

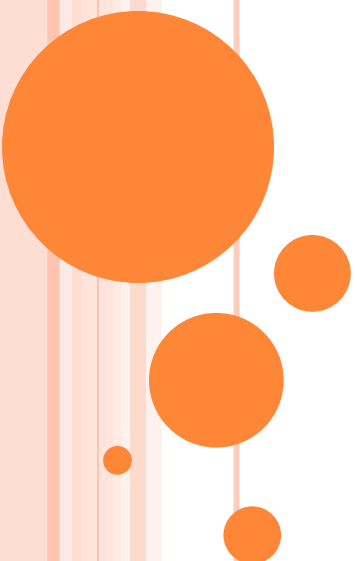


MAN RIDING CHAIRLIFT SYSTEM

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INTRODUCTION:-

- Man Riding systems are safe and comfortable for transporting the persons fast in underground mines over long distances.
- This transportation includes mine gradients and curves.
- These systems are used to increase the effective utilization of man power and eliminate the drudgery in walking in both gradients and levels of the mines.

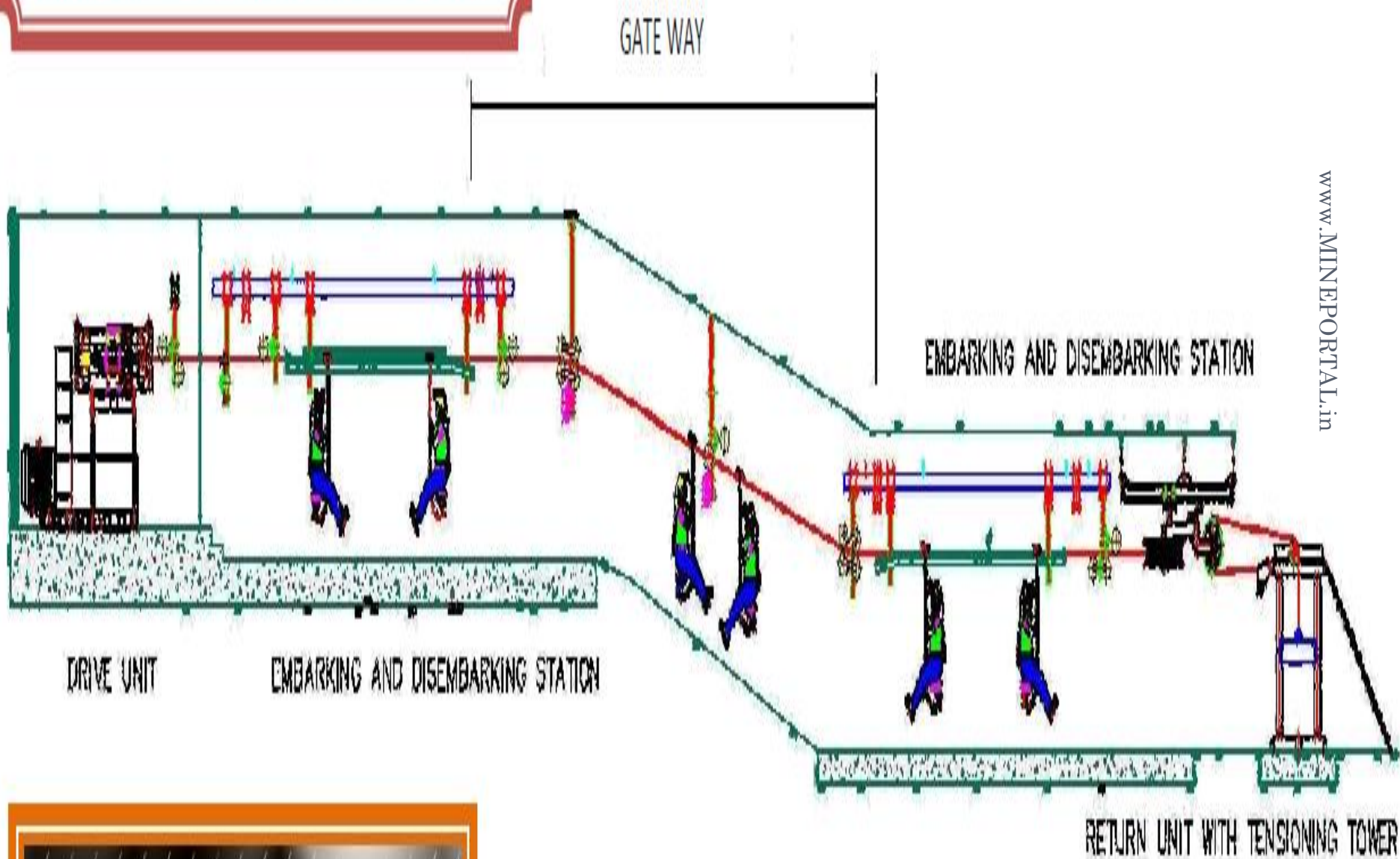


INTRODUCTION:-

- They can be used in vertical and horizontal curves.
- These systems have become increasingly important in modern mining where production losses result from ever-longer travel distances underground.



MAN RIDING CHAIRLIFT SYSTEM



INSTALLATION:-

It consists of an endless rope.

A drive station installed at the head of the system drives the wire rope at the appropriate speed.

The rope is operated by a drive pulley, supported by intermediate guide rollers and the closed loop is established with the help of a return pulley.



INSTALLATION:-

- The return station is in conjunction with a tensioning tower which has a dead weight arrangement for the purpose of tensioning.
- There is a embarking station at the gate of the incline/decline and multiple embarking/disembarking stations at the intermediate levels.



WORKING: (CONVENTIONAL)

- A detachable chair has to be put on a rope and sitting on the chair gives the movement to the person.
- The chair rests on the rope of the man riding system and the movement of the rope through the horizontally placed drive pulley gives the movement to the chair.





WORKING:-

- The manriding chairs are securely held on an endless wire rope by positive friction.
- The system is switched on and off optionally by one or more main switches or by a pull-cord in the transport section.
- The chair speed is regulated by means of an adjusting lever which permits continuously variable transport speed from 0-3.0 m/sec.



SAFETY FEATURES:-

- Pull Cord system provided to ensure safe travel of the persons.
- Hydro-mechanical fail safe brake is also provided for Park and emergency brake.
- Over speed limit



SAFETY FEATURES:-

- Hydraulic Brake system,
- Telephone Communication System
- Emergency Pull-Cord system and
- Audio video alarm system.



PRINCIPAL COMPONENTS:-

- Drive station
- Embarking / Disembarking Station
- Intermediate Support Rollers
- Return Station with Tensioning Tower



