LOW PROFILE FEEDER™

INNOVATIVE HYBRID FEEDER TECHNOLOGY FOR ALL BULK INTAKE OR IN-PROCESS APPLICATIONS

TRANSMiN | LPF LOW PROFILE FEEDER

1987

1987

THE YEAR TRANSMIN WAS FOUNDED

60+

COUNTRIES EQUIPMENT DEPLOYED IN

END-TO-END

FULL LIFE CYCLE SUPPORT FROM ENGINEERING TO SERVICE

TRUE INNOVATIVE THINKING

Transmin's Low Profile Feeder™ (LPF) is the original hybrid feeder delivering the advantages of both belt and apron feeders, plus additional benefits over conventional feeder technology that are unique to Transmin.

LPF capacities vary according to application, although rates of 10,000tph are possible. The LPF is built with trusted components, proven in the most arduous applications and with a low ongoing cost of ownership.

The LPF has the unique ability to incorporate a bend transition, which means a change of direction from horizontal to 25° inclined can be achieved without the requirement of a second machine; resulting in improved space utilisation, flexibility of plant layout and elimination of transfer points between conveyors, thereby reducing civil costs.

TYPICAL INDUSTRIES

- Mining and mineral processing
- Ports
- Cement and building products
- Recycling and waste processing
- Power generation
- Fertiliser and chemical

MATERIALS

- Various ores
- Iron ore, tailings and stockpiled ores
- Coal
- Fertilisers
- Metallic concentrates
- Filter cakes
- Wood chips
- Cement clinker
- Sewage sludge
- Refuse
- Biomass
- Construction wastes
- Aggregate

BENEFITS OF THE LPF

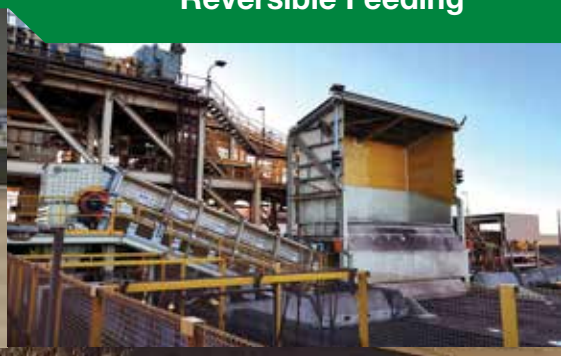
- Elimination of belt tracking issues
- Elevated discharge can be achieved by the introduction of a bend transition
- Reversing capability
- Space saving
- Elimination of belt slippage
- Minimal product spillage
- Simple modular sections for belt change out
- Conventional belt cleaners for ease of cleaning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

"In fairness, the machine was used above and beyond its initial design spec and it's never missed a beat. This thing is bullet proof."

STUART TAYLOR, Karara Project

A REVOLUTION IN FEEDER TECHNOLOGY

Reversible Feeding



Transmin is the market leader in hybrid feeder technology. The Low Profile Feeder has become the industry benchmark through a process of continued improvement and product development.

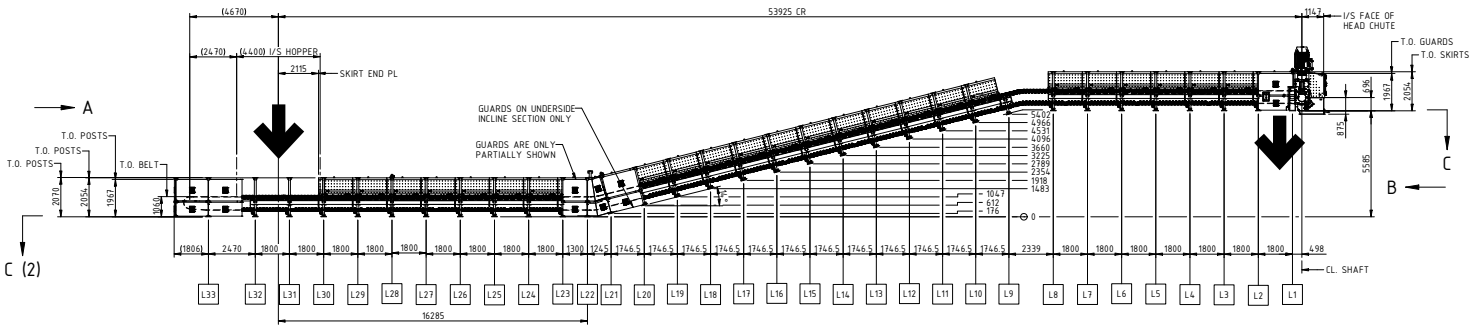
- Lengths up to 56m
- Incline angles up to 25°
- Belt widths up to 4.0m
- Weighing of material in transit
- One sided belt fastening
- Reversing capability for discharge at both ends
- Numerous installations around the world

LPF™
LOW PROFILE FEEDER

Less Spillage | **Mistracking Eliminated** | **Belt Slippage Eliminated** | **Lowest Possible Profile**



FEATURES	TRANSMIN LPF™	CONVENTIONAL BELT FEEDER	APRON FEEDER
Space occupied within the plant	✓ Minimal - e.g. 3.0m wide belt, 4000tph iron ore = 1.0m vertical height	✗ Can be substantial when high belt tensions present due to large head pulley diameters	✗ Can be substantial, especially when spillage conveyors are required
Belt tracking	✓ No adjustments necessary	✗ Belts can mis-track and require adjustment	✓ No adjustments necessary
Belt slippage	✓ Eliminated	✗ Belt can slip	✓ N/A - no slip
Product spillage	✓ Minimal	✓ Minimal	✗ Pan leakage
Requirement for spillage conveyors	✓ Not required	✓ Not required	✗ Frequently required
Ease of cleaning	✓ Conventional belt cleaners	✓ Full width conventional belt cleaners	✗ Can be difficult to clean effectively
Belt change out	✓ Simple modular sections	✗ Belt splicing station required	✓ N/A
Elevated discharge	✓ Can change direction by the introduction of a bend	✗ Limited to horizontal or inclined only	✗ Limited to horizontal or inclined only
Suitability for ROM Dump Applications	✓ Consult Transmin	✗ Generally not suitable	✓ Proven for large run of mine dump applications



Iron Ore 2,700tph x 55m long

FEATURES

Flow Control Gates
Fixed or adjustable

ProEdge
Hot vulcanised belt edge

KwiksertPro
One sided belt fastening

Elevated discharge capability

Wear liners to suit material being handled

Conventional belt cleaners are used

Various drive styles

Belt protection bars for sharp or lumpy materials

In process weighing

Various bearing lubrication options

Cross slats support the belt

Optional weather enclosure

FULL RANGE FROM LIGHT TO HEAVY DUTY

Round Link Chain - RL Series

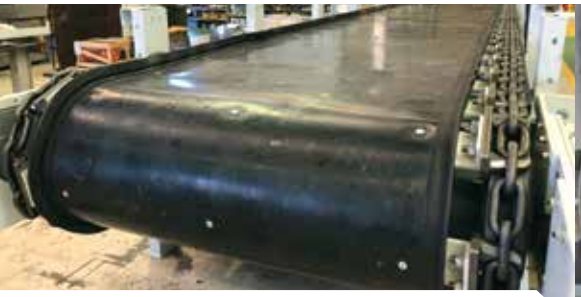
- Light to medium duties
- Standard round link chain
- Segmented or individual toothed sprockets
- No pins, bushes or bearings
- Belt widths up to 2.0m
- Agricultural, waste and general industrial

Roller Chain - RC Series

- Medium duties
- Standard RC6 size
- Various pin, bush and bearing options
- Belt widths up to 4.0m
- Medium to heavy industrial, cement and mining

Track Chain - D Series

- Heavy duty applications
- Standard D4 size
- D6 and D8 models available
- SALT chain, sealed for life
- Belt widths up to 4.0m
- Mining and heavy industrial

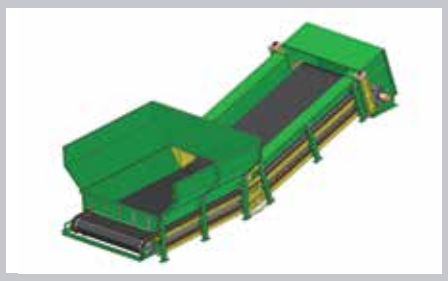


CAPACITY CHART		
STANDARD BELT WIDTH (mm)	EFFECTIVE SKIRTED WIDTH (mm)	NOMINAL CAPACITY MAXIMUM (m^3/hr)
800	600	350
1200	1000	1000
1600	1400	1500
2000	1800	2000
2600	2400	3600
3200	3000	4800
4000	3800	8200

**For confirmation on specific applications please consult Transmin direct.*

APPLICATIONS

METALLIC FILTER CAKE 50tph



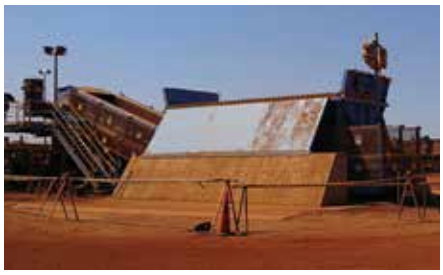
Rear Tipping Truck Receival

Surface mounted for rear tipping trucks. Combined receival, storage and feeding. With or without weather enclosure. Eliminates the need for major excavations.

