



**Bulk Materials Handling & Storage**

- ❖ Conveying
- ❖ Elevating
- ❖ Feeding
- ❖ Weighing
- ❖ Mobile Hoppers
- ❖ Silo Discharge
- ❖ Intake & Transfer
- ❖ Storage Solutions

- weighing
- feeding
- conveying
- filtration
- automation



# SandPiper Train & Tram Sand Filling Solutions

**Introduction**

Schenck Process is a leading supplier of pneumatic conveying, pneumatic injection, dust filtration & valve solutions for a wide range of process industries. It has also adapted and applied Clyde Process technology, expertise & knowledge to power pioneering solutions globally

**Redler & Clyde Process**



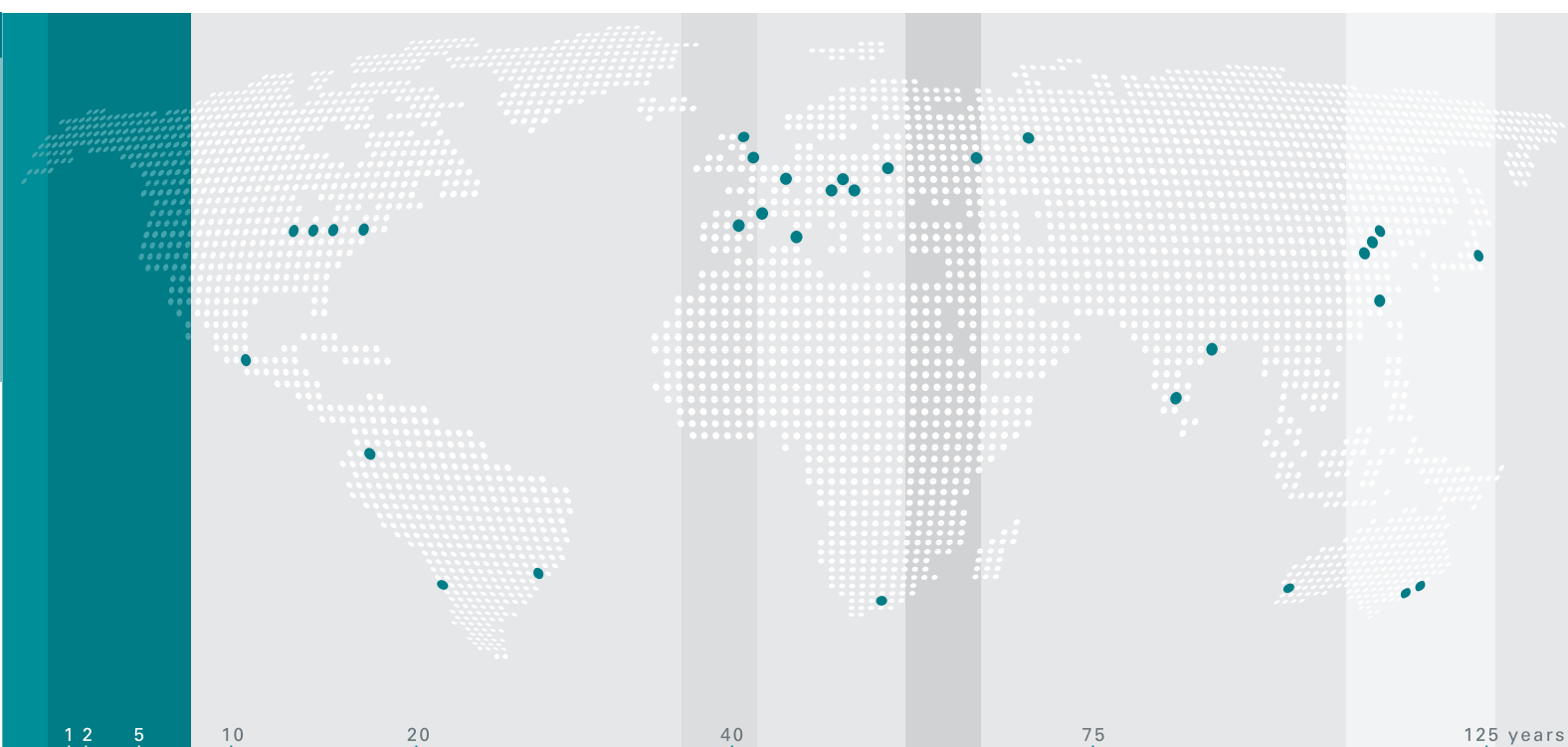
**Dense Phase Conveying**

- ❖ Enclosed conveying system reducing dust emission
- ❖ Long life robust design
- ❖ Worldwide installation history
- ❖ Long distance and high tonnage rates
- ❖ ATEX compliant designs



**Dilute Phase Conveying**

- ❖ Modular design with tool free maintenance procedures
- ❖ Minimal dust emission
- ❖ Hygienic applications
- ❖ Customised solutions available
- ❖ ATEX compliant systems



**Our philosophy is based on...**

- ❖ Continuous product development
- ❖ Best practice approach to applications
- ❖ Raising industry standards

**Capabilities**

- ❖ Single Machine
- ❖ Multiple Machines
- ❖ System Solutions
- ❖ Installation & Commissioning
- ❖ Plant Layout & Integration
- ❖ Engineering & Contract Management
- ❖ Professional Customer Service Approach

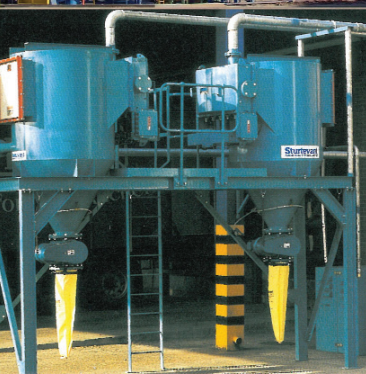
**Industries**

- ❖ Power, Coal, Steel, Cement, Mineral, Chemical, Grain Processing, Brewing/Malting, Flour/Feed, Food, Particle Board, Recycling, Railway, Ports, Waste Water Treatment



**Dust Filtration**

- ❖ Modular design with tool free maintenance procedures
- ❖ Energy efficient designs
- ❖ Long life robust designs
- ❖ ATEX compliant units
- ❖ Safe / good access for maintenance



**Vacuum Cleaning**

- ❖ Fixed and mobile cleaning systems
- ❖ Safe access for maintenance
- ❖ Long life robust designs
- ❖ Hazardous area solutions
- ❖ Single or multiple users

Proven Technology, Improving Your Operational Efficiency

The Schenck Process Group develops, manufactures & markets a full range of solutions, products & turnkey systems on the basis of combining process engineering expertise, reliable components & field-proven technology.

**Brands of the Schenck Process Group are:**

- Clyde Process
- Fairfield
- Mac Process
- Pentec
- Redler
- Schenck Accurate
- Screenex
- Stock

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we make processes work

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### Sand Handling Systems

Clyde Process has developed both fixed and mobile Sand Handling Systems in response to the commonly recognised problems associated with sand box filling within the rail & tram industry including manual handling bags of sand & material spillage.

#### The fixed sand filling system

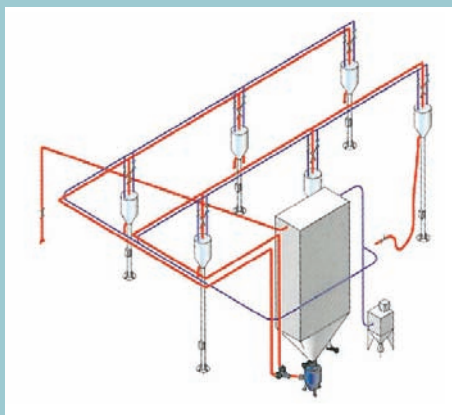
- ❖ Operated by a petrol pump style nozzle used for depot maintenance schemes.
- ❖ Eliminates the need for manual lifting & complies with health & safety requirements.

#### The mobile "SandPiper" Unit

- ❖ Available as a motorised driver "sit-on" type or motorised pedestrian type
- ❖ Ideal for low usage rail & tram depots.
- ❖ An efficient & user-friendly solution.