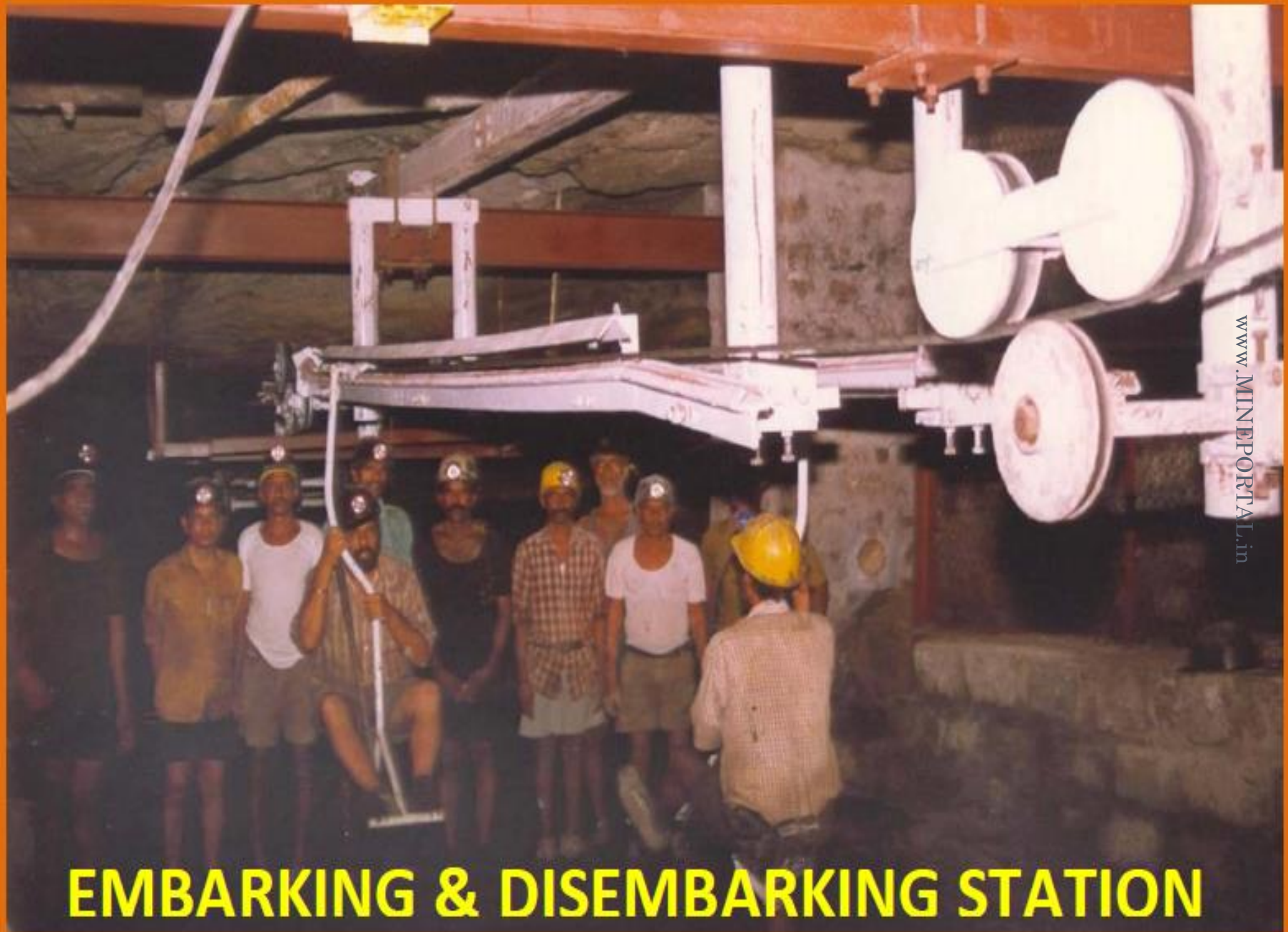


The drive end is always placed on the uphill side of the mine.

It consists of a drive pulley through which the rope passes.

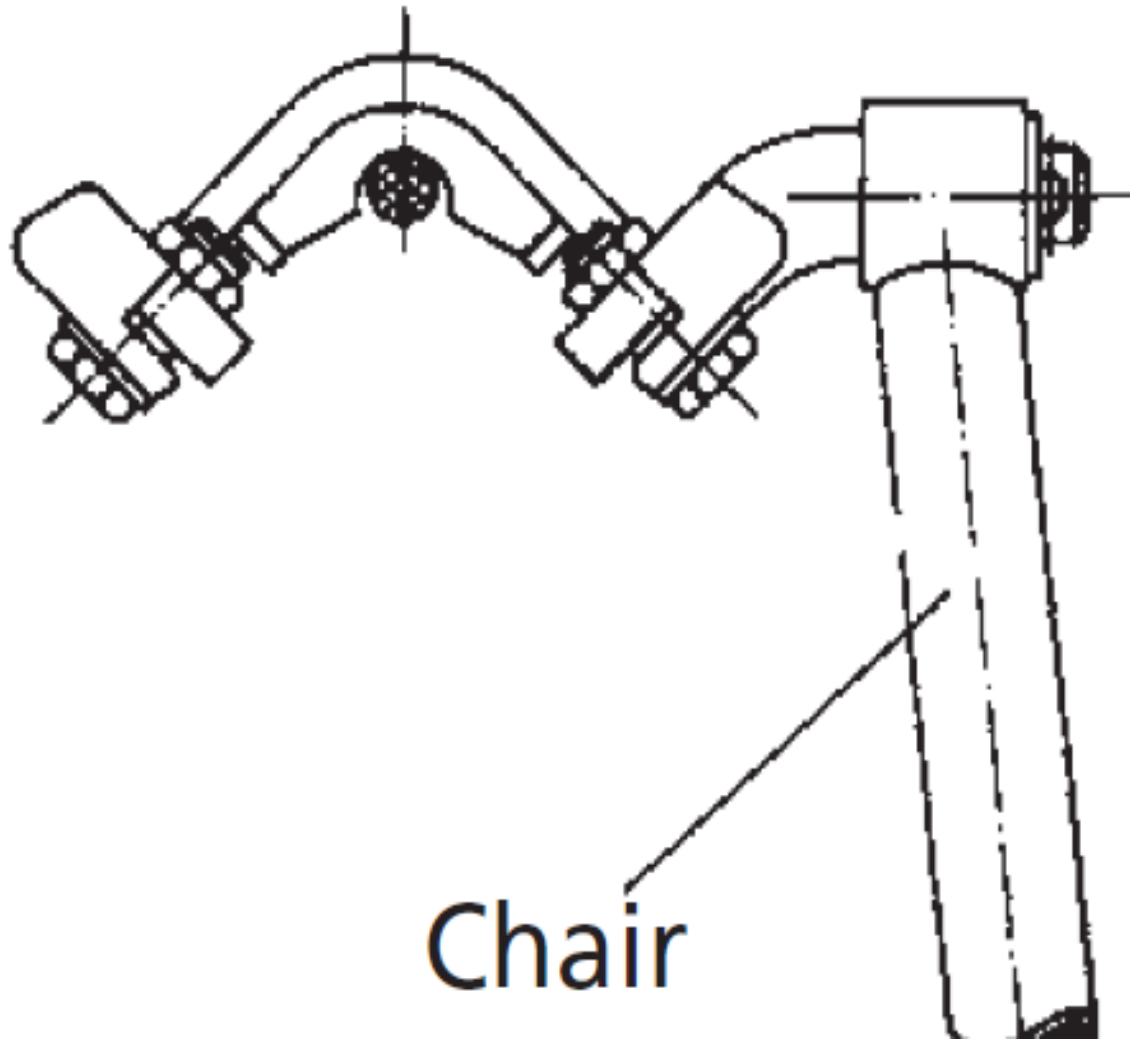
The drive is either electric operated or electro-hydraulic operated or purely hydraulic operated.