Front End Loader Feed

Mounted on a simple pad, ideal for material recovery via wheel loader. Can be skid mounted for relocation. Caters for the largest buckets such as the WA1200.

IRON ORE TAILINGS 1500tph

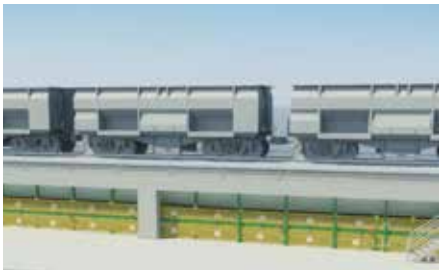


IRON ORE 2500tph

Side-Tip Truck Receival

The side-tip truck application is perfectly suited for use by road-trains, making receival incredibly efficient. Multiple hoppers can be employed on a single machine. Photo shows one of twelve units installed at a multi-user facility in Western Australia.

VARIOUS ORES 1000tph



IRON ORE 2500tph

Train Loading & Unloading

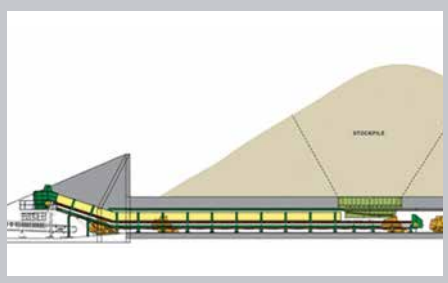
With it's ultra-low profile, the LPF serves as a viable alternative to conventional feeders beneath rail lines and car dumpers at receival facilities in the port or processing plant.

Elevated discharge means wagons can be loaded directly from each side.

Stockpile Reclaim

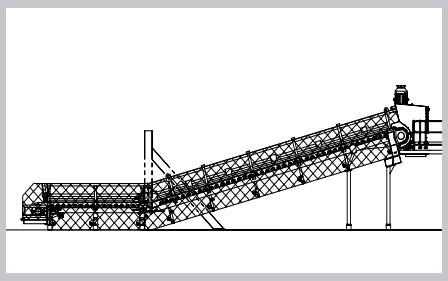
Ideal for use in the restricted space beneath stockpile, minimising civil costs. The LPF acts as a feeder and transfer conveyor in one. Stockpile tunnel reclaimers up to 42m long have been installed.

NICKEL REJECTS 1900tph



HARD ROCK 2000tph

COAL 3000tph



Dozer Trap

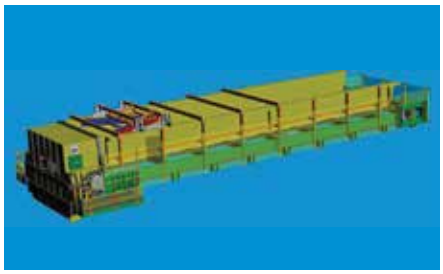
Similar to stockpile reclaim applications, the LPF can also be configured as a dozer trap for simple stockpile management and easily relocated.

Ore Bins & Screen Feeding

With a number of widths and load capacities available, the LPF is perfectly suited to sit beneath high capacity ore bins and silos.

Models up to 4.0m belt width are available to efficiently feed the widest screens used today.

SCREEN FEEDING IRON ORE 4000tph



RED MUD TAILINGS

Filter Press Discharge

Due to its low profile, the LPF can sit directly beneath filter presses to receive filter cakes and feed toward downstream plant equipment or vehicle receival. The ability to have a horizontal hopper of a length to suit the application followed by an inclined section means the hopper capacity can be the maximised for best possible efficiency. The LPF can also be reversed for emergency dump of material.

At the Crushing Station

With a number of widths and load capacities available, the LPF is perfectly suited to sit either above or below sizers and crushers. Optional features are available for use with very abrasive lumpy or sharp materials.

PRIMARY CRUSHED ORE 1500tph

GOLD ORE 2000tph

Ejector Truck 'NEW'

A more efficient alternative to conventional ejector trays, the LPF was configured to convert ADT trays to a 'live bottom' design, eliminating the need to tip the tray for discharging. Also ideal for laying ballast or road base, whilst the truck moves forward.

Case Study:

IMPROVED STOCKPILE EXTRACTION WITH MINIMAL DOWNTIME AND CAPITAL WORKS COSTS

Location:
Cadia Valley,
New South Wales

Operation Type:
Open Cut Gold Mine

Issue on site:

Under the existing setup, the site was struggling to achieve sufficient extraction from the stockpile. The existing extraction method utilised conventional feeders submerged in conventional pre-cast concrete tunnels. Installing a secondary tunnel with conventional belt or apron feeder extraction and associated chutes onto a collector conveyor belt would prove expensive, not least due to the height requirement (5m plus), and would take the plant out of production for excessively long periods. One alternative would be to use a front end loader to supplement the extraction, but this too would prove both time and labour intensive.

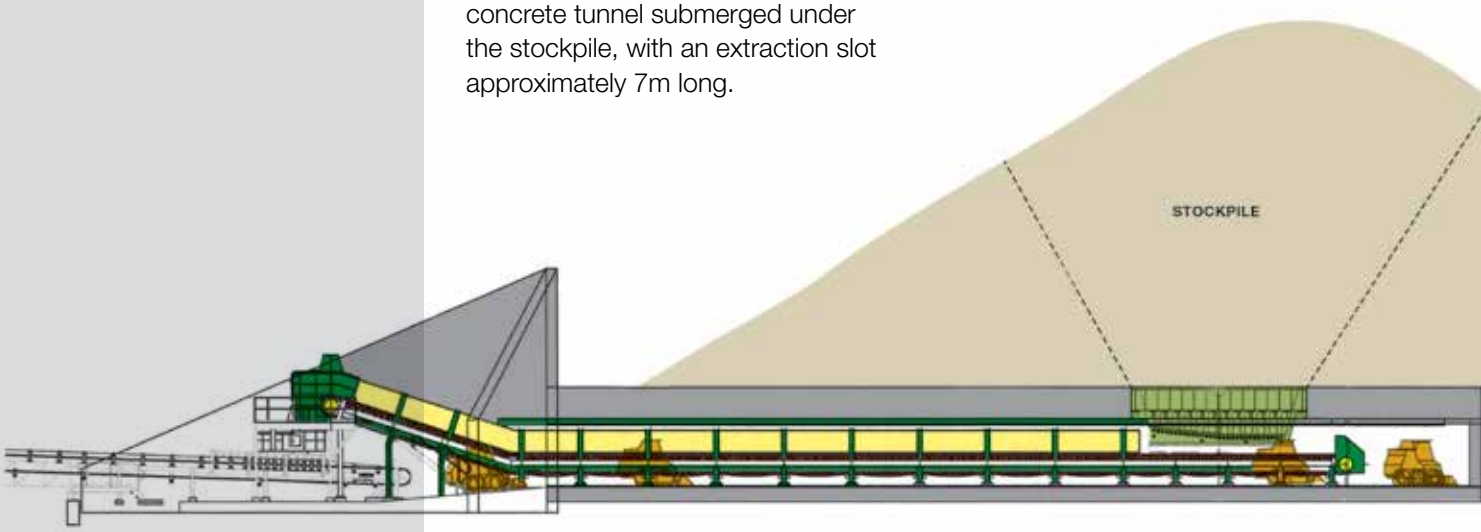
The Solution:

Transmin's solution, was to utilise the Low Profile Feeder (LPF) with its low 1<m installed height advantage, and ability to incline within a single machine. The LPF would be located in an additional precast concrete tunnel submerged under the stockpile, with an extraction slot approximately 7m long.

The LPF would act as both feeder and conveyor - extracting and carrying ore from the stockpile simultaneously on the same machine for approximately 40m towards an inclined section, where it would be deposited directly onto a conventional conveyor.

Thanks to the LPF's ultra-low profile, the height requirement of the pre-cast tunnel sections could be brought down, and the need for additional chute-work eliminated thanks to the built-in incline section. The end result would be a substantial reduction in civil-works.

This in turn meant installation could be completed with minimum disruption to stockpile operations. A culvert would be dug-out using excavators and the new pre-cast concrete tunnels dropped into place, allowing the stockpile to be quickly reformed and put back into full service.



Case Study:

LOW PROFILE FEEDER (LPF)™ ‘RECLAIM HOPPER’ FOR IRON ORE TAILINGS

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.

AUSTRALIA
Local Call: 1300 127 091
International Call: +61 (0) 8 9270 8555
A: 33-37 Denninup Way Malaga, Perth, Western Australia, 6090

E: info@transmin.com.au

www.transmin.com.au