SCRAPE R RECLAIMER TECHNOLOGY
Optimal Solutions for Bulk Material Handling
Tenova TAKRAF is an integrated solutions provider to the global mining, bulk material handling, minerals processing and beneficiation industries, offering innovative technological solutions as well as process and commodity knowledge along the industry value chains. With the integration of the well-known DELKOR and, more recently, the Tenova Advanced Technologies (formerly Bateman Advanced Technologies) brand of products into TAKRAF, our portfolio for the mineral processing and beneficiation sectors has been considerably enhanced.

TAKRAF is a key supplier of equipment and systems for open pit mining and bulk handling, having provided hundreds of complete systems, as well as individual machines, to clients all over the world. Based upon more than a century of experience and know-how, the product range stretches from overburden removal, raw material extraction, conveying, processing, comminution, homogenizing, blending and storage to onward transport or shipment.

TAKRAF provides the full range of services, from project studies, planning, engineering and design to fabrication, supply, erection and commissioning, technical assistance, service and after-sales service for plants, systems and equipment. Its equipment has proved robust and reliable in adverse geological conditions, in extreme climates with temperatures down to minus 45°C, in dust, wind or extreme humidity, as well as in seismic zones and altitudes of up to 5,000 m above sea level or in underground applications.

TAKRAF has committed to both environmental and social sustainability in their business interactions and has adopted a Zero harm approach to safety under the SAFETY FIRST promise of the Tenova Group.
Our Competence in Scraper Reclaiming Technology

- Decades of experience in building scraper reclaimers
- Proven and reliable equipment solutions based on profound know-how
- Excellent track record with about 400 successful reference projects worldwide
- Vast expertise in handling bulk materials such as coal, lignite, iron ore, bauxite, zinc ore, kimberlite, potash, phosphate, rock salt, urea, pet coke, slag, clinker, gypsum or limestone
- Strong global network for local technical support and site services

Our Product Portfolio

Machines:
- Bridge-type scraper reclaimers
- Portal and semi-portal scraper reclaimers
- Cantilever scraper reclaimers
- Combined stackers/scaper reclaimers
- Circular blending beds with bridge-type scraper reclaimers
- Circular storages with cantilever, semi-portal or full-portal scraper reclaimers

Technical features:
- Portal Reclaimers: Rail gauges up to 70 m and capacities up to 6,000 t/h
- Bridge Reclaimers: Rail gauges up to 60 m and capacities up to 2,500 t/h
- Circular Storages: Storage capacities up to 350,000 m³ with diameters up to 150 m
- Blending Beds: With up to 400 layers blending ratios of up to 10:1

TAKRAF offers a variety of solutions ranging from single machines to integrated systems and complete turn-key projects.
Twin boom portal reclaimers are high capacity machines usually employed in operations where high volumes of bulk materials are being handled.

The featured scraper reclaimer (fig. 4) is equipped with a drag trough for each reclaimer boom and has an average reclaiming capacity exceeding 3,000 t/h. The machine has a rail gauge of 52 m and serves a coal storage with a width of 45 m and a length of 435 m. It is part of a turnkey project including a stacker, a conveyor system and a railcar loading station.

In a German lignite mine two portal scraper reclaimers work at a storage (fig. 2) serving as a 400,000 tons buffer between an open-pit mine operation and a 2 x 900 MW power plant. A fully automated stacking method combined with side reclaiming ensures for this application best blending results and continuously high lignite quality for power generation.

The reclaiming capacity of each portal scraper is 2,400 t/h and the rail gauge 62.5 m. These machines are worldwide the first portal scraper reclaimers to be employed in a buffer and blending stockyard for lignite.

For more than 20 years the circular buffer storage featured under fig. 3 is handling reliably abrasive slag.

Feeding of the storage as per the cone shell method is being done by a slewing stacker with a capacity of 1,000 t/h while reclaiming is being achieved from the inner slope of the pile by a cantilever reclaimer. The scraper blades guide the slag to the central chute being the link between scraper reclaimer and outgoing conveyor.

If equipped with ring walls circular storages offer a maximum of storage capacity on a minimized space.
The shown machine (fig. 6) has a reclaiming capacity of 400 t/h, a rail gauge of 30 m and operates in copper concentrate.

The circular blending bed for ROM Coal shown in photo 5 below has a stacking capacity of 3,300 t/h and reclaims 2,300 t/h. The rail diameter is 120 m.

A conveyor feeds the coal through a chute on top of the central column to the slewing and luffing stacker for piling in layers using the chevcon method. The stacker operates 360° in an endless mode. The bridge type scraper reclaimers operate in a 360° endless mode.

This arrangement combines excellent homogenizing capability with easy continuous stockpile management without end cones.

Be it the optimal homogenizing of different qualities inside a pile or the ensuring of uniform grain size distribution for further processing - with TAKRAF’s bridge type scraper reclaimers optimal blending results can be achieved.

The material is being reclaimed from the front side of the pile where an almost full-pile facing harrow loosens material from all pile sections which then smoothly slides to the pile bottom into the scraper shovels.

The featured machine (fig. 7) is operating in a steel plant and handling abrasive iron ore. Its reclaiming capacity is 600 t/h and the rail gauge 35 m.

Twin harrow bridge reclaimers operating between two piles in longitudinal blending beds work in both directions. While the first pile is being stacked, the scraper reclaimer empties the second pile and vice versa. The harrows are driven hydraulically.

Fig. 5: High capacity circular blending bed for ROM coal
Fig. 6: Double harrow bridge reclaimer in copper refinery
Fig. 7: TAKRAF reclaimers with reliable performance in wear intensive applications