#### Both Systems Advantages:

- ❖ Eliminates the need for manual lifting
- ❖ No spillage or waste
- ❖ Keeps sand in a dust & moisture free state
- ❖ Promotes a cleaner environment
- ❖ Complies with health & safety requirements



### Road & Rail

Rail & tram operators, irrespective of their location in the world are the subject of ever increasing commercial pressures for profitability, vehicle availability & reductions in operating costs, whilst ensuring complete passenger safety & satisfying the demands from regulators.

As operators strive to create services that meet these requirements it is becoming evident that efficient maintenance processes & procedures are essential to meet these needs & ensure that disruptions are minimised.

The maintenance of vehicles often involves replenishing on-board sand boxes, which are used to improve vehicle traction in slippery or wet weather conditions & can act as an aid in braking from high speeds.

However, sand handling is a commonly recognised problem within the rail & tram industry due to the time absorbed in manually handling bags of sand to fill empty sand boxes, coupled with spillages and material waste that can impact on environmental & health & safety regulations.



- ❖ Each dispensing point transfers sand into the sand box using a petrol pump style nozzle. The nozzle is placed into the sand box inlet, & the sand flow control valve opened.
- ❖ Sand is transferred under pressure with dust emission eliminated by a simple exhaust system.
- ❖ When the sand box is full the action of the sand covering the nozzle outlet automatically stops the sand flow.
- ❖ The sand flow control valve is closed before the nozzle is withdrawn & stored in the holster.



#### The SandPiper Mobile Sanding Unit

- ❖ SandPiper mobile sanding units come in two variations.
- ❖ There is the motorised driver "sit-on" type unit & the motorised pedestrian type where the operator walks in front of the vehicle steering the unit.
- ❖ Both units are powered by an electric motor & battery pack which are supplied as part of the vehicle & are an element of the standard features package.
- ❖ One of the SandPiper's many safety features includes a regenerative braking system to provide safe & effective braking on inclines of 1:10 & emergency braking.
- ❖ Designed to carry 300kg or 500kg.
- ❖ The "sit-on" type is designated with a "V" suffix & the pedestrian type with a "P" suffix.

#### The specification of the unit is as follows:

- ❖ Sand Filling method : 25kg sacks, IBC or Bulk Storage Silo (not included).
- ❖ Sand Storage Vessel : 0.20m<sup>3</sup> (300kg of sand) and 0.33m<sup>3</sup> (500kg of sand).
- ❖ Throughput : 10-15kg/min.
- ❖ Compressor : 24V DC 2 litres x 1.0 Kw 6Barg (including 11 litres air receiver).
- ❖ Vent Filter : 24V DC 0.3Kw.
- ❖ Sand Nozzle : 4 m of 25mm dia of heavy Duty flexible hose with non-spill cut off nozzle.
- ❖ Driver Panel : Driver control panel for Operation & status indication.

The SandPiper unit is designed to provide a mobile, flexible, non spill, dust free system and is simple to operate, reducing manual handling and material spillage associated with train sand box filling.

#### The SandPiper Mobile Sanding Unit

##### Pedestrian Trailer

- ❖ 4 Wheel electrically powered pedestrian vehicle 300kg & 500kg
- ❖ Width 806mm
- ❖ Length 2360mm
- ❖ Ground clearance 164mm
- ❖ 24v 12 Cells 320A/Hr
- ❖ 4.00 x 8 Solid wheels
- ❖ 1.5Kw Motor and brake
- ❖ Turning circle 4.5m

##### Vehicle / 4 Wheeler

- ❖ 4 Wheel electrically powered ride on vehicle 300kg & 500kg
- ❖ Width 1060mm
- ❖ Length 2700mm approx
- ❖ Ground clearance 164mm
- ❖ 48v 24 cells 420A/Hr
- ❖ 4.00 x 8 Tyre filled
- ❖ 3.8Kw Motor and brake
- ❖ Semi suspension seat & lap belt
- ❖ To rail spec for lights/buzzers/beacons
- ❖ Lights - LED
- ❖ Headlight - Halogen dip & main light