

Technical Bulletin No. 106

Motorized Pulleys & Bucket Wheel Machines



FAM Excavator (Marl Pit in South Carolina—USA)

FAM designed and built this 1,000 TPH excavator for an international cement producer in 2002. The 50' long boom conveyor and 100' long discharge conveyor each use a 31.5" diameter 100 HP Motorized Pulley to drive a 54" wide belt at 600 FPM. FAM has been using motorized pulleys as excavator belt drives for more than 30 years. Photo was taken during machine commissioning.

Technical Precaution: *When using a motorized pulley on an articulating conveyor that inclines up and down use a brake to prevent material from rolling "downhill" when conveyor stops. External brake shaft option is available from Rulmecca.*



German Reclaimer (Taconite Mine in Vitoria—Brazil)

Brazilian taconite processing plant operator replaced the 1963-vintage motorized pulleys on boom and discharge conveyor belts with new Rulmecca 31.5" diameter 100 HP Motorized Pulleys in 2001. Because of the abrasive nature of taconite ore dust, the operator used labyrinth seal option to maximize oil seal life.

Technical Precaution: *When using labyrinth seals periodically purge grease through seals to prevent grease-born grit from attacking rubber oil seals.*



Self-unloading Suction Dredge (Civil & Marine Ltd. Sand & Gravel Operations—North Sea)

Photo shows one of four suction dredges designed and built by Strachan & Henshaw in 1990. Each 2,700 TPH barge unloading system employs a traveling bucket wheel and five Motorized Pulley-driven belt conveyors. A 31.5" diameter 100 HP drives the largest belt (66" wide) at 620 FPM. Regreasable labyrinth seals protect all oil seals from abrasive salty operating conditions.

Technical Precaution: *When using labyrinth seals periodically purge grease through seals to prevent grease-born grit from attacking rubber oil seals.*



DEMAG Reclaimer (Taconite Ship Loading Terminal in Michigan—USA)

Demag designed and built this 5,000 TPH reclaimer in 1967. Terminal operator replaced original motorized pulleys with 40" diameter Rulmecca Motorized Pulleys in 1980. A 150 HP Motorized Pulley drives the 60' long 72" wide boom belt at 600 FPM. A 200 HP motorized pulley drives the 75' long 72" wide discharge conveyor at 600 FPM.

Technical Note: *Although Rulmecca supplies parts and service for 40" diameter motorized pulleys up to 200 HP, we no longer manufacture new units in that size. Maximum available size is 31.5" diameter at 180 HP.*



TAKRAF Excavator (Lignite Mine in Greece)

Photo shows boom tip of 3,000 TPH overburden excavator manufactured by TAKRAF in 1972. A 200' high superstructure supports this excavator's mammoth 400' long boom. Mine operator replaced 31.5" diameter 150 HP Motorized Pulleys on 72" wide excavator and transfer bridge conveyors in 2001, after nearly 30 years of continuous operation. Rulmeca FAA GmbH manufactured all replacement pulleys in Aschersleben, Germany at the same factory that built the original units.



KRUPP Excavator (Lignite Mine in Macedonia)

This lignite mine operator installed Rulmeca FAA 380 volt 3 phase electric-powered Motorized Pulleys when he converted his crawler-mounted excavator from hydraulic to electric conveyor belt drives in 1994. This Skopje, Macedonia continuous surface mine uses a 31.5" diameter 75 HP motorized pulley to move lignite at 1,000 TPH on the excavator's 48" boom belt at 620 fpm. Motorized Pulleys also drive excavator discharge and separate crawler-mounted transfer bridge conveyor belts.



FAM Excavator (Tagebau Alsen Open Sand Pit at Lagerdorf, Germany)

Photo shows congested 1,200 TPH boom-to-discharge conveyor transfer point on crawler-mounted excavator built in 1998. Note that drive pulley for each belt is located in this area (near the center of vertical rotation) to minimize the excavator's cantilevered load. A 31.5" diameter 100 HP Rulmeca Motorized Pulley, weighing 4,750 lbs, drives each 48" wide conveyor at 620 fpm.



- **Hermetically sealed enclosure increases system reliability**
- **Internal motor & gearbox minimizes conveyor drive size & weight**
- **Self-lubricating gearbox design decreases maintenance expense**
- **Enclosed drive and "dead shaft" improve operator safety**
- **Direct drive lowers electrical power cost**



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