

Remote Shotcrete



Mancala's remote shaft shotcreting process ensures an efficient and safe non-entry method of applying ground support to shaft walls.

Wireless communication provides real time monitoring and a video feed to precisely control the 24 volt spray head, methane monitoring control system and shotcrete application parameters.



Capabilities:

- Coal Approved
- Shafts of 1.0m to 7.0m diameter
- 300m standard depth configuration with extension available to 400m
- Plug and play arrangement
- Modular design
- Pre and post 4K video resolution recording
- Intrinsically safe low voltage components in shaft
- Pneumatic powered spray head unit
- Live methane monitoring with shutdown system
- Application from 10mm thickness

The Mancala Group

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Modular Design

The system is designed for both simplified transport and set up with individual modules which are then placed and connected at the collar point of the shaft, with minimal civil infrastructure required.

Module	Description	W (mm)	L (mm)	H (mm)	W (KG)
1	Control room, crane, energy chain winch	2400	9500	3300	16000
2	Energy Chain, service lines (concrete, air and water)	2400	6000	2500	12000
3	Hoist Chain Drive Unit	1500	800	1000	500
4	Large Spray Head Unit	1200	1200	2000	800
5	100m Energy Chain (if required)	2400	3000	2200	2500
6	Small Spray Head Unit	600	600	1800	300
7	Reed Lova Dry mix Concrete Pump	800	800	1200	200



Application Process

Remote shotcreting is a method of applying shotcrete/concrete product to a surface using a re - motely controlled spray head which applies product in a horizontal plane while simultaneously being moved vertically.

The surface control system, operator console, winches and dry mix pump are positioned at the shaft collar. The spray head and service lines are lowered into position using an onboard crane/winch system. The application process is monitored via high definition digital video camera's positioned on the spray head which wirelessly transmit real time footage back to the control station.

The shotcrete product is supplied via a dry mix pump and is pneumatically delivered to the spray head unit, where water is added at a predetermined amount to the dry mix. The spray head is continually rotated allowing the wet mixture to be applied in horizontal layers to the shaft wall.

The Mancala Group

- **SAFETY:** Striving to achieve zero harm
- **QUALITY:** Taking pride in what we make and do; on time, on budget and to specification
- **INTEGRITY:** Doing what we say we will do with honesty and respect
- **INNOVATION:** Revolutionising processes and applying technology to achieve better outcomes for all stakeholders
- **PEOPLE:** Recognising people as our greatest asset and encourage personal excellence