



# TRANSNET ENGINEERING

## SPECIFICATION FOR REPLACEMENT OF JUMPER CABLES ON 18E ELECTRIC LOCOMOTIVES

Date of release

5 February 2025

**DOC. No EL\_NAT\_SPEC\_2009**

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LOCOMOTIVES

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**Revision:** - 0

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## SUMMARY OF REVISION

First issue – 5 February 2025 Document No. EL\_NAT\_SPC\_2009

The following revisions have been made in this version:

Change	Description

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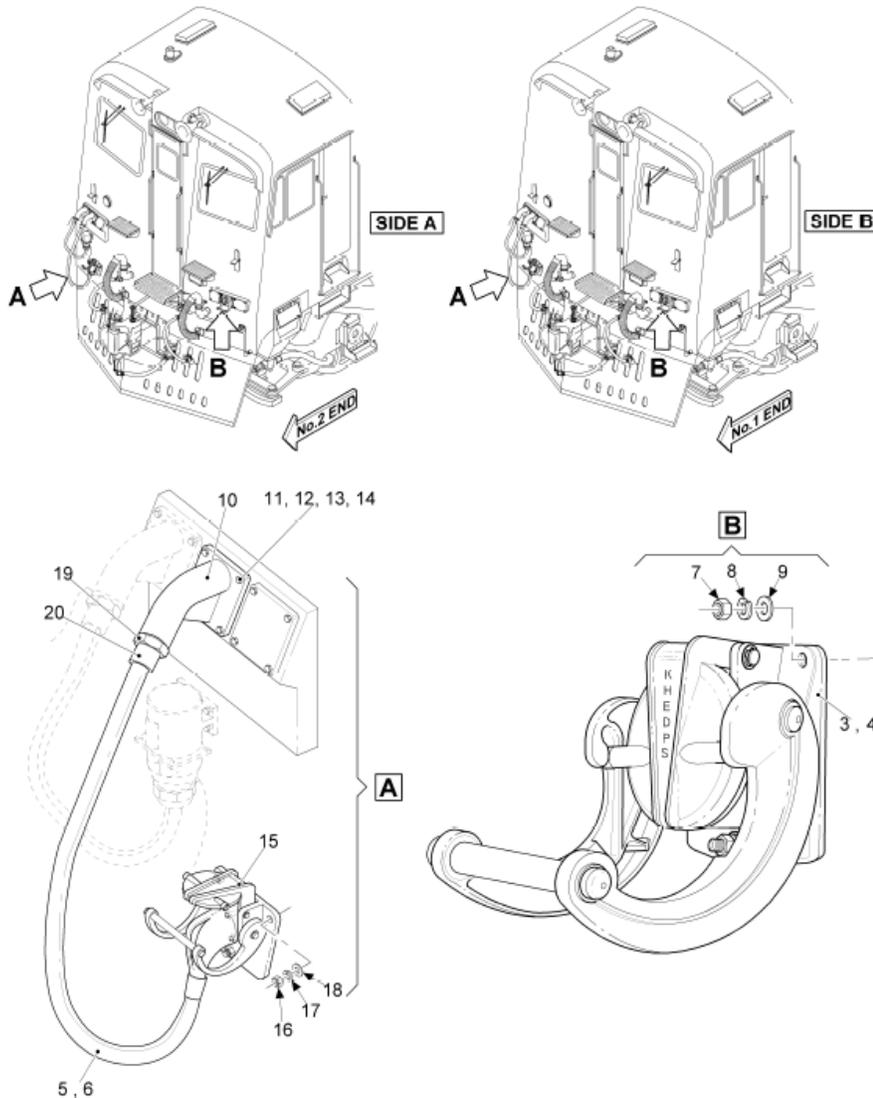
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# 1. INTRODUCTION

- 1.1. This specification covers Transnet's requirements for the supply and delivery of replacement jumper cables for the 18E Electric locomotives which are fitted with KHEOPS jumper plug including cables.
- 1.2. Each locomotive has a jumper cable and plug on the A-side of the locomotive.



1.3. Items 5,6,19 and 20 as well as the plug are under discussion.

1.3.1. Item 5 present the outer housing with the plug.

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1.3.2. Item 6 present the inner wiring.

1.3.3. Item 20 present the shoulder that keep the outer housing in place.

1.3.4. Item 19 present the nut that connect the cable assembly to the locomotive bracket item 10.

## **2. TECHNICAL DATA**

### **Electrical**

Withstand voltage : 3250 V

Insulation resistance : 5000 MΩ (Ø2 / twinax)

Creepage distance : Ø2 > 12 mm / Twinax > 3 mm

Clearance distance : Ø2 : 4,3 mm / Twinax : 1,6 mm

### **Mechanical**

Housing Material : Aluminium

Contact material : Silver plated brass

Insulator : Thermoplastic

Protection index : IP 54

Temperature range : -40°C to 80°C

Keyway variants : 6

### **Contact and Cable**

Contact size : Ø2 mm

Contact stem size : 1,95 mm

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Termination : Crimping

Contact type : Diablo

Max cross-section : 0,6 to 2,61 mm

Max Ø cable over insulation : 6 mm

Max Ø cable stripped : 1,95 mm

### **Technical documentation**

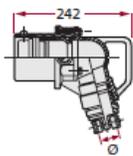
All potential suppliers need to inspect a jumper cable on the locomotive to understand the content of the wire, housing as well as plug required.

The supplied plug with cable must be fully interchangeable and able to connect with existing sockets on the 18E locomotives.

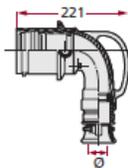
The require plug is 65° as shown below:

#### **■ Références et encombrements (mm) / Part numbers and dimensions (mm)**

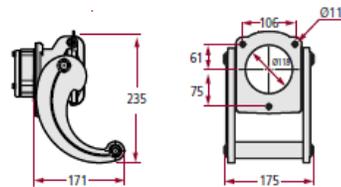
Configuration	Article Item	Réf. générique Generic part number	Câble Ø maxi	Poids Weight
43 + 2 twinax	Fiche / Plug 65°	CAM1681-0005-****	46	2,1 kg
	Fiche / Plug 90°	CAM1681-0015-****	46	2,4 kg
	Embase semi-encastrée Semi-recessed socket	CAM1681-0127-****		3,6 kg



Fiche / Plug 65°



Fiche / Plug 90°



Embase semi-encastrée  
Semi-recessed socket

END

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## DOCUMENT AUTHORITIES

**RESPONSIBLE PERSON**

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**SIGNATURE**

A handwritten signature in black ink, appearing to read 'DKleynhans', is written over a horizontal line.

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Senior Product Engineer**

**SIGNATURE**

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DESIGNATION**

**Walter Klingenberg  
Principal Product Engineer**

**SIGNATURE**

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