AERODRY CONNECT

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Plastics Automation

Smart Conveying – The Invisible Backbone of Efficient Material Handling

Dear Partners, Clients & Team,

Welcome to the fourth edition of Aerodry CONNECT!
In our previous issues, we explored how crystallisers, gravimetric batch blenders and dehumidifiers shape polymer processing quality. This time, we move to the next essential step - **conveying** - the system that keeps every other process alive.

Smart conveying systems may work quietly in the background, but they make all the difference on your shop-floor. From automated vacuum loaders to centralised conveying networks, today's solutions don't just transfer material – they boost productivity, eliminate contamination and reduce human error.

In this edition, we explore how Aerodry's conveying solutions keep your process clean, continuous and connected.

Let's keep things moving - efficiently.
- Team Aerodry

Seamless, contamination-free, and efficient - discover how Aerodry's smart conveying systems keep every process in motion.

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Let's Talk Conveying

The Silent Workhorse: Why Smart Conveying Matters More Than Ever

Material conveying might seem simple, but in a world of precision polymers, it's a make-or-break operation. Every missed pellet, every delay, every contamination issue can ripple through production - affecting cost, quality and uptime

DID YOU KNOW?
Plants that integrated conveying automation report an average 18-25% reduction in downtime.

Key Customer Priorities in 2025

- **Material Traceability:** With recycled and bio-based materials gaining ground, processors need clean change-overs and zero contamination.
- **Workforce Efficiency:** Skilled labour shortages push plants toward low-touch, high-reliability systems.
- **Sustainability:** Automated conveying reduces spillage, waste and dust, improving material yield and safety.

AVL Series – Smart Hopper Loaders for Large-Scale Material Conveying

Quality. Efficiency. Scalability. - Engineered for tough industrial environments.

The AVL Series of automatic hopper loaders, a family of conveying solutions built specifically to handle bulk plastic materials from the receipt area, through to dryers and processing machines. With the tough shop-floor in mind, the AVL Series is designed to streamline your operations, reduce waste and optimise manpower and material usage

Why the AVL Series matters:

- Robust construction for industrial use
- Flexible model choices for the plant's needs
- Optimises productivity & reduces wastage
- Ready for integration into centralised systems

Automation is Redefining Material Handling

✅ By 2026, over 70% of processors in Asia are expected to adopt centralised conveying systems.

✅ Plants that integrated conveying automation report an average 18-25% reduction in downtime.

✅ Energy-optimised conveying systems can save up to 20% power compared to conventional setups.

Challenges in Conventional Conveying

- Material mix-ups: Wrong resin delivered to wrong machine → entire batch may fail
- Cross-contamination: Even small traces of one material or colour in another can lead to rejection
- Clogging & spillage: Manual transfer or poorly sized lines cause material jams and dust issues
- Downtime: Waiting for material to be manually loaded leads to idle machines and lost hours
- Operator-dependency: Manual systems need constant attention, increasing labour costs and variability

Even 2% material spillage a day can amount to over 1.5 tonnes of loss annually for a mid-sized plant - translating to ₹3–5 lakhs of wastage every year. Smart conveying virtually eliminates this.

Excellence Defined Uncompromising Quality, Every Time

AVL Series Model Line up & Key Specifications

Here is a breakdown of the main models in the AVL series, their application focus and key features/data

AVL Mono

- A compact, reliable loader engineered for single-material transfer from bin to dryer or processing machine.
- Features automatic level control for consistent feed and reliable operation.

AVL Duo

- Double your flexibility! Designed for dual-line material transfer to separate or shared machines.
- Includes microprocessor-based control, dual filtration, and audio-visual empty-bin alarms for dependable performance.

AVL Tria

- Perfect for triple-line processes - supports three simultaneous material transfers.
- Retains AVL's rugged design with automated load and level control, optimizing multi-stream processing.

AVL Quatra

- Handle four or more material lines effortlessly.
- Ideal for high-throughput or multi-machine environments requiring integrated material handling.

AVL 1S-6S

- One system, endless possibilities. Flexible multi-station configuration handling 1-6 material lines (50-4,000 kg/h).
- Fully automatic operation with microprocessor control, dual filtration, and audio-visual alarms - well-suited for centralized conveying networks.

Central Conveying System – Vacuum

Bulk material transfer via vacuum suction, under negative pressure.

Features:

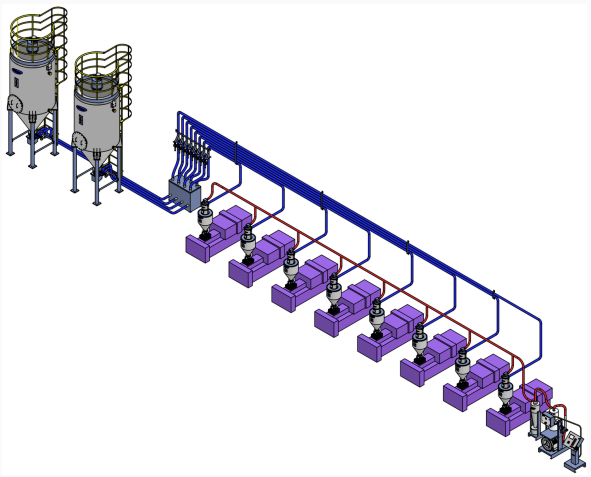
- Suitable for low to medium throughput (50–4,000 kg/h) and short distances (~100 meters).
- Vacuum pump pulls material to Day Bins or Collection Bins.
- Multiple feed points can connect to a single vacuum line, ideal for centralized systems.
- Inbuilt filtration prevents dust escape.
- Effective for collecting spillage or dust in closed-loop systems

Pressure Conveying System

Transfers Material under positive pressure.

Features:

- Roots blower pushes air through a rotary valve, conveying material via rigid pipelines.
- Ideal for long-distance (~1,000 meters), high-capacity, or multi-destination use.
- Suitable for large volumes and high-conveying capacities.
- One feed source can deliver to multiple destinations.
- High pressure reduces material degradation and improves long-distance efficiency.



A single mis-routed batch due to manual conveying can cost a processor up to ₹50,000 in wasted material and rework.

Powder Conveying System

- Clean, safe, and efficient powder transport.
- Features:
- Transports powders (e.g., talc, sticky materials) using pneumatic or mechanical systems.
- Prevents dust, minimizes contamination, and integrates with automation.
- Protects product integrity and ensures clean operation.
- Ideal for short-distance light powders (vacuum) or dense-phase long-distance (high pressure).
- Easy to clean with minimal cross-contamination.

ROI Focus

Every Pellet Counts

- Inefficient conveying doesn't just slow production - it quietly inflates costs.
- With Aerodry Smart Conveying Systems, you gain:
- 🚫 Zero Contamination: Dedicated lines and purging ensure clean transitions between materials.
- ⚡ Energy Efficiency: Adaptive vacuum control optimises suction as per demand.
- 👮 Man-power Savings: One operator can oversee multiple material routes.
- 🔁 Continuous Operation: No pauses for manual refill or reloading.

💡 A typical 8-machine plant can recover over 1,200 production hours annually through centralised conveying automation.

CUSTOMER PERSPECTIVE

"We underestimated how much time was lost to manual loading until we automated conveying. Now, our dryers and loaders talk to each other – no waiting, no errors.
Productivity improved by nearly 15%."

- Process Head, Automotive Components Manufacturer, Pune

Aerodry Smart Conveying Advantages

✅ Closed-loop, contamination-free material transfer

✅ Energy-efficient vacuum technology

✅ Intelligent control with auto-switch-over between hoppers

✅ Seamless integration with dryers, blenders and silos

✅ Modular setups - scalable for future expansion

Loaders Maintenance Tips

Proper care extends loader life and ensures consistent conveying.

✓ Routine Checklist

- Inspect and clean filters weekly
- Check for leaks in hoses and connections
- Verify sensor functionality
- Confirm discharge valve operation
- Empty loader body completely before material changes

✓ Preventative Maintenance Intervals

- Monthly: Inspect all hoses, clamps, and gaskets
- Quarterly: Check motor brushes (for motorized loaders)
- Yearly: Replace worn gaskets, seals, or filters

Aerodry Shines at K Show 2025

What an extraordinary week it was in Düsseldorf! Aerodry had an incredible presence at K - The World's No.1 Trade Fair for Plastics and Rubber, connecting with global innovators and showcasing what's next in smart manufacturing

Event Highlights

- Showcased our star product
- Engaged in powerful discussions.
- Built impactful new partnerships across the global plastics ecosystem

A sincere thank-you to everyone who visited us at Hall 10, Stand H52.

Gearing up for Plast India 2026 !

From **5-10 February 2026**, we'll be bringing the power of smart process solutions to the industry's biggest stage.

Get ready for a closer look at the performance, reliability, and innovation that define Aerodry. Visit us at **Hall 5G, Stand B2**

From Aerodry Product Desk

At Aerodry, we recognise that material handling must work reliably in tough industrial conditions. That's why our conveying solutions - from stand-alone AVL Mono loaders to fully centralised networks - are built to move bulk plastic materials efficiently, reduce waste (material, time, manpower), and support your processing machines without interruption.

Whether you're running a small single-machine line or a large multi-machine plant, the AVL Series Hopper Loaders (Mono → Duo → Tria → Quatra → 1S-6S) let you scale smartly and maintain control.

Let's Talk Conveying

Looking to optimise or automate your material handling system? Our experts can help design custom conveying layouts tailored to your throughput, resin types and layout constraints.

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