

WEST RIVER CONVEYORS | BEHIND THE STEEL SERIES #4

A **Transfer Chute** is a sloped structure that directs material between conveyors and from one elevation or direction to another. They are used in high-throughput industries like underground mining, aggregates, and bulk material processing. Primary functions include:

- Control of material trajectory by minimizing bounce, reducing impact, and prevent belt mistracking
- Guiding material flow by transferring it in a smooth and controlled stream
- Keeping an area clean and safe by minimizing dust and spillage
- Preventing the degradation of system, components, and material

Chutes are a critical link in any conveyor system. Used primarily at the transfer points, they guide material from one conveyor belt to another efficiently and safely. Transfer chute design can range from a simple container to a highly complex system with multiple elevations and various angles.

MODULAR CHUTE PANELS

Modular chute panels are replaceable sections of a chute wall designed to be swapped out quickly to keep your transfer point running smoothly.

- Can be installed in tight areas and replaced individually as needed
- Are lined with any combination of impact/wear resistant materials such as ceramic, CCO plate, AR400/500 plate, and UHMW
- Panels eliminate the need for torch cutting and heavy onsite fabrication

INSPECTION DOORS

Strategically located inspection doors allow easy access to key areas for:

- Visual inspection of bulk material flow
- Early identification of problems like buildup, wear, or liner failure
- Management of internal chute performance

ENCLOSED SKIRTING SYSTEM

A properly designed enclosed skirting system guides material to the center of the belt before it exits the loading zone.

- Seals sides of the belt at the loading zone to reduce dust
- Keeps material contained as it settles onto the belt
- Reduces environmental and safety issues

DISCHARGE CHUTE

The discharge chute opening is where bulk material exits a chute. It controls proper loading onto the receiving conveyor and determines flow efficiency between systems. It's also responsible for:

- Capturing the trajectory of the material
- Redirecting and shaping material flow
- Making sure the material is centered and aligned on the receiving belt

IMPACT ZONE

Designed to adequately support the belt as material is loaded onto the conveyor. It helps absorb impact, minimizes belt wear, and maintains an effective seal at the loading point and throughout the load zone.

The impact zone may feature impact bars, which provide continuous belt support while maintaining a tight seal, and impact idlers, provided they are spaced closely enough to prevent belt sag and gaps that can compromise sealing.

CONVEYOR IDLERS

Idler performance at a transfer point is critical — choice can vary depending upon load, usage, and location in any system.

- Impact idlers support the bed during loading
- Form the belt into a trough shape to help contain material
- Stabilize the belt as loads shift from "falling" to "conveying"

SKIRT RUBBER CLAMPS

Skirt rubber clamps maintain consistent sealing pressure to prevent gaps where material and dust can escape.

- Clamps are easy to re-tighten or lower the rubber as it wears
- Help material stay on the belt and dust to stay inside the chute
- Reduce cleanup and extend the life of the skirting system



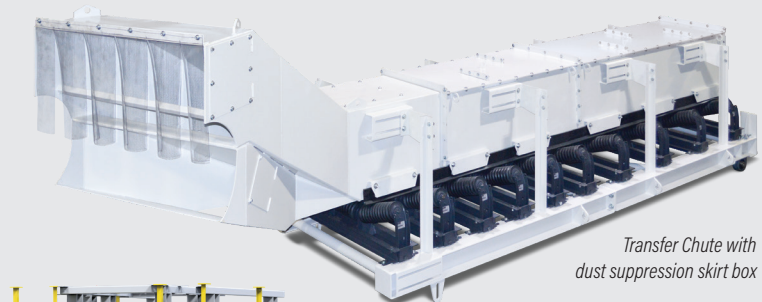
Discharge Transfer Chute

Transfer Chute Design: Benefits vs. Problems

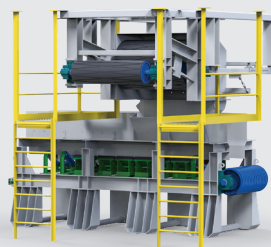
DESIGN SUMMARY	BENEFITS OF PROPER DESIGN	PROBLEMS WITH POOR DESIGN
A proper conveyor transfer chute prevents materials from rolling and bouncing off the belt, mitigates belt mistracking, reduces excessive wear on the receiving belt, and minimizes spillage and dust safety hazard issues. A transfer chute is not just another conveyor attachment, but a performance-critical component that protects your equipment while ensuring system uptime and smooth mining operations.	Smooth material flow with minimal turbulence	Material build-up or blockages
	Aligned material trajectory reduces belt wear	Uneven loading and belt mistracking
	Controlled velocity prevents bounce or rollback	Material bouncing off the receiving belt
	Reduced impact on belts and components	Excessive wear on belt, pulleys, and idlers
	Minimized dust emissions and improved air quality	High dust levels and environmental health hazards
	Contained spillage improves safety and housekeeping	Material spills onto walkways and under belts
	Extended equipment life and reduced maintenance costs	Frequent downtime and high maintenance
	Easier inspection and liner replacement with access doors	Difficult maintenance access leads to neglected issues
	Consistent feed rate to downstream equipment	Inconsistent or erratic flow to the next process
	Lower total cost of ownership over system lifespan	High operating costs due to wear, downtime, and clean-up

TRANSFER CHUTE BENEFITS:

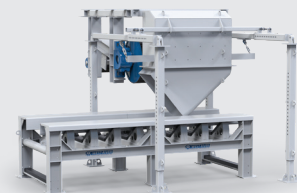
- Improves material flow and conveyor efficiency at the transfer point
- Enhances safety and cleanliness in the transfer area by lowering dust
- Prevents belt misalignment and damage to pulley and other conveyor components
- Reduces downtime and maintenance costs
- Custom-designed to fit any conveyor configuration
- Reduces spillage and dust by keeping material flow confined
- Maintains consistent load distribution on receiving conveyor line
- Reduces blockages and build-ups of material



Transfer Chute with dust suppression skirt box



Remote 90° Transfer Chute



Discharge Chute with loading section assembly