EMBARKING & DISEMBARKING STATION

Support element with 4 rollers of APOD II

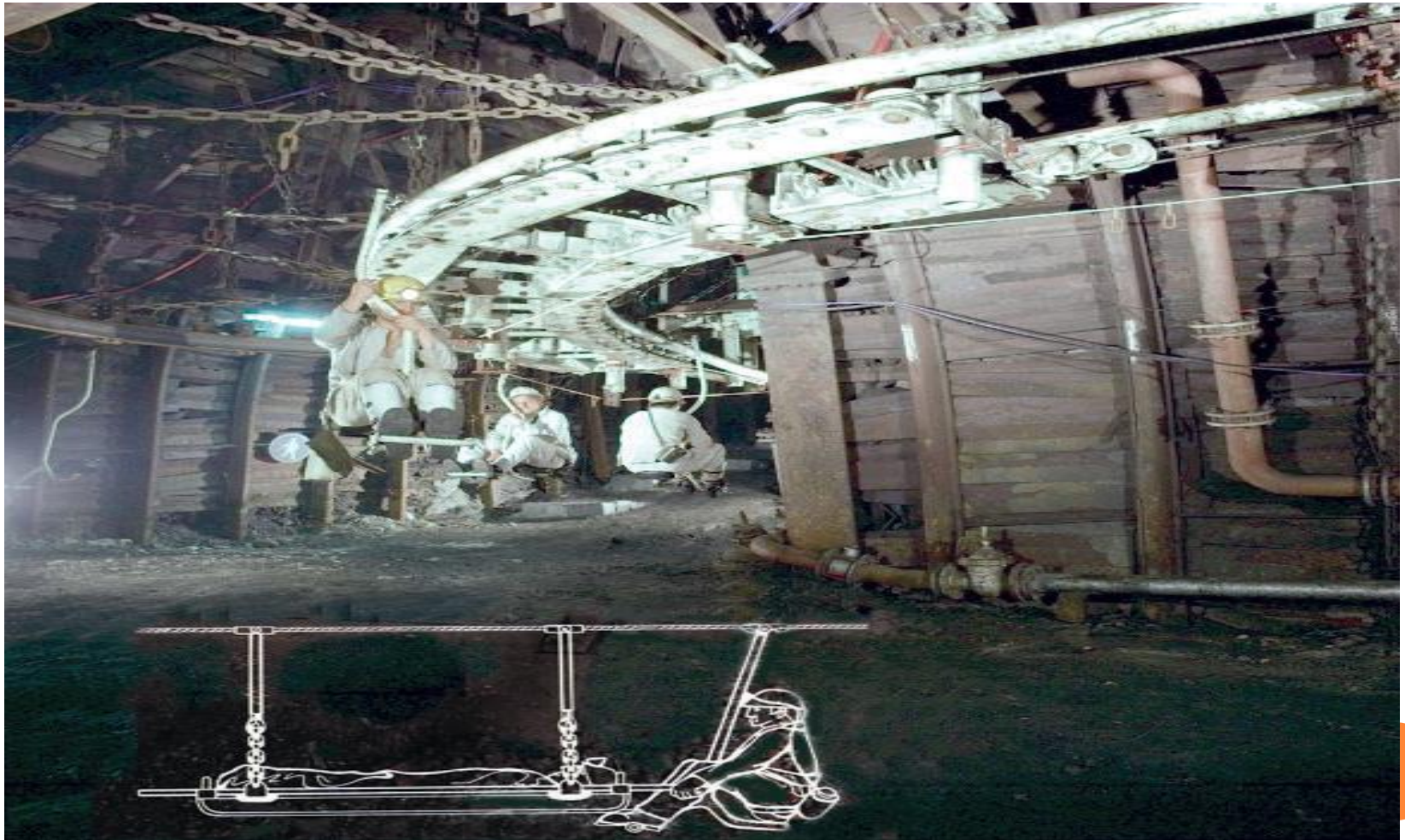


INTERMEDIATE STATIONS:-

- The embarking and disembarking stations are made of welded steel sections with a longitudinal design ensuring reliable chair uncoupling and pick-up by the wire rope in the transition area from wire rope to rail.
- The detachable chairs are automatically taken off the rope and guided on tubes
- Horizontal course deviations may be overcome without problems by means of curve stations which are suspended in the transport section by anchoring chains.



INTERMEDIATE STATIONS:-



RETURN STATION:-

- The return station is located in the underground area and has a tensioning arrangement along with it.
- In the tensioning arrangement there is a hanging weight and the weight ensures the necessary rope tension in the system and serves to compensate for various loads.

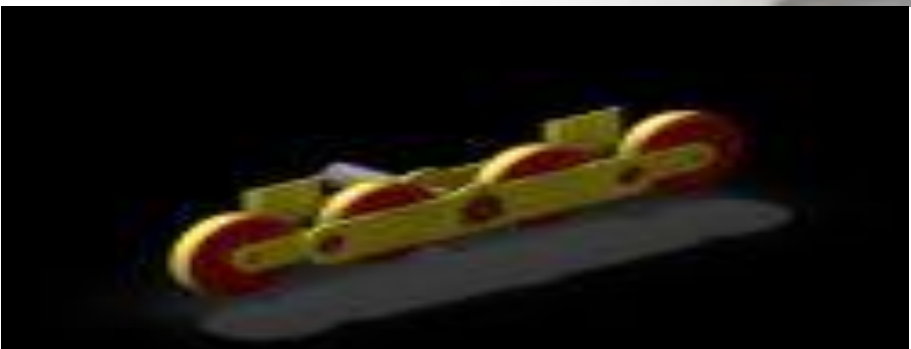




LINE WHEELS:-

- Line wheels have a diameter of 200-300 mm.
- Wheels are mounted on the stands by:
 - single wheel arrangement
 - 2 wheel arrangement
 - 4 wheel arrangement
 - 6 wheel arrangement
 - 8 wheel arrangement





TECHNICAL SPECIFICATIONS(APOD II)

- Length of installation : 3 Km Max.
- Drive Power : 22 KW to 132 KW [Depends on Gradient and Distance]
- Rope Size : Ø 16 mm
- Rope Speed : average 3 meter per second
- Gradient Requirements : Maximum Gradient: 1 in 4
- Negotiate of HorizontalCurves : $>90^\circ$
- Working Pressure : 210 Bar max.(if hydraulic)
- Man riding capacity per hour : 400-720 persons
- Operating Voltage : 550V / 440V AC 3 Ph. 50 Hz.



ADVANTAGES:-

- Economic set up
- Continuous transport system as chairlifts are permanently available
- Fast, safe and easy to use and operate
- Typically automated, thus need no operator
- Very little maintenance.
- Increases profit of the mines

