Introduction

Chairlift Systems

Elite Mining has developed and designed its own man riding Chairlift System which transports a workforce to and from the workplace by means of a continuous ropeway system.

Drive Units

ELITE’s new hydraulic drive is an upgraded system which is called a Closed Loop System. A Closed Loop System inherently has good soft – start / stop capabilities, which is achieved by controlling the flow of the oil from the control servos. Oil is circulated from pump to motor, then back to the pump inlet without passing through the reservoir. A percentage of the oil is...
continuously being removed from the loop and replaced with cool, filtered oil, to prevent overheating of the loop oil.

Chairlift Characteristics vs Hydraulic drives:

**Soft-start:** Controlled by the rate at which the variable displacement pump moves into stroke.

**Soft-stop:** Controlled by needle valves which direct the flow of oil from the brakes back to tank, therefore controlling the rate of brake-application.

**Roll-back & run-away:** Controlled by load holding valves fitted in the motor circuit.

**Maximum torque output:** The maximum torque output is controlled through fitment of a relieve valve in the hydraulic system. These valves are commonly set to 250 BAR, this pressure is sufficient for the maximum torque required to drive the chairlift.

**Advantages of hydraulic drives:**

- Soft start of chairlift achieved hydraulically, thus no frequency converter required.
- Drive- and braking systems are dependant of each other, i.e the systems do not work independently.
- The hydraulic motor can keep the chairlift stationary even if the brakes are disengaged.
- Over-speed of chairlift controlled hydraulically.
- Run-away of chairlift prevented using hydraulic valves.
- Roll-back of chairlift prevented using hydraulic valves.
- Minimum electrical controls required.
- Well maintained hydraulic systems can have life expectancies in excess of 20 years.
- All hydraulic components are interchangeable.
- The output speed of the chairlift can be adjusted when necessary.
- Hydraulic drives running at lower pressures (input to hydraulic drive motor) have higher life expectancies than drives running at higher pressures.
- A sequence of hydraulic pressure transducers can be installed in the system for data capturing. Working / loading conditions can be monitored (and stored). Possible faults can be identified; therefore preventative maintenance can be carried out.
Elite’s design philosophy is to design products which are maintenance-friendly, quality products.

All equipment is designed as an Elite product to fit the standard designs of the Elite chairlift offerings. Most products can however be replaced with existing equipment.

Elite offers the following products as spares:

- Chairs - (for enquiries please download PDF)
- Rope Grips
- Line Wheels 202 range
- Line Wheels 206 range
- Various wheel insert designs
- High Friction Drive and Return Wheel Inserts

Click on the thumbnails below to view the product images:
The 202 Series range:
The line wheels are 200mm in diameter and are made from heavy duty steel castings. The wear inserts are replaceable on these wheels. Adjustable line stand mountings are designed to accommodate these wheels in the following combinations:

- Single wheel arrangements
- Double Wheel arrangements (2 point pivot plates – 2PPPL)
- 4 Wheeler arrangements (4 point pivot plates – 4PPPL)
Click on the thumbnails below to view the product images:

Series 206

The 203 Series range:
The line wheels are 300mm in diameter and are manufactured with 3mm pressed steel plates. Adjustable line stand mountings are designed to accommodate these wheels in the following combinations:

- Single wheel arrangements
- Double Wheel arrangements (2 point pivot plates – 2PPPL)
- 4 Wheeler arrangements (4 point pivot plates – 4PPPL)
- 6 Wheeler arrangements (6 point pivot plate – 6PPPL)
- 8 Wheeler arrangements (8 point pivot plate – 8PPPL)

Click on the thumbnails below to view the product images:
Retrofits are done on old chairlift systems where the currently installed equipment is out of date or replacement spares cannot be sourced.

Elite uses the existing drive structure and designs the hydraulic equipment around the structure. The gearbox is replaced with the specified hydraulic motor, pump and motor.

The installed equipment works best with an Elite designed Electrical Control Panel which is designed around the mines requirements.