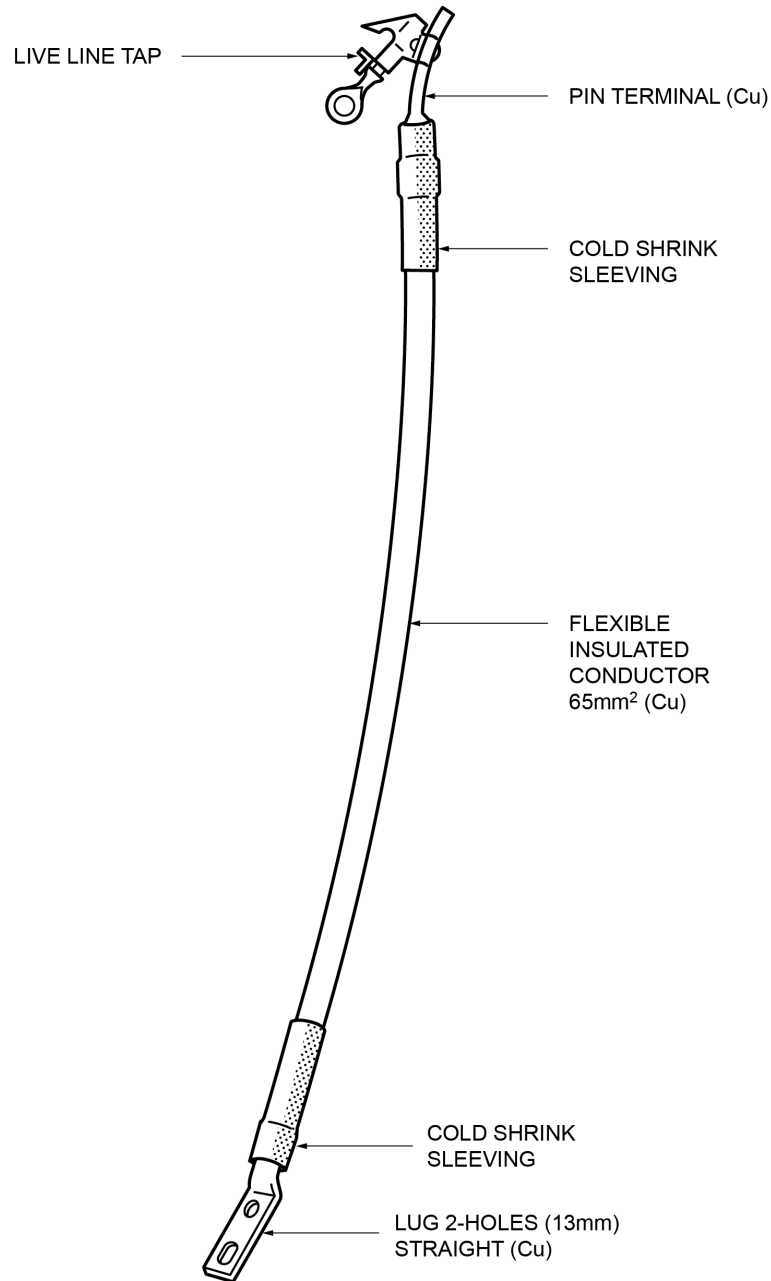
Change information for this issue
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Appears in
ES400C29,
ES400O2,
ES400O3

**Electricity
north west**

I-40002-GA-050 Iss 2 sht 1 of 1

Scale: nts Auth: DMT Date: 14/6/2012



KIT CC124883

DROPPER KIT 4
(11kV CABLE TERM)

Change information for this issue
N/A

Appears in
ES400C29,
ES400O2,
ES400O3

electricity
north west

I-400O2-GA-051 Iss 2 sht 1 of 1

Scale: nts Auth: DMT Date: 14/6/2012

Appendix C – Conformance Declaration

SECTION-BY-SECTION CONFORMANCE WITH SPECIFICATION

The Tenderer shall declare conformance or otherwise for each product/service or range of products/services, section-by-section, using the following Conformance Declaration Codes.

Conformance Declaration Codes:

N/A =	Clause is not applicable/appropriate to the product/service.
C1 =	The product/service conforms fully with the requirements of this clause.
C2 =	The product/service conforms partially with the requirements of this clause.
C3 =	The product/service does not conform to the requirements of this clause.
C4 =	The product/service does not currently conform to the requirements of this clause, but the manufacturer proposes to modify and test the product in order to conform.

Manufacturer:

Product/Service Description:

Product/Service Reference:

Name:

Company:

Signature:

SECTION-BY-SECTION CONFORMANCE

Section	Section Topic	Conformance Declaration Code	Remarks * (must be completed if code is not C1)
3.1	Product not to be Changed		
3.2	Electricity North West Technical Approval		
3.3	Quality Assurance		
3.4	Formulation		
3.5	Identification Markings		
3.6	Minimum Life Expectancy		
3.7	Product Conformity		
3.8	Confirmation of Conformance		
4.1	Requirements for Type Tests at the Supplier's Premises		
4.2	Requirement for Routine Tests at the Supplier's Premises		
5.	Additional Requirements		

* Applicable specifications shall be stated in the Remarks column where alternatives are quoted within a section. The Remarks column shall also be used to indicate cases where the products or services exceed the quoted specifications.

Additional Notes: