12CM12 CONTINUOUS MINER

Plant Number: MOB-041
EQUIPMENT SPECIFICATIONS

GENERAL

Machine Serial Number: JM5268
Build March 2000
Rebuilt March 2011

Overall Length 11020 mm
Overall Width 3130 mm
Overall Height 1475 mm
Track Centres 2210 mm
Ground Clearance 300 mm
Conveyor width 38” (965mm)
Cutting Height (Max) 3685 mm
Cutting Width 3300 mm
Machine Mass 54 tonnes approx
Machine Width for transport 3300 mm

Conveyor:

The main conveyor chain comprises a single strand centre flight design driven by 2 water cooled electric motors mounted on the shovel. These supply drive to the chain via the front sprocket and shaft assembly.

Discharge Width 965 mm
Nominal Depth 300 mm
Speed 480 F.P.M

MOTORS 50HZ

Cutting 2@ 155 HP (130kW) (Voltage 950)
Pump 1@ 53 HP (40kW) (Voltage 950)
Gathering 2@ 50 HP (37kW) (Voltage 950)
Traction 2@ 35 HP (26kW) (Voltage 250)
Total 533 HP
**STANDARD EQUIPMENT - ELECTRICS**

- **AS 4240-2009 Compliant** Remote controlled miner (3 x Transmitters & 1 x Charge station) Pempek System.
- Emergency Stop Switch(s) – Both Sides at Rear
- Circuit Breakers to Shut - Off Power to complete machine

**STANDARD EQUIPMENT - HYDRAULICS**

- Hose ends - JIC female fittings , pressed on
- Rexroth load sense type pump
- Return line filtration - 10 micron - spin on element
- Injector power fill oil tank
- Oil tank capacity – 510 Lt
- Header tank capacity – 100 Lt
- Wash down hose valve and connection.
- Stabilizer Jack
- All hoses manufactured to MDG.41 Guidelines.

**STANDARD SAFETY FEATURES**

- Fire suppression water sprays
- Methane Monitor (Gasguard)
- Approved face lighting.
- MSHA Spec. Load Locking Valves (Conveyor & Cutter Boom)
- Bumper mounting plates fitted to rear of machine.
- Twin Banshee alarms

**New Design Incorporated into Build:**

1. Hydraulic pump changed from gear style to a Rexroth load sense unit.
2. Valve Bank, changed from original Danfoss to a Rexroth unit
3. Electrical Enclosures. Changed from multiple Joy enclosures to an LJH single main enclosure with a separate main circuit breaker enclosure.
4. Remote System. New Pempek system to AS4240-2009. The internal levels of electronic redundancy, the system incorporates additional layers of protection with electrical redundancy, via the isolation Contactor and hydraulic redundancy, via the isolation Spool. Accordingly, these LOPS mitigate combined system risk to acceptable levels that allow the designer to claim a maximum qualitative low demand SIL2 for the identified functions where applicable.

**Risk Assessments:**

1. Radio Hazard Risk Analysis – Facilitated by Michael Brooks, Pempek Systems Pty Ltd
2. Design Risk Assessment – Facilitated by Greg Venticinque, KKT Australia Pty Ltd
3. FMEA (Electrical Failure Mode Effects Analysis) – Facilitated by Gerard Cleary, Becker Mining Systems
## Main Suppliers / Contractors

<table>
<thead>
<tr>
<th>Company</th>
<th>Services Provided</th>
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</thead>
<tbody>
<tr>
<td>Australian Winch &amp; Haulage Pty Ltd</td>
<td>Major Fabrication and machining</td>
</tr>
<tr>
<td>LJH Electrical Mining</td>
<td>Supply and installation of electricals</td>
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<tr>
<td>Pempek Systems Pty Ltd</td>
<td>Supply and commissioning of remote system</td>
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<tr>
<td>Dowding &amp; Mills Pty Ltd</td>
<td>Refurbishment of electrical motors</td>
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<tr>
<td>Rexroth Bosch Group</td>
<td>Supply of main valve bank and hydraulic pump</td>
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<tr>
<td>Anderson Hydraulics</td>
<td>Rebuild of hydraulic cylinders</td>
</tr>
<tr>
<td>Southcott</td>
<td>Supply of hydraulic hose and fittings</td>
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</table>
Miner chassis prior to installation of electrics and hydraulics.
Driver’s side traction motor installed.

Off-driver’s side traction motor installed.
Motor junction boxes and header tank connection to main hydraulic tank installed.

Pump motor and hydraulic pump setup.

Hydraulic header tank installed on off-driver’s side.
Off-driver’s side rear.
Rexroth main valve bank installed and hosed up.
Hydraulic hosing complete.
I.S. marshalling box installed.

Cutter motor and water flow switches installed.

Main electrical enclosure – LHS internal.

Main electrical enclosure – RHS internal.
Pempek Systems radio remote modules installed.
Main circuit breaker and 1000V receptacle on driver’s side.

Joy 12CM12 Miner rebuild nearing completion.

Joy 12CM12 Miner rebuild nearing completion. New Joy conveyor chain fitted.
Completed Joy 12CM12 Miner cutter head and gathering shovel.

Joy 12CM12 Miner rebuild nearing completion – rear view.

Completed Joy 12CM12 Miner – off driver’s side.

Completed Joy 12CM12 Miner – driver’s side.
Boom and conveyor raised.