



Case Study:

TWO IDENTICAL 'SWAN NECK' LOW PROFILE FEEDERS

Location:
Near Tom Price,
Western Australia

Operation Type:
Iron Ore

Equipment Solution:
Low Profile Feeder

Year:
2020

Scope of Project:

A new iron ore deposit in the Pilbara region of Western Australia had been identified as a key location for future mining developments.

With the new mine forecasted to produce 30 millions tonnes of iron ore per annum, two identical hybrid feeders are required at primary crusher discharge station to handle 200mm top size, crushed ore at 2,700tph.

Both feeders need to be engineered for the roughest conditions, including withstanding impact loads from falling rocks sitting under the primary crusher.

The Solution:

Transmin engineered, manufactured and assembled two identical Low Profile Feeders (LPF), with one 52m long and the other 56m long. The largest Transmin has built in their Malaga, Western Australian workshop.

Designed using Transmin-ConveyorPro ProEdge 1.6m wide conveyor belt and with Berco D4 chain, the LPFs consisted of a swan neck configuration (horizontal base/incline section/top horizontal section) that can transfer crushed ore up an incline of 10° to an elevated discharge point of 5.6m above the ground level.

350kW drive assemblies are mounted onto each of the LPF head shafts, 320mm diameter; which engage drive chain via the hub mounted sprockets. The Berco D4 sprockets are standard 5-segment sprockets. Segmented sprockets allow maintenance tasks to be performed without the need to remove the chain. This means increased uptime by reducing the maintenance downtime.

Practical requirements from our client as outlined in the scope of works included that lubrications points to be accessible from outside the guards, hydraulic take-up shall be provided on the tail shaft and automatic lubrication lines.

LPF offers less spillage, reducing in capital expenditure, no mis-tracking saving in operational downtime and the ability be started under any load condition, including fully loaded which was a requirement from the client.

Benefits of the LPF™

- ▶ Elimination of belt tracking issues
- ▶ Elevated discharge can be achieved by the introduction of a bend transition
- ▶ Space saving
- ▶ Elimination of belt slippage
- ▶ Minimal product spillage
- ▶ Conventional belt cleaners for ease of cleaning
- ▶ Proven industry standard components



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