

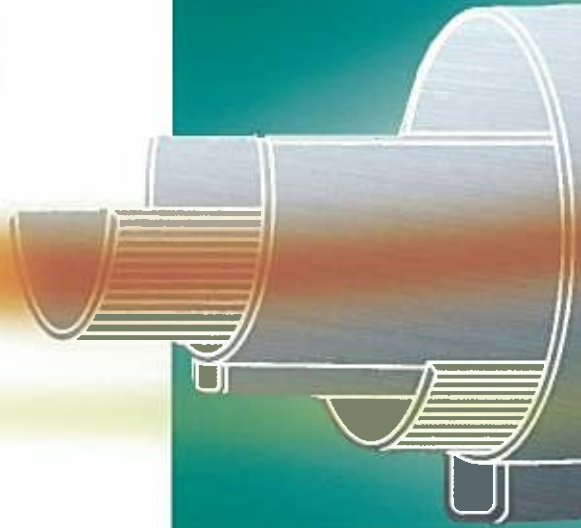
Kawasaki

Simple & Flexible

Flow
Dynamics
Conveyor

Air Floating Belt Conveyor

**FLOW DYNAMICS
CONVEYOR**

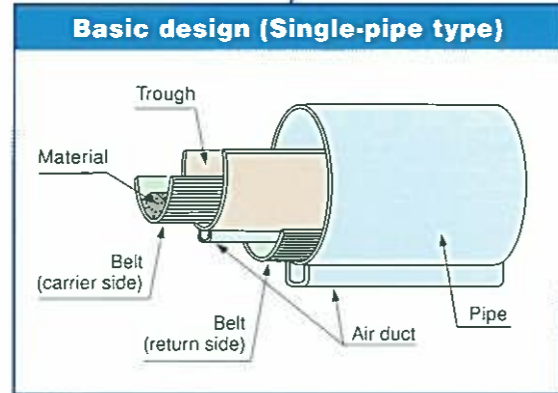
