



ANJUMAN-I-ISLAM'S KALSEKAR TECHNICAL CAMPUS NEW PANVEL

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SCHOOL OF ENGINEERING & TECHNOLOGY

SCHOOL OF PHARMACY

SCHOOL OF ARCHITECTURE

Construction Equipments & Techniques - Scrapers Mr. Prathamesh Gawade, Asst. Professor

Department: B.E. Civil Engineering Subject: Advanced Construction Equipments

Construction Equipments & Techniques

Scrapers





Scrapers

- Designed to load, haul & dump.
- Suitable for medium hauls (0.2 to 1 km).
- Combines function of 3 different equipments. Hence, economical.
- Operating Parts – Bowl, Apron, Ejector.
- Types : Pusher loaded, Self-Loading

Operating parts



■ Bowl

- Loading & Hauling Component.
- Consists cutting edge that extends across front bottom edge.
- Lowered during loading & raised during haul.

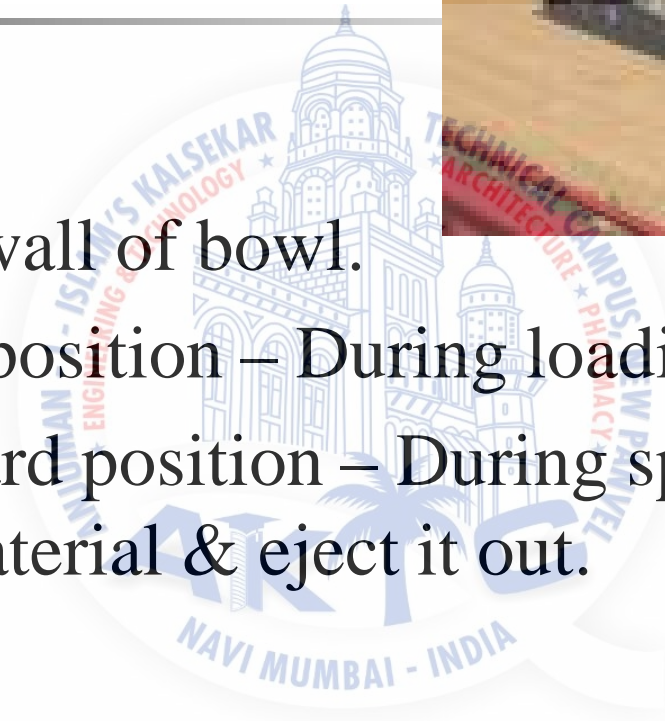
■ Apron

- Front wall – Independent of Bowl.
- Raised during loading & dumping to allow the material to flow in & out.
- Lowered during hauling to prevent Spillage

Operating parts

■ Ejector

- Rear wall of bowl.
- Back position – During loading & hauling.
- Forward position – During spreading to push the material & eject it out.





Working

Loading

- Front edge is lowered until cutting edge enters the ground
- Simultaneously, front apron is raised to provide an open slot through which earth flows into the bowl.

Raising

- Scraper is moved forward till the bowl is filled.
- When bowl is filled completely, the cutting edge is raised & apron lowered to prevent material spillage.



Working

Hauling

- During haul, bowl is kept just high enough to clear the ground.

Dumping

- Cutting edge is lowered to desired height above the fill.
- Apron is raised & then material is forced out by means of a movable ejector mounted at the rear of the bowl.



Increased Productivity

- Pre-Scrape Ripping.
- Ripping Depth $>$ Excavation Depth (loose material under tyres provide better traction & reduces the wear on track & tyres.)
- Pre-wetting of soil.
- Loading downgrade & in the direction of haul.
- Proper Maintenance