NOTES

1. Orientation is measured clockwise when looking down on pole tip.
2. Bracketed fittings require +/- 2 mm tolerance between them and +/- 2mm orientation tolerance.
3. Longitudinal capacities to be not less than transverse capacities.
4. Stainless steel tubes are to be accurately positioned and free from concrete and deformity.
5. A nominal Ø10 vent hole is required at the centre of the through tube provided for square rigging.
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Refer dwg 5-7-3-2 for Foundations
Refer dwg 5-4-263-8 for Construction
## TABLE OF CONTENTS

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Refer dwg 5-7-3-2 for Foundations
Refer dwg 5-4-263-8 for Construction

---

### SET FITTING DESCRIPTION QTY

1. A Tip ring and pole cap (plain) 1
2. H M16 ferrule (25mm thread length) 50
3. G M12 earth ferrule (30mm thread length) 18
4. I Name plate 1
5. P Joint 1
6. D 22 OD S/S tube for M16 bolt 3
7. F 22 OD S/S tube for M20 bolt 10
8. T 38 OD S/S tube 2
9. K 5mm galv. cross wires (access barrier) 2
10. X M16 ferrule long (99mm thread length) 6

### MATERIALS

- **FITTING**
  - Tip ring and pole cap (plain)
  - M16 ferrule (25mm thread length)
  - M12 earth ferrule (30mm thread length)
  - Name plate
  - Joint
  - 22 OD S/S tube for M16 bolt
  - 22 OD S/S tube for M20 bolt
  - 38 OD S/S tube
  - 5mm galv. cross wires (access barrier)

- **FITTING PURPOSE**
  - Tip ring and pole cap (plain)
  - M16 ferrule (25mm thread length)
  - M12 earth ferrule (30mm thread length)
  - Name plate
  - Joint
  - 22 OD S/S tube for M16 bolt
  - 22 OD S/S tube for M20 bolt
  - 38 OD S/S tube
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- **FITTING**
  - Tip ring and pole cap (plain)
  - M16 ferrule (25mm thread length)
  - M12 earth ferrule (30mm thread length)
  - Name plate
  - Joint
  - 22 OD S/S tube for M16 bolt
  - 22 OD S/S tube for M20 bolt
  - 38 OD S/S tube
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- **FITTING PURPOSE**
  - Tip ring and pole cap (plain)
  - M16 ferrule (25mm thread length)
  - M12 earth ferrule (30mm thread length)
  - Name plate
  - Joint
  - 22 OD S/S tube for M16 bolt
  - 22 OD S/S tube for M20 bolt
  - 38 OD S/S tube
  - 5mm galv. cross wires (access barrier)

---

### TABLE

<table>
<thead>
<tr>
<th>FITTING</th>
<th>TUBE LENGTH</th>
<th>FITTING PURPOSE</th>
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<tbody>
<tr>
<td>Tip ring and pole cap (plain)</td>
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<td>Tip ring and pole cap (plain)</td>
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<td>Name plate</td>
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<td>Name plate</td>
</tr>
<tr>
<td>Joint</td>
<td></td>
<td>Joint</td>
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<tr>
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<td>22 OD S/S tube for M16 bolt</td>
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<tr>
<td>22 OD S/S tube for M20 bolt</td>
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<td>22 OD S/S tube for M20 bolt</td>
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<td>38 OD S/S tube</td>
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<td>38 OD S/S tube</td>
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<tr>
<td>5mm galv. cross wires (access barrier)</td>
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<td>5mm galv. cross wires (access barrier)</td>
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<tr>
<td>M16 ferrule long (99mm thread length)</td>
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<td>M16 ferrule long (99mm thread length)</td>
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### DIAGRAM

- **Hard Copy Uncontrolled**
- **Ergon Energy Corporation Ltd**
- **ABN 50 087 646 062**
- **OVERHEAD SUB-TRANSMISSION**
- **130kV CONCRETE POLE MANUFACTURING DETAILS**
- **DOUBLE CIRCUIT RURAL VERTICAL STRAIN**
- **30m x 60kN AND 65kN - 75% ANGLF POLE**
- **DRAWING NUMBER 5-20-311-3**
- **C1RDV2626GDJ/GDR C1RDV2626GDJ/GDR**
- **DATE 01/93**
- **PAGE 5 20 311-3 05**
NOTES
1. Orientation is measured clockwise when looking down on pole tip.
2. Bracketed fittings require +/-2 mm tolerance between them and +/-2 mm orientation tolerance.
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5. A nominal Ø10 vent hole is required at the centre of the through tube provided for square rigging.
6. Temporary stays may be required during construction and/or maintenance works.

Refer dwg 5-5-2-3-2 for Foundations
Refer dwg 5-4-263-8 for Construction

OVERHEAD SUB-TRANSMISSION
120kV direct pole manufacturing details
DOUBLE CIRCUIT RURAL VERTICAL STRAIN

DRAWING NUMBER: 5-20-311-4

ERGON ENERGY CORPORATION LTD
ABN 50 087 646 062

NAME: P. DE SOUSA ROQUE
DRAWN: K. STOLZ
APPROVED: 14/03/2016

ERGON ENERGY STANDARD / MARINE GRADE

BATCH NO.
MANUFACTURER'S NAME/TRADE MARK
MONTH AND YEAR OF MANUFACTURE
MANUFACTURER'S NAME/TRADE MARK
VOLUME
PAGE

C1RDV262EDR
C1RDV628EDR

C1RDV262EDR
C1RDV628EDR

ERGON ENERGY STANDARD / MARINE GRADE

MANUFACTURER'S NAME/TRADE MARK
MONTH AND YEAR OF MANUFACTURE
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---

### Description
- **Fall Arrest Bracket and Step bolt to pole**
- **Fitment**
- **Drawing Number**
- **Structure Type**
- **Stock Code**

### Table

<table>
<thead>
<tr>
<th>Distance (m)</th>
<th>Orientation</th>
<th>Fitting Description</th>
<th>Tube Length</th>
<th>Fitting Purpose</th>
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### Diagram

Refer dwg 5-7-3-2 for Foundations  
Refer dwg 5-4-264-8 for Pole Construction  

---

### Stock Code:

- **C1RDVS906EDR**
- **C1RDVS906EDR**
- **C1RDVS906EDR**

### Diagram

- **Rural DC Vertical Strain 75° - 85° Pole**

---

### Name Plate Information
- **Manufacturer's Name/Trade Mark**
- **Month and Year of Manufacture**
- **Length of Pole (m)*/** Limit State Design Load (kN)**
- **Structure Type**
- **Stock Code**
- **Engineering Company**

---

### Drawing Number

- **5-20-312-1**

---

### Hard Copy

**Uncontrolled**

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### Ergon Energy Corporation Ltd

**ABN 50 087 646 062**
Notes:
1. Orientation is measured clockwise when looking down on pole lip.
2. Bracketed fittings require +/- 2 mm tolerance between them and +/- 2 mm orientation tolerance.
3. Longitudinal capacities to be not less than transverse capacities.
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5. A nominal 101 vent hole is required at the centre of the through tube provided for square rigging.
6. Temporary stays may be required during construction and/or maintenance works.

Refer dwg 5-7-3-2 for Foundations
Refer dwg 5-4-264-8 for Pole Construction

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<th>FITTING PURPOSE</th>
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<td>5 mm galv. cross wires</td>
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<th>QTY</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>1</td>
<td>A Tip ring and pole cap (plain)</td>
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<tr>
<td>3</td>
<td>H M16 ferrule (25mm thread length)</td>
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<td>18</td>
<td>G M16 earth ferrule (30mm thread length)</td>
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<td>2</td>
<td>I Name plate</td>
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<td>1</td>
<td>P Joint</td>
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<td>6</td>
<td>E 25 OD S/S tube for M20 bolt</td>
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<td>12</td>
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<tr>
<td>2</td>
<td>K 5 mm galv. cross wires (access barrier)</td>
</tr>
</tbody>
</table>

**NOTES:**
1. Orientation is measured clockwise when looking down on pole lip.
2. Bracketed fittings require +/- 2 mm tolerance between them and +/- 2 mm orientation tolerance.
3. Longitudinal capacities to be not less than transverse capacities.
4. Stainless steel tubes are to be accurately positioned and free from concrete and deformity.
5. A nominal 101 vent hole is required at the centre of the through tube provided for square rigging.
6. Temporary stays may be required during construction and/or maintenance works.
NOTES

1. Orientation is measured clockwise when looking down on pole tip.
2. Bracketed fittings require ±2 mm tolerance between them and ±/2° orientation tolerance
3. Longitudinal capacities to be not less than transverse capacities.
4. Stainless steel tubes are to be accurately positioned and free from concrete and deformity.
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Refer dwg 5-7-3-2 for Foundations
Refer dwg 5-4-266-8 for Pole Construction
### LIMIT STATE DESIGN LOAD (kN)

- **Length**: 27
- **Load**: 80

### STRUCTURE TYPE
- **Type**: Single Circuit Vertical Strain
- **Height**: 30m
- **Material**: 132kV Concrete Pole
- **Construction**: 75° - 85° Angle Pole
- **Foundation**: 400mm dia x 3m deep, 20m apart
- **Earthing**: 75° - 85° Angle Pole

### MANUFACTURER’S NAME/TADER MARK
- **Name Plate Information**

###振り返る

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### Refer
- **dwg 5-7-3-2 for Foundations**
- **dwg 5-4-264-8 for Pole Construction**
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2. Braced fittings shall be spaced +/2 mm tolerance between them and +/- 2mm orientation tolerance.
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5. A nominal 90° vent hole is required at the centre of the through tube provided for square rigging.
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---

### Distance (m) from the Pole

<table>
<thead>
<tr>
<th>ORIENTATION</th>
<th>FITTING DESCRIPTION</th>
<th>TUBE LENGTH</th>
<th>FITTING PURPOSE</th>
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<tr>
<td>0</td>
<td>32 OD S/S tube</td>
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<td>Fall Arrest Bracket and Step bolt to pole</td>
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### Additional Information

- **Height Indication Mark**
- **Tip Ring and Pole Cap**
- **Additional Earthing (in Black Soil)**
- **Access Barrier**
- **Depth Indication Marker (Normal Soil)**

---

### Diagrams

- [Diagram of Pole Construction](#)
- [Diagram of Foundation Specifications](#)

---

**Refer dwg 5-7-3-2 for Foundations**

**Refer dwg 5-4-264-8 for Pole Construction**

---

**Ergon Energy Corporation Ltd**

**ABN 50 087 646 062**

**Drawn** R MARGANI

**Approved** P DE SOUSA ROQUE

---

**132kV CONCRETE POLE MANUFACTURING DETAILS**

**OVERHEAD SUB-TRANSMISSION**

**Rural DC Vertical Strain 85° - 95° Pole**

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**STOCK CODE: 2450196**

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**NOTES**

1. Orientation is measured clockwise when looking down on pole tip.
2. Bracketed fittings require +/- 2 mm tolerance between them and +/- 2 mm orientation tolerance.
3. Longitudinal capacities to be not less than transverse capacities.
4. Stainless steel tubes are to be accurately positioned and free from concrete and deformity.
5. A nominal Ø10 vent hole is required at the centre of the through tube provided for square rigging.
6. Temporary stays may be required during construction and/or maintenance works.
### NOTES

1. Orientation is measured clockwise when looking down on pole tip.
2. Bracketed fittings require +/- 2 mm tolerance between them and +/- 2mm orientation tolerance.
3. Longitudinal capacities to be no less than transverse capacities.
4. Stainless steel tubes are to be accurately positioned and free from concrete and deformity.
5. A nominal Ø10 vent hole is required at the centre of the through tube provided for square rigging.
6. Temporary stays may be required during construction and/or maintenance works.

Refer dwg 5-7-3-2 for Foundations
Refer dwg 5-4-264-8 for Pole Construction

### TABLE OF DISTANCES

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<thead>
<tr>
<th>DISTANCE</th>
<th>ORIENTATION</th>
<th>Fitting Description</th>
<th>TUBE LENGTH</th>
<th>FITTING PURPOSE</th>
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</table>

**QTY**

| 1 | A | Tip ring and pole cap (plain) |
| 2 | J | Depth indication mark |
| 3 | H | M16 ferrule (25mm thread length) |
| 4 | G | M12 earth ferrule (30mm thread) |
| 5 | K | Name Plate |
| 6 | E | 25 OD S/S tube for M20 bolt |
| 7 | F | 32 OD S/S tube for M24 bolt |
| 8 | T | 38 OD S/S tube |
| 9 | K | 5mm galv. cross wires (access barrier) |

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**Set Fitting Description**

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<td>12</td>
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<td>2</td>
<td>5mm galv. cross wires (access barrier)</td>
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**Additional Earthing**

- (Fully Stayed)
- (Normal Soil)
- (Black Soil)

**Structure Type**

- Double Circuit Rural Vertical Strain
NOTES
1. Orientation is measured clockwise when looking down on pole lip.
2. Bracketed fittings require +/- 2mm tolerance between them and +/- 2mm orientation tolerance.
3. Longitudinal capacities to be not less than frameless capacities.
4. Stainless steel tubes are to be accurately positioned and free from concrete and deformity.
5. A nominal Ø10 vent hole is required at the centre of the through tube provided for square rigging.
6. Temporary stays may be required during construction and/or maintenance works.

Refer dwg 5-7-3-2 for Foundations
Refer dwg 5-4-264-8 for Pole Construction

Rural DC Vertical Stave 90° - 105° Pole

OVERHEAD SUB-TRANSMISSION
10kV CONCRETE POLE MANUFACTURING DETAILS
DOUBLE CIRCUIT RURAL VERTICAL STRAIN
37m X 60kN AND 95% D - 105% D ANGLE POLE

DRAWING NUMBER: 5-20-314-2

ERGON ENERGY CORPORATION LTD
A3M QA 0147 REV G2

ERGON ENERGY
BATCH NO.

SUPERSEDES:

ERGON ENERGY
LENGTH OF POLE (m) / LIMIT STATE DESIGN LOAD

FITTING DESCRIPTION

FITTING PURPOSE

COMPONENTS

ERGON ENERGY

FITTING PURPOSE

ERGON ENERGY

FITTING

FITTING PURPOSE

ERGON ENERGY

FITTING

FITTING PURPOSE

ERGON ENERGY

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FITTING
Refer dwg 5-7-3-2 for Foundations
Refer dwg 5-4-264-8 for Pole Construction

NOTES

1. Orientation is measured clockwise when looking down on pole lip.
2. Bracketed fittings require +/- 2 mm tolerance between them and +/- 2 mm orientation tolerance
3. Longitudinal capacities to be not less than transverse capacities.
4. Stainless steel tubes are to be accurately positioned and free from concrete and deformity.
5. A nominal Ø10 vent hole is required at the centre of the through tube provided for square rigging.
6. Temporary stays may be required during construction and/or maintenance works.

Refer dwg 5-7-3-2 for Foundations
Refer dwg 5-4-264-8 for Pole Construction

OVERHEAD SUB-SUBMISSION
100kV CONCRETE POLE MANUFACTURING DETAILS
DOUBLE CIRCUIT RURAL VERTICAL STRAIN

ERGON ENERGY CORPORATION LTD
ABN 50 087 646 062

POLE MANUFACTURE
STRUCTURE TYPE
MANUFACTURER'S NAME/TRade MARK
MANUFACTURER'S NUMBER/TRADE MARK

STOCK CODE
DRAWING NUMBER:
DRAWN
CHECKED
DATE

5m galv. cross wires (access barrier)
5mm galv cross wires (access barrier)
NOTES

1. Orientation is measured clockwise when looking down on pole tip.
2. Bracketed fittings are +/- 2 mm tolerance between them and +/- 2 mm orientation tolerance.
3. Longitudinal capacities to be not less than transverse capacities.
4. Stainless steel tubes are to be accurately positioned and free from concrete and deformity.
5. A nominal 310 vent hole is required at the centre of the through tube provided for square rigging.
6. Temporary stays may be required during construction and/or maintenance works.

Refer dwg 5-7-3-2 for Foundations
Refer dwg 5-4-268-4 for Pole Construction