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Materials and specifications are subject to change without manufacturer's obligation.

Air Floating Belt Conveyor

# FLOW DYNAMICS CONVEYOR

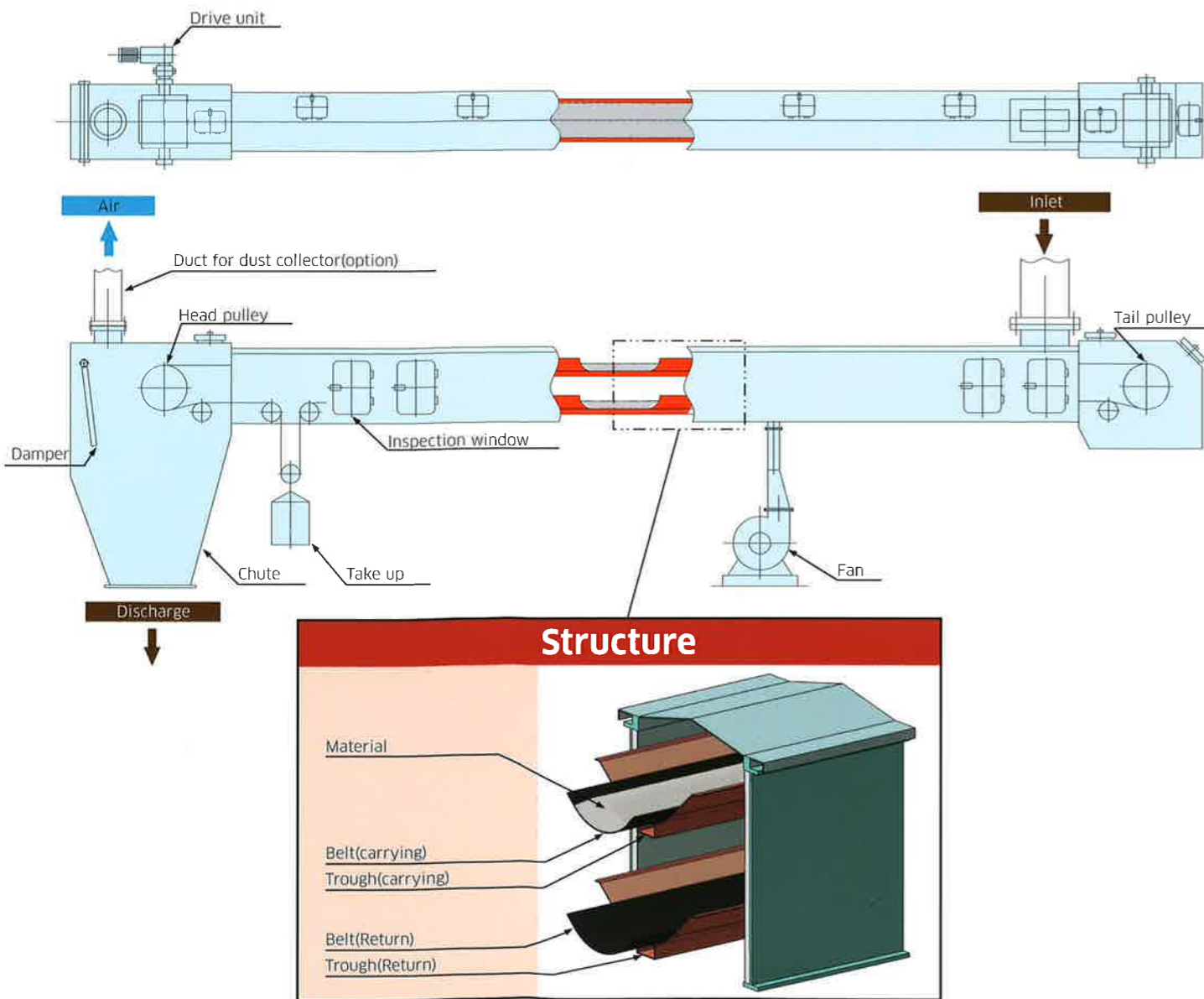
*A SUSTAINABLE APPROACH*

# FLOW DYNAMICS CONVEYOR

## Structure

The drawings below show the configuration and sectional views of the Flow Dynamics Conveyor (FDC): a roller is installed in the head and tail sections, same as a conventional conveyor, however in the intermediate section instead of a roller, the belt and material are mounted on a trough, which is formed by a steel plate.

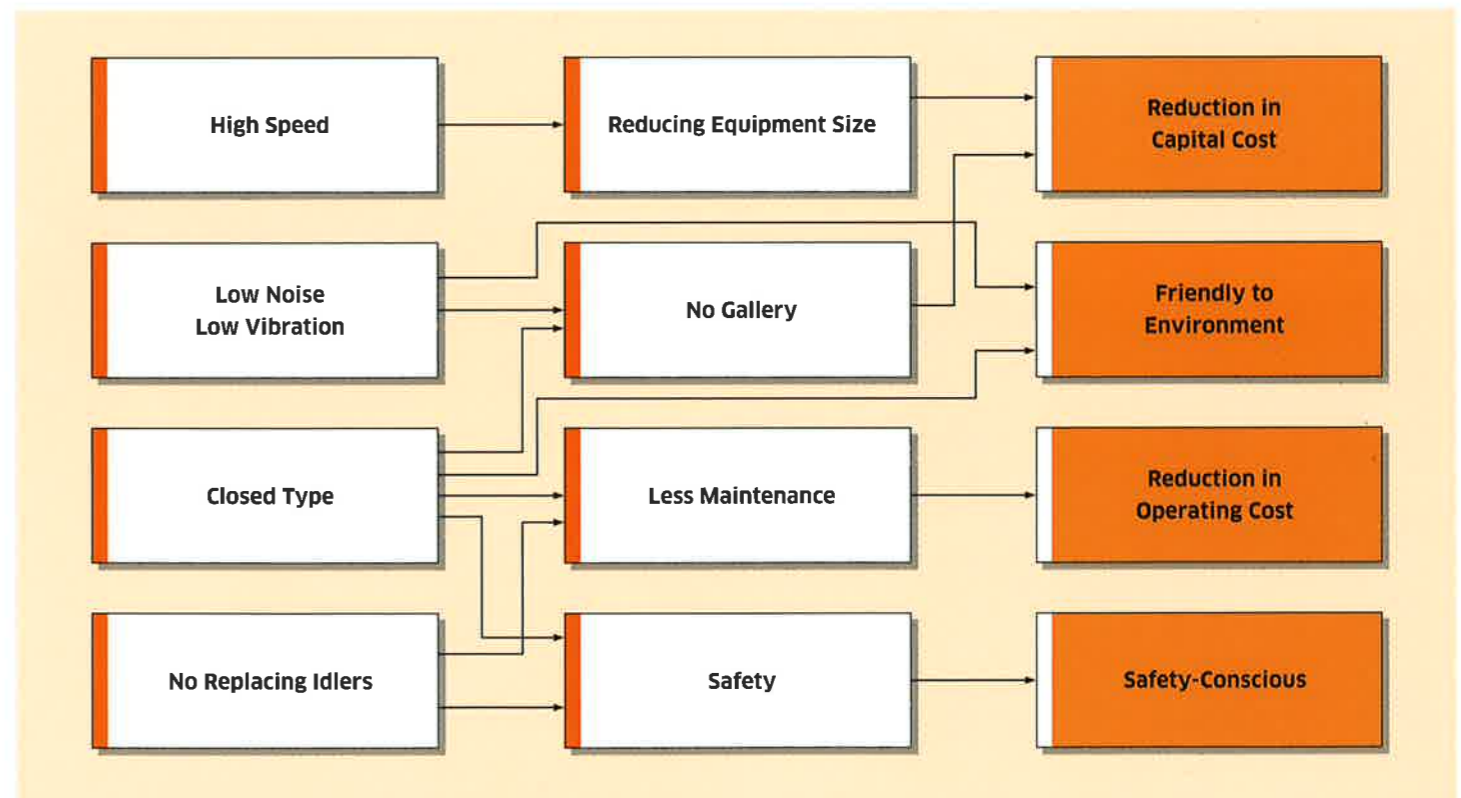
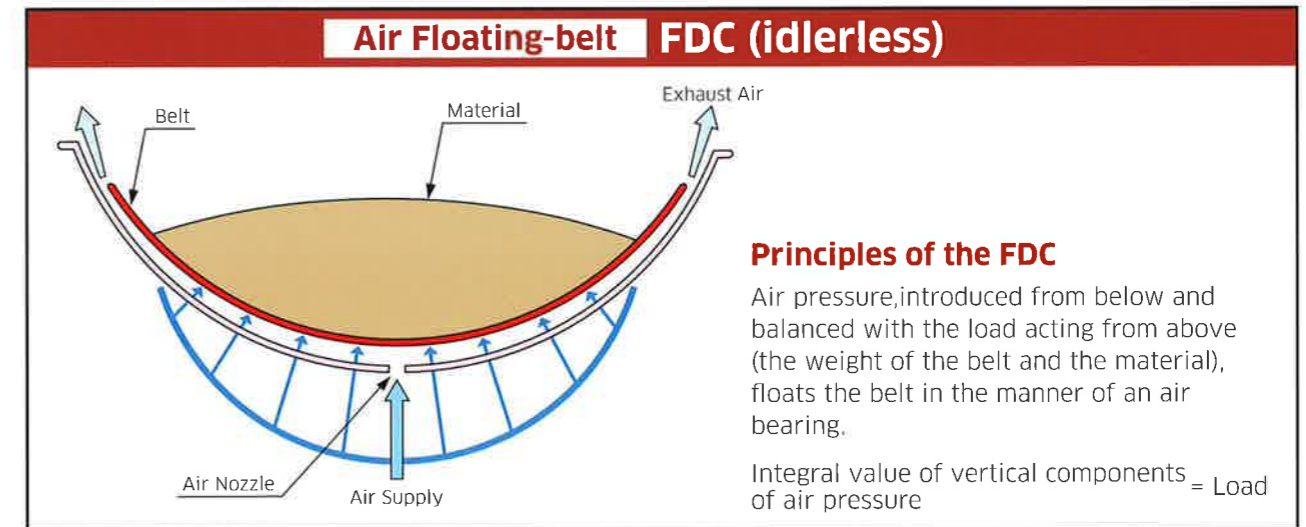
In order to enable the belt to float, a blower is installed. Intake air is discharged by a dust collector.



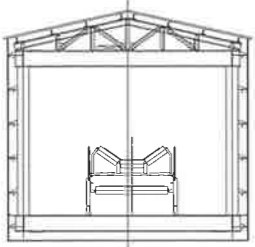
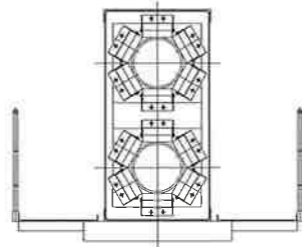
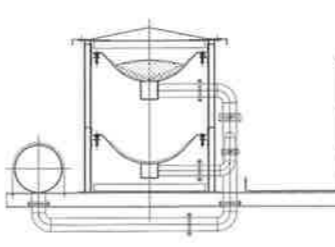
A new, idlerless, high-speed belt conveyor system that uses air pressure to handle bulk materials in an enclosed pipe.

## Main features

Flow Dynamics Conveyor (FDC) is a totally enclosed system and an idlerless conveyor featuring an air floating belt that is especially environmentally friendly and energy-saving in its operation, including excellent low noise, low vibration and greatly reduced dust emission when compared to a conventional conveyor.



## Comparison with Other Conventional Conveyors

Item	Conventional conveyor with gallery	Pipe conveyor	FDC
<b>Sectional view</b>			
<b>Structure</b>			
(1) intermediate components			
Structure	Stringer frame	Arched frame	Plate girder
Idlers	Required	Required	Not required
Belts	Required	Required	Required
Galleries	Required	Not required	Not required
Anti-spillage plate	Required	Not required	Not required
Catwalk	Both sides	Both sides	One side
(2) Belt-floating fan	Not required	Not required	Required
(3) Belt/pulley widths	Normal	Large	Small
<b>Maintenance</b>			
Idler replacement for intermediate parts	Required	Required	Not required
Cleaning	Required	Not required(reversible)	Not required
<b>Environmental protection</b>			
Soundproofing	Good	Idler noise	Excellent
Dustproofing	Good	Good	Excellent
<b>Layout arrangement</b>			
Curved	N/A	Adaptable	Possible
High speed	Limited	Limited	Possible
Sectional space	Large	Medium	Small
Appearance	Normal	Normal	Excellent

## Patents and utility models

- Air floating belt conveyor device
- Separate-pipe type conveyor device
- Noise-suppressed conveyor device
- Belt-floating air supply mechanism
- Belt-floating adjustment method
- Belt-floating control device and method
- Belt-floating detection device and prevention device
- Belt-floating detection and adjustment methods
- Material weighing device
- Material weighing device and method
- Load/No load detection and metering methods
- Conveyor cleaning device
- Conveyor cleaning device and method
- Conveyor anti-freezing/release device and method
- Conveyor and loading device and their guide components
- Others

## Sample installation sites

The FDC system readily allows easy layout, high speed and smooth handling at both the receiving and discharging lines for bulk material handling in power stations, steel mills, chemical plants, etc.

- **Location** : Coal-fired power station, Korea
- **Use** : Receiving & discharge line
- **Material** : Coal
- **Capacity (t/h)** : 5,280
- **Length** : 349/347 (2 lines)
- **Speed (m/min)** : 300
- **Belt width (mm)** : 1,800
- **Completed** : 2008



- **Location** : Coal-fired power station, Korea
- **Use** : Shiploading line
- **Material** : Dry Ash
- **Capacity (t/h)** : 550
- **Length** : 380/159/149/138/133/86/77/74 (8 lines)
- **Speed (m/min)** : 250
- **Belt width (mm)** : 800
- **Completed** : 2008



- **Location** : Cement plant, Korea
- **Use** : Discharge line
- **Material** : Limestone
- **Capacity (t/h)** : 2,000
- **Length** : 1,198/981/817/453 (4 lines)
- **Speed (m/min)** : 280
- **Belt width (mm)** : 1,000
- **Completed** : 2010



# FLOW DYNAMICS CONVEYOR

- **Location** : Coal-fired power station, Taiwan
- **Use** : Discharge line
- **Material** : Coal
- **Capacity (t/h)** : 4,400/2,200
- **Length** : 988×2/460×2/448 ×2 (6 lines)
- **Speed (m/min)** : 300/270
- **Belt width (mm)** : 1,600/1,200
- **Completed** : 2016



- **Location** : Coal-fired power station, Japan
- **Use** : Discharge line
- **Material** : Wet Ash
- **Capacity (t/h)** : 800
- **Length** : 550/458/250 (3 lines)
- **Speed (m/min)** : 260
- **Belt width (mm)** : 800
- **Completed** : 2013



- **Location** : Ironworks, Japan
- **Use** : Discharging line to shiploading line
- **Material** : Blast furnace slag
- **Capacity (t/h)** : 800
- **Length** : 226/262/401/458 (4 lines)
- **Speed (m/min)** : 185
- **Belt width (mm)** : 800
- **Completed** : 2016



- **Location** : Coal-fired power station, Japan
- **Use** : Receiving line from ship, discharge line to boiler
- **Material** : Limestone
- **Capacity (t/h)** : 400/50
- **Length** : 321(curved) 255/54/33
- **Speed (m/min)** : 150/70
- **Belt width (mm)** : 650/400
- **Completed** : 1999



- **Location** : IPP power station, Japan
- **Use** : Discharging line to boiler bunker, shiploading line
- **Material** : Coal, ash
- **Capacity (t/h)** : 80/400
- **Length** : 100/143
- **Speed (m/min)** : 130
- **Belt width (mm)** : 400/800
- **Completed** : 1999



- **Location** : Oil refinery plant, Italy
- **Use** : Discharge line
- **Material** : Pet coke
- **Capacity (t/h)** : 400
- **Length** : 155
- **Speed (m/min)** : 250
- **Belt width (mm)** : 650
- **Completed** : 2007

