



Technical Bulletin No. 103

Motorized Pulleys “Compact Drive”



Triple Cross Belts

Three 12.64” diameter 5.5 HP motorized pulleys simplify design, installation, and maintenance of cross belt drives in this mobile double screen plant in Spokane, Washington. Mobile screen plant designers frequently use motorized pulleys to drive cross belts because of the severe space restrictions in the drive nest.



Self-cleaning Magnetic Separator

A 12.64” diameter 4 HP motorized pulley drives canted belt surrounding electromagnet on portable crushing/screening system at this Louisiana C & D debris recycling facility. Also in service in Europe, this Austrian-designed rig also features motorized pulleys on screen feed, cross belts, and discharge belts. Note that standard carbon steel pulley shell is used on the tramp iron defleting belt since electromagnet’s flux field does not interfere with motor’s flux.



Double Triple Cross Belts

This Canadian mobile screen features four 12.64” diameter 5.5 HP and two 12.64” diameter 3 HP cross belt drives. Note the absence of separate motor and gearbox mounting platforms and expanded metal guarding—all eliminated through the use of motorized pulleys. Photo taken in Ontario limestone quarry in 1994.



Cantilevered Cross Belt

In service in North America and Europe, this highly mobile crawler-mounted crushing & screening plant features 100% electric motor powered conveyor belt drives, fed by on-board diesel generator. Centering the belt drive weight between the conveyor’s two support beams avoids an overhung load and permits a lighter less costly support structure. It also protects drive elements from damage due to trucks, front end loaders, and the like.



Circular Pipe Conveyor Gallery

Material transfer system incorporates totally enclosed 10' diameter pipe-type galleries on all conveyors at this German limestone export facility to minimize environmental impact. The 31.5" diameter 100 HP motorized pulleys enabled designers to accommodate the severe space restrictions imposed by the unusual gallery structure.



Glass Recycling Conveyor

The 12.64" diameter 5.5 HP motorized pulley used at this cullet conveyor transfer point minimizes space requirements. It also offers increased drive reliability (due to its hermetic seals) in the highly abrasive atmosphere. Photo was taken at the Raleigh, North Carolina glass recycling center in 1994.



Floating Pontoon Conveyors

This transfer point is typical of the six pontoon-mounted cascading transfer conveyors that connect floating clamshell dredge with the overland conveyor system at this German sand and gravel processing facility. As shown in the photo, a 15.75" diameter motorized pulley conserves space on the deck of the transfer pontoon. The hermetic seals also reduce system downtime in the harsh wet environment.



- 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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