





Elphinstone Underground Support Solutions elphinstone.com

UNDERGROUND RELIABILITY



### TECHNICAL SPECIFICATIONS

#### Engine

| 5                        |                               |         |                 |            |                           |          |
|--------------------------|-------------------------------|---------|-----------------|------------|---------------------------|----------|
| Engine Tier              | Tier 3 - Standard Tier 4 Fina |         | Tier 4 Final (I | _ow Power) | Tier 4 Final (High Power) |          |
| Engine Model             | Cat C7.1 ACE                  | RT (TA) | Cat C7.1 ACE    | RT (TA)    | Cat C7.1 ACE              | ERT (TA) |
| Gross Power SAE J1995    | 168 kW                        | 225 hp  | 129 kW          | 173 hp     | 151 kW                    | 202 hp   |
| Displacement             | 7.0131 L                      | 428 in3 | 7.0131 L        | 428 in3    | 7.0131 L                  | 428 in3  |
| Bore                     | 105 mm                        | 4.1 in  | 105 mm          | 4.1 in     | 105 mm                    | 4.1 in   |
| Stroke                   | 135 mm                        | 5.3 in  | 135 mm          | 5.3 in     | 135 mm                    | 5.3 in   |
| Number of Cylinders      | 6                             |         | 6               |            | 6                         |          |
| Max Torque @ Rated Speed | 1028 Nm @ 1                   | 400 rpm | 842 Nm @ 1      | 400 rpm    | 870 Nm @ 1                | 400 rpm  |
| Derating Altitude        | 3000 m                        | 9843 ft | 3000 m          | 9843 ft    | 3000 m                    | 9843 ft  |
| Emission Certification   | EPA Tier 3                    |         | EPA Tier 4 Fi   | nal        | EPA Tier 4 Final          |          |
| Alternator               | 150 amp                       |         | 150 amp         |            | 150 amp                   |          |
| Electrical System        | 24 V                          |         | 24 V            |            | 24 V                      |          |
| Battery - Quantity       | 2                             |         | 2               |            | 2                         |          |
| Battery - Volts          | 12 V                          |         | 12 V            |            | 12 V                      |          |
| Battery - Capacity       | 1000CCA                       |         | 1000CCA         |            | 1000CCA                   |          |
| Starting System          | Direct Electric               | 5       | Direct Electr   | ic         | Direct Electr             | ic       |

• Power ratings apply at 2200 rpm when tested under the specified standard conditions.

• Based on standard air conditions of 25' C (77' F) and 99 kPa (29.32 in Hg) dry barometer. Used 35' API gravity fuel having an LHV of 42,780 kJ/kg (18,390 BTU/lb) when used at 30° C (860 F) [ref. A fuel density of 838.9 g/L (7.001 lb/gal].

#### Powertrain

| Travel Speed - Fwd. 1st      | 5.7 km/h   | 3.5 mph  |
|------------------------------|--|----------|
| Travel Speed - Fwd. 2nd      | 9.4 km/h   | 5.8 mph  |
| Travel Speed - Fwd. 3rd      | 15.0 km/h  | 9.3 mph  |
| Travel Speed - Fwd. 4th      | 20.0 km/h  | 12.4 mph |
| Travel Speed - Fwd. 5th      | 32.2 km/h  | 20.0 mph |
| Travel Speed - Rev. 1st      | 5.7 km/h   | 3.5 mph  |
| Travel Speed - Rev. 2nd      | 9.4 km/h   | 5.8 mph  |
| Travel Speed - Rev. 3rd      | 20.0 km/h  | 12.4 mph |
| Torque Converter Type        | Lock-up clutch   |          |
| Transmission                 | 5 fwd / 3 rev<br>countershaft powershift                               |          |
| Steering, Frame Articulation | 42.5 degrees   |          |
| Brakes - Service Type        | Hydraulic applied inboard<br>WET disc enclosed                         |          |
| Brakes - Parking Type        | Internal Spring Applied<br>Hydraulically Released wheel<br>ends (SAHR) |          |
| Tyres                        | 14.00 R20  |          |
|                              |  |          |

#### Service Refill

| Fuel Tank   | 340 L  | 89.8 gal |
|---|--------|----------|
| Cooling System                                    | 50 L   | 13.2 gal |
| Differential, Final Drive - F                     | 18.5 L | 4.9 gal  |
| Differential, Final Drive - R                     | 18.5 L | 5.4 gal  |
| Engine Oil  | 13.5 L | 3.6 gal  |
| Transmission, Torque Converter                    | 31 L   | 8.2 gal  |
| Hydraulic Tank                                    | 150 L  | 39.6 gal |
| Diesel Exhaust Fluid (DEF)<br>(Tier 4 Final Only) | 16 L   | 4.2 gal  |

#### Weights

| 0                                    |                             |                               |
|--------------------------------------|-----------------------------|-------------------------------|
| Gross Vehicle Weight (GVM)           | 23,400 kg                   | 51,588 lb                     |
| Tare Weight                          | 18,400 kg                   | 40,565 lb                     |
| Scissor Lift Platform Weight Limit   | 5,000 kg                    | 11,023 lb                     |
| Scissor Lift Platform Rated Capacity | 4 persons,<br>plus 4,600 kg | 4 persons, plus<br>10,141 lbs |

\*Tare weight includes one operator and a full tank of fuel.

# Speed on Grade

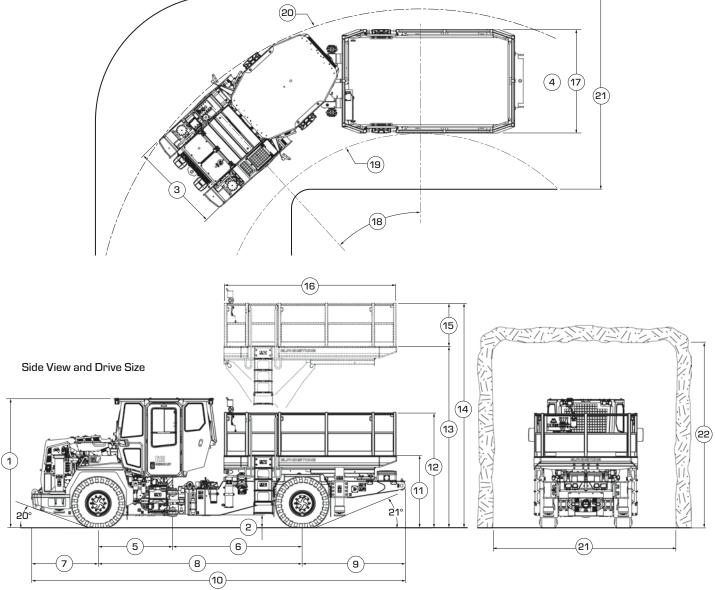
| Cat C7.1 ACERT,                   | IDBKVV IIE           |               |             |         |         |
|-----------------------------------|----------------------|---------------|-------------|---------|---------|
| Grade                             | Vehicle Speed (km/h) |               |             |         |         |
|                                   | 1st Fwd              | 2nd Fwd       | 3rd Fwd     | 4th Fwd | 5th Fwd |
| 1:7 (14%)<br>Empty<br>(18,400 kg) | 5.7                  | 9.4           | 15.0        | 18.2    | -       |
| 1:7 (14%) GVM<br>(23,400 kg)      | 5.7                  | 9.4           | 14.4        | -       | -       |
| Cat C7.1 ACERT,                   | 151kW Tie            | r 4 Final (Hi | igh Power)  |         |         |
| Grade                             |                      | Vehic         | le Speed (k | .m/h]   |         |
|                                   | 1st Fwd              | 2nd Fwd       | 3rd Fwd     | 4th Fwd | 5th Fwd |
| 1:7 (14%)<br>Empty<br>(18,400 kg) | 5.7                  | 9.4           | 15          | 16.4    | -       |
| 1:7 (14%) GVM<br>(23,400 kg)      | 5.7                  | 9.4           | 13.0        | -       | -       |
| Cat C7.1 ACERT,                   | 129kW Tie            | r 4 Final (L  | ow Power)   |         |         |
| Grade                             |                      |               | -           |         |         |
|                                   | 1st Fwd              | 2nd Fwd       | 3rd Fwd     | 4th Fwd | 5th Fwd |
| 1:7 (14%)<br>Empty<br>(18,400 kg) | 5.7                  | 9.4           | 13.7        | 13.7    | -       |
| 1:7 (14%) GVM<br>(23,400 kg)      | 5.7                  | 9.4           | 10.9        | -       | -       |

#### Standards

| ROPS/FOPS      | ISO 3471:2008 / ISO 3449:2005     |
|----------------|-----------------------------------|
| Steering       | ISO 5010:2007                     |
| Braking        | ISO 3450-2011/CSA-M424.3-M90      |
| EWP (Platform) | AS 1418.10:2011 (Group A, Type 1) |



# Turning Radius



| Dir | nensions                                       |         |            |
|-----|--|---------|------------|
| 1   | Height - Top of Cabin                          | 3000 mm | 9 ft 10 in |
| 2   | Height - Ground Clearance                      | 305 mm  | 0 ft 12 in |
| З   | Width - Machine Front Frame                    | 2100 mm | 6 ft 11 in |
| 4   | Width - Machine Rear Frame                     | 2100 mm | 6 ft 11 in |
| 5   | Length - Front Axle to Hitch                   | 1725 mm | 5 ft 8 in  |
| 6   | Length - Hitch to Rear Axle                    | 3000 mm | 9 ft 10 in |
| 7   | Length - Front Axle to Bumper                  | 1545 mm | 5 ft 1 in  |
| 8   | Length - Wheel Base                            | 4725 mm | 15 ft 6 in |
| 9   | Length - Rear Axle to Tow Point                | 2385 mm | 7 ft 9 in  |
| 10  | Length - Overall                               | 8655 mm | 28 ft 4 in |
| 11  | Height - Ground to Platform Floor<br>(Lowered) | 1680 mm | 5 ft 6 in  |
| 12  | Height - Ground to Platform Rail<br>(Lowered)  | 2690 mm | 8 ft 9 in  |

#### Dimensions

| 13 | Height - Ground to Platform Floor<br>(Raised) | 4200 mm  | 13 ft 9 in |
|----|---|----------|------------|
| 14 | Height - Ground to Platform Rail<br>(Raised)  | 5200 mm  | 17 ft      |
| 15 | Height - Platform Floor to Rail               | 1000 mm  | 3 ft 3 in  |
| 16 | Length - Platform                             | 4000 mm  | 13 ft 1 in |
| 17 | Width - Platform                              | 2400 mm  | 7 ft 10 in |
| 18 | Articulation                                  | 42.5 deg |            |

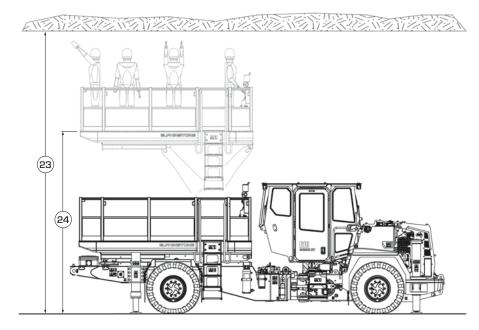
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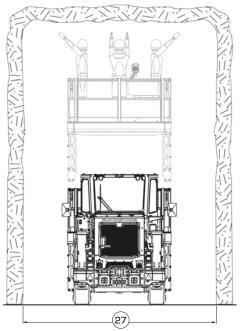
## **Drive Size**

| 19 | Radius - Inside Clearance - By design  | 4630 mm | 15 ft 2 in |
|----|--|---------|------------|
| 20 | Radius - Outside Clearance - By design | 7510 mm | 28 ft 3 in |
| 21 | Minimum Width Portal (90° corner)      | 4500 mm | 14 ft 9 in |
| 22 | Typical Mimum Height Portal            | 4500 mm | 14 ft 9 in |



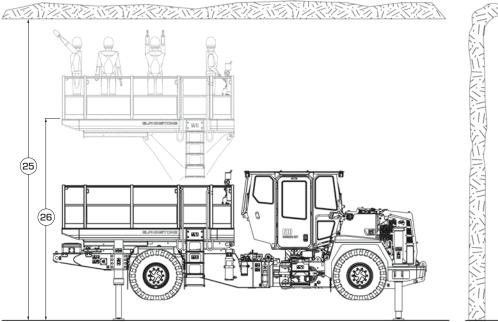
# Maximum Clearance EWP Fully Extended

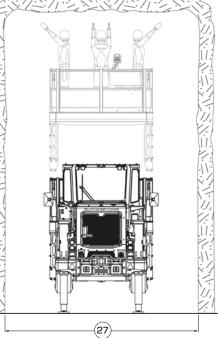




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Maximum Clearance EWP Fully Extended with Jacking Legs



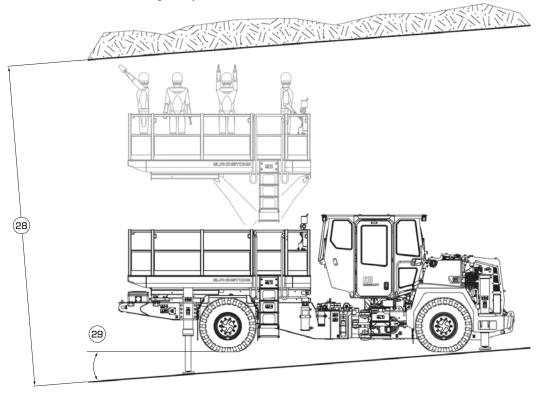


# **EWP Maximum Working Heights**

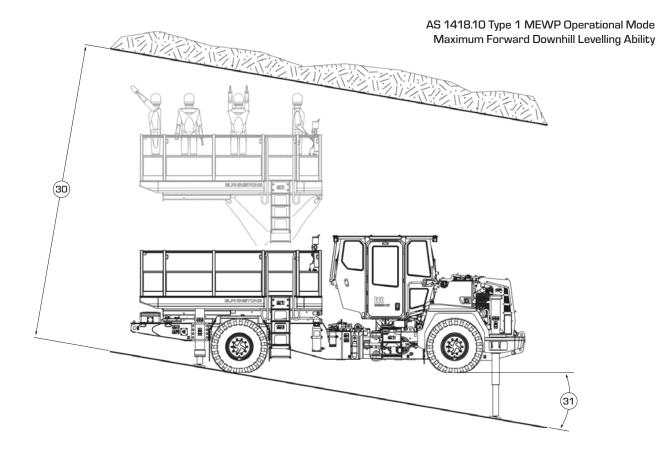
| 23 | Height - Platform at Maximum Elevation  | 6500 mm | 21 ft 4 in |
|----|---|---------|------------|
| 24 | Height - Platform Floor at Maximum Elevation  | 4200 mm | 13 ft 9 in |
| 25 | Height - Platform at Maximum Elevation, Jacking Legs Extended                                 | 7000 mm | 23 ft      |
| 26 | Height - Platform Floor at Maximum Elevation, Jacking Legs Extended                           | 4655 mm | 15 ft 3 in |
| 27 | Minimum Width Portal (90° corner)   | 4500 mm | 14 ft 9 in |
| 28 | Height - Maximum Rearward Downhill Levelling, Platform Fully Extended, Rear Jacking Legs Down | 7000 mm | 23 ft      |
| 29 | Slope - Maximum Rearward  | 4.7°    | 8%         |
| 30 | Height - Maximum Forward Downhill Levelling, Platform Fully Extended, Front Jacking Legs Down | 6500 mm | 21 ft 4 in |
| 31 | Slope - Maximum Forward   | 10°     | 17.5%      |
|    |   |         |            |



AS 1418.10 Type 1 MEWP Operational Mode Maximum Rearward Downhill Levelling Ability



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ELPHINSTONE E10 SCISSOR LIFT | 5



#### Powertrain

| Air Cleaner, 2-Stage With Integral Pre-Cleaner              |   |
|---|---|
| All Wheel Drive with Lock-up Torque Converter               | • |
| Axle Breathers, Remote Mounted                              | • |
| Brakes - Parking, Four Wheel Spring Applied, Enclosed Disc  | • |
| Brakes - Service, Four-Wheel Pressure Applied Enclosed Disc | • |
| Brake - Driveline, Electromagnetic Retarder                 | • |
| Clean Emission Module (Tier 4 Final Only)                   | • |
| Driveline Slip-joint, Lubed for Life                        | • |
| Engine, Cat C7.1, ACERT Technology, ATAAC - Tier 3          | • |
| Engine, Cat C7.1, ACERT Technology, ATAAC - Tier 4 Final    | 0 |
| Fan, Sucker   | • |
| Filters, Engine Air, Primary/Secondary                      | • |
| Filters, Fuel, Primary/Secondary                            | • |
| Final Drives, Outboard Planetary                            | • |
| Fuel Transfer Pump (Electric)                               | • |
| Fuel Lines - Double Wire Braided                            | • |
| Fuel Shutoff Valves Supply & Return                         | • |
| Lock - Wheel Nut (Torque Retention)                         | 0 |
| Muffler/Catalytic Converter (Tier 3 Only)                   | • |
| Oscillating Hitch   | • |
| Radiator  | • |
| Steering, Rotary Metering Pump                              | • |
| Suspension, Front Axle                                      | • |
| Transmission, Countershaft Powershift (5F/3R)               | • |
| Universal Joints, Lubed for Life                            | • |
| Fast-Fill Systems   |   |
| Coolant, Engine Oil, Hydraulic Oil, Transmission Oil        | • |
| Fuel, Non-pressurised                                       | • |
| A   |   |

#### Antifreeze

| Coolant, Extended Life for -35°C (-30°F)        | • |
|---|---|
| Coolant, Arctic Extended Life for -50°C (-58°F) | 0 |

#### **Operator Environment**

| 300 mm (12 in) Touch Screen Operator Display  | •  |
|---|----|
| Brake Retarder Control  | •  |
| Cabin, Open, FOPS/ROPS  | •  |
| Cabin, Enclosed, FOPS/ ROPS, Climate Control Modular 24 V<br>HVAC System, Sliding Door Window | •  |
| Cabin, Pressuriser  | •  |
| Cabin, Rear Window Wiper and Washer   | 0  |
| Cabin, Tilt Supports  | •  |
| Cabin, Tilt Supports, Reduced Height  | 0  |
| Cabin, Window Guard, Rear   | •• |
| Camera/Monitor, Reversing   | •• |
| Diagnostic Connector  | •  |
| Engine Idle Timer   | •  |
| Fire Extinguisher 2.5 kg, Hand Held Dry Chemical Powder<br>3A:40B:E<br>LH Side                | •• |
| Fire Extinguisher 2.5 kg, Hand Held Dry Chemical Powder<br>3A:40B:E<br>RH Side                | •• |
| Interior Lamps (LED)  | •  |
| Mirrors, Rear View  | •  |
| Occupancy Indicator, Operator   | •  |
| Seat Belt, 3x Retractable   | •  |
| Seat, T-Seat, Air Suspension, Operator  | •  |

#### **Operator Environment**

| 2x Seat, T-Seat, Air Suspension, Companion              | $\circ$ |
|---|---------|
| Seat Covers, Operator and Companion                     | •       |
| Steering Wheel, Tilt and Telescoping                    | •       |
| Instrumentation, Gauges                                 |         |
| Brake, Accumulator Pressure                             | •       |
| Brake, Oil Pressure                                     | •       |
| Engine, Coolant Temperature                             | •       |
| Engine, Oil Pressure                                    | •       |
| Diesel Exhaust Fluid (DEF) (Tier 4 Final Only)          | •       |
| Fuel, Level   | •       |
| Hydraulic, Oil Temperature                              | •       |
| Pressuriser Air Filter, High Efficiency Particulate Air | •       |
| Pressuriser Air Filter, Activated Charcoal              | •       |
| Speedometer   | •       |
| Steering, System Pressure                               | •       |
| Tachometer  | •       |
| Torque Converter, Oil Temperature                       | •       |
| Instrumentation, Warning Indicators                     |         |
| Brake, Accumulator Oil Pressure                         | •       |
| Brake, Fault  | •       |
| Brake, Park Indicator                                   | •       |
| Cabin, Door Open  | •       |
| Electrical System                                       | •       |
| Emergency Stop  | •       |
| Engine, Coolant Temperature                             | •       |
| Engine, Fault   | •       |
| Engine, Oil Pressure                                    | •       |
| Hydraulic, Oil Level                                    | •       |
| Hydraulic, Oil Temperature                              | •       |
| Steering, Primary                                       | •       |
| Steering, Secondary                                     | •       |
| Torque Converter, Oil Temperature                       | •       |
| Transmission, Fault                                     | •       |
| Transmission, Oil Filter Bypass                         | •       |
| Instrumentation, Digital Data                           |         |
| Gear and Direction                                      | •       |
| Driveline Retarder, Braking Percentage                  | •       |
| Service Hour, Meter                                     | •       |
| Electrical  |         |
| Accessory Power Port (12 V) & (24 V)                    | •       |
| Alarm, Back-up  | •       |
| Alternator, 150 amp                                     | •       |
| Auxiliary Start Receptacle                              | •       |
| Batteries, Maintenance Free (2x1000 CCA)                | •       |
| Battery Isolation, Lockable Disconnect Switch (4 Pole)  | •       |
| Camera / Monitor, Reversing                             | ••      |
| Diagnostic Connector                                    | •       |
| Emergency Stop - Cabin                                  | ••      |
| Emergency Stop - Ground Level, LH Side Front            | ••      |
| Emergency Stop, Additional, RH Side Front               | 00      |
| Horn, Warning   | •       |
| Lights, Beacon (LED). Cab Mounted (Amber/Red/Blue)      | ••      |



# STANDARD AND OPTIONAL EQUIPMENT

# Electrical

| Lights, Headlights (LED)                                |   |
|---|---|
| Lights, Reversing                                       | • |
| Lights, Stop/Tail/Turn (LED)                            |   |
| Lights, Work, Front/Rear - Cab Mounted (LED)            | • |
| Lights, Work, Front/Rear - Cab Mounted (LED) Additional | • |
| Radio, Ready, Communications                            | 0 |
| Radio, AM/FM/USB/Bluetooth                              | 0 |
| Sealed Electrical Connectors                            | • |
| Starter, Electric, Heavy Duty                           | • |
| Starter Isolator, Lockable Disconnect Switch (4 Pole)   | • |
| Starting and Charging System, 24 V                      |   |
|   |   |

# **Hydraulics**

| Case Drain Return Screen               | • |
|--|---|
| Closed Center-load Sensing System      | • |
| Hydraulic Oil Cooler                   | • |
| Hydraulic Oil Filling System, Filtered | 0 |
| Line Filter, Full Flow Return          | • |
| Suction Screen                         | • |

#### Scissor Platform

| Cylinders, Levelling, LH, RH Side, Front and Rear            | •  |
|--|----|
| Gates, Self Closing and Latching                             | •  |
| Ladder, Platform Access, LH Side Front                       | •  |
| Ladder, Platform Access, RH Side Front                       | •  |
| Platform, Group A Type 1 - 5000 kg                           | •  |
| Platform lock, LH and RH Side Rear                           | •  |
| Mesh Sections  | •  |
| Storage, Toolbox   | •  |
| Work Lights, LED, Flood                                      | •  |
| Scissor Lift Control Panel                                   |    |
| Emergency Stop   | •• |
| Fingertip Control, Levelling, Platform and Cylinders         | •  |
| Fire Suppression, Actuator                                   | •• |
| Horn   | •  |
| Indicators, Level  | •  |
| Light, Fault, Red  | •• |
| Light, Interlock, Amber                                      | •  |
| Light, Operation, Green                                      | •  |
| Power Outlets, 12 and 24 Volt                                | •  |
| Pump, Manual Lowering, Emergency Platform                    | •  |
| Switch, Deadman  | •• |
| Switch, Flood Light  | •  |
| Switch, Machine Start / Stop                                 | •  |
| Operator Display   |    |
| Guage, Machine Inclination, Machine Roll                     | •  |
| Guage, Machine Inclination, Machine Pitch                    | •  |
| Indicator, Ground Control Station Active, Flashing, Green    | •  |
| Indicator, Lock, Steering (Red Unlocked, Green Locked)       | •  |
| Indicator, Levelling Cylinder, Grounded/Ungrounded, Green    | •  |
| Indicator, Levelling Cylinder Load (Flash Red on Overloaded) | •  |
| Indicator, Oscillation Angle                                 | •  |
| Indicator, Oil Pressure, Cylinder Rod                        |    |
| Indicator, Oil Pressure, Cylinder Head                       | •  |
| Indicator, Oil Pressure, Levelling Cylinder                  | •  |
| Indicator, Platform Control Station Active, Flashing, Green  | •  |
| Indicator, Platform Height, Graduated Scale, Flashing, Green |    |
|  |    |

# Other

| Brakes, Park, Onboard, Release for Machine Retrieval                                | ••              |
|---|-----------------|
| Engine, Enclosures, Hinged  | •               |
| Film, GP Reflective, Flourescent Yellow   | ••              |
| Film, GP Reflective, Flourescent Orange   | $\circ \bullet$ |
| Fire Extinguisher, 4.5 kg, Hand Held Dry Chemical Powder<br>4A:60B:E LH and RH Side | ••              |
| Fire Extinguisher, 9 kg, Hand Held Dry Chemical Powder<br>6A:80B:E LH and RH Side   | ••              |
| Fire Suppression System, Ansul A101 Dry Chemical Powder,<br>Engine Shutdown         | ••              |
| Fire Suppression System, Sandvik Aqueous-Film Forming Foam,<br>Engine Shutdown      | ••              |
| Grease Lubrication System, Centralised, Manual                                      | •               |
| Grease Lubrication System, Automatic  | 0               |
| Lift, Tie Down and Retrieval Points (Front and Rear)                                | •               |
| Mudguards   | •               |
| Radiator, Cap, Manual Pressure Release  | •               |
| Scheduled Oil Sampling (SOS) ports  | •               |
| Steering, Frame Lock Link   | •               |
| Steering, Secondary   | •               |
| Tyres, Tubeless Rims (14.00 R20)  | •               |
| Tyre and Rim, Spare (14.00 R20)   | •               |
| Unit Number Placard   | 0               |
| Wheel Chocks  | ••              |
|   |                 |

# OVER 45 YEARS IN THE MINING INDUSTRY.

Elphinstone Pty Ltd is an established Caterpillar Original Equipment Manufacturer with over 45 years' experience in the mining industry. Elphinstone specialises in the design, manufacture and support of quality equipment for the global underground and surface mining industries.

The Elphinstone range of Underground Mining Support Vehicles combines practical design, the latest technology and quality manufacturing to ensure reliable performance.

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The current product range includes specialised underground support vehicles, mine extraction devices, extended distance off-highway haulage trucks and water tanks customised to suit Caterpillar articulated trucks.

As an established Caterpillar Original Equipment Manufacturer, all Elphinstone products are sold and supported via the global Cat® dealer network.

# **E10 SCISSOR LIFT**

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