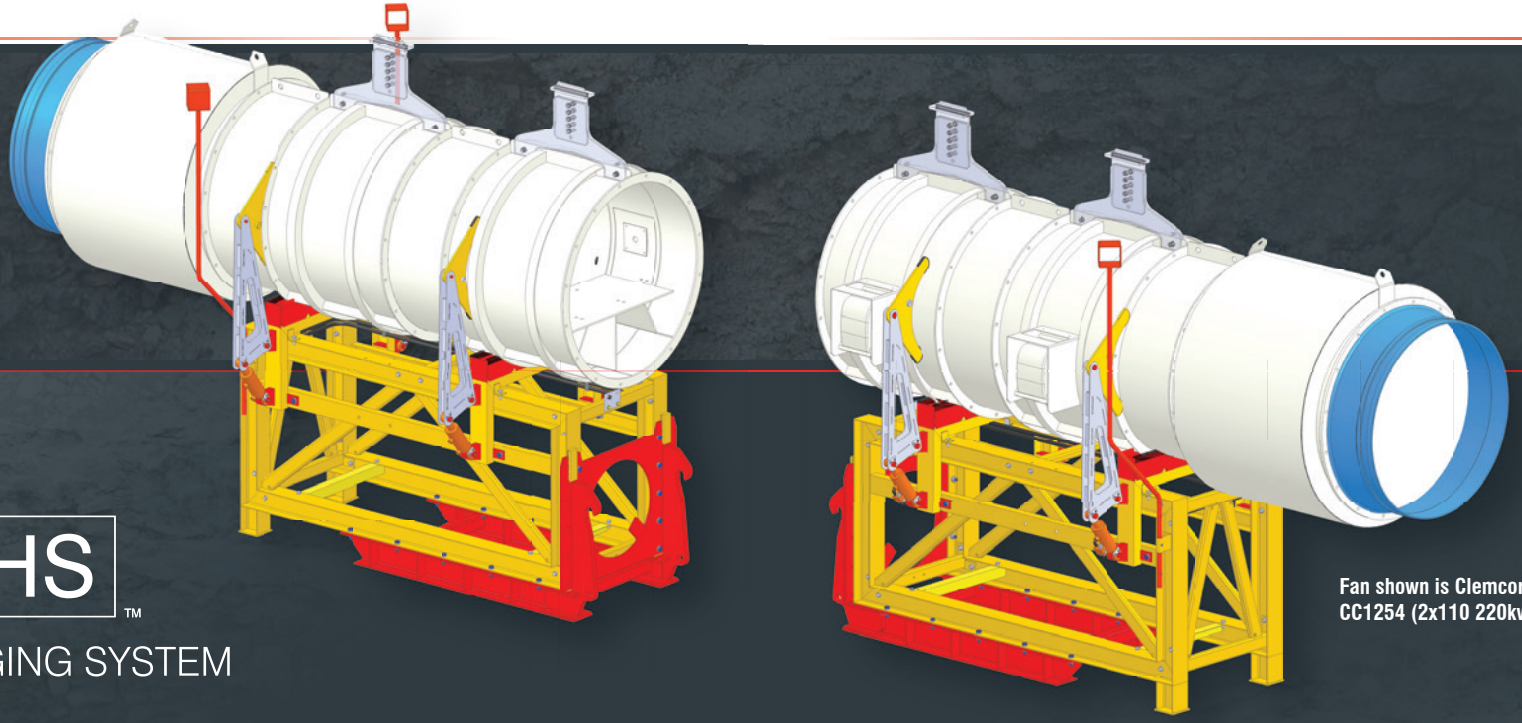
QUATTRO
PROJECT
ENGINEERING

ENGINEERING PARTNERSHIPS



Fan shown is Clemcorp
CC1254 (2x110 220kw)

QFHS™

FAN HANGING SYSTEM

Quattro have developed and implemented a mechanised solution to installing and removing underground mine ventilation fans. Traditionally, this activity has required working at heights procedures and exposed employees to awkward work spaces to accommodate the fan geometry. This system does not require any working at heights when installing the fan and additional work to attach ducting can be carried out from a standard work basket. The system is time efficient, and requires less personnel than traditional methods, resulting in significant reduction in exposure of employees to risk.

Traditionally, underground ventilation fans have been installed using a purpose built 2-deck work platform attached to an Integrated Tool Carrier (ie Volvo L120 or equivalent).

Prior to hanging the fan, brackets are installed to the tunnel backs (ceiling) using a Jumbo drill rig. Personnel working in the work platform attach the ventilation fan to the bracket using chain slings. The fans have a diameter of up to 1400mm, which limits work area in the basket and restricts accessibility to the attachment points. The activity requires skill and dexterity on the part of the personnel, along with the inherent working at heights risks.

Products

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QFHS™

Fan Hanging System

HAZARDS AND RISK MITIGATION

Installation of a secondary ventilation fan in an underground mine involves personnel working at height in a constrained work environment.

Hazards in this process include slip, trip and fall events along with ergonomic hazards such as reaching and stretching associated with the manual handling aspects of the task. Visibility is limited and the work platform is controlled by the operator of the Integrated Tool Carrier who has difficulty in maintaining visual contact with personnel.

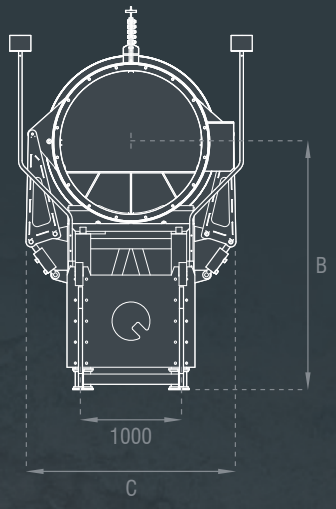
- QuickHitch
- AS 3990 Compliant
- Modular Frame
- Hydraulic Support System
- Adapted for Volvo L120 ITC
- Reduced installation time
- Innovative Safety Solution
- Camera & Light
- Fully automated, manless operation
- Improved efficiency and safety

Fan Type	Dimensions			
	A	B	C	D
CC1254 (2X55KW) TWIN STAGE	4070	2335	1940	3545
CC1400 (2X110KW) TWIN STAGE	5095	2405	2080	3685

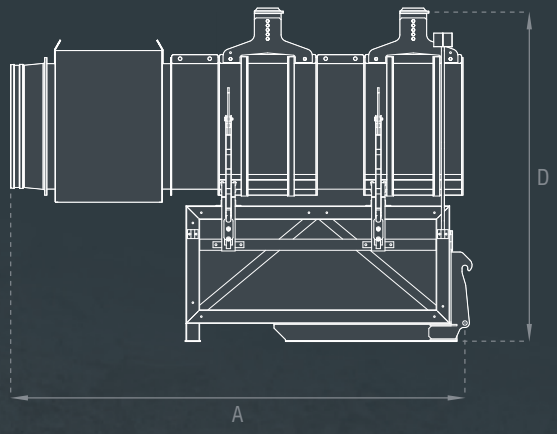
INNOVATION

To minimise exposure of personnel to the hazards of working at height and working in a constrained environment, Quattro developed a system to remotely install the fans using a purpose built handling platform and guided locking bracket to support the fan.

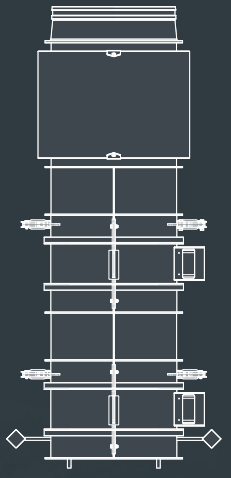
The fan can be installed and removed by the IT operator, without requiring personnel in the basket. A camera and lighting system with display in the IT cab provide vision to the fan bracket during installation, and the IT operator has control over the basket gripper arms to release the fan when the installation is complete.



Front View



Side View


Plan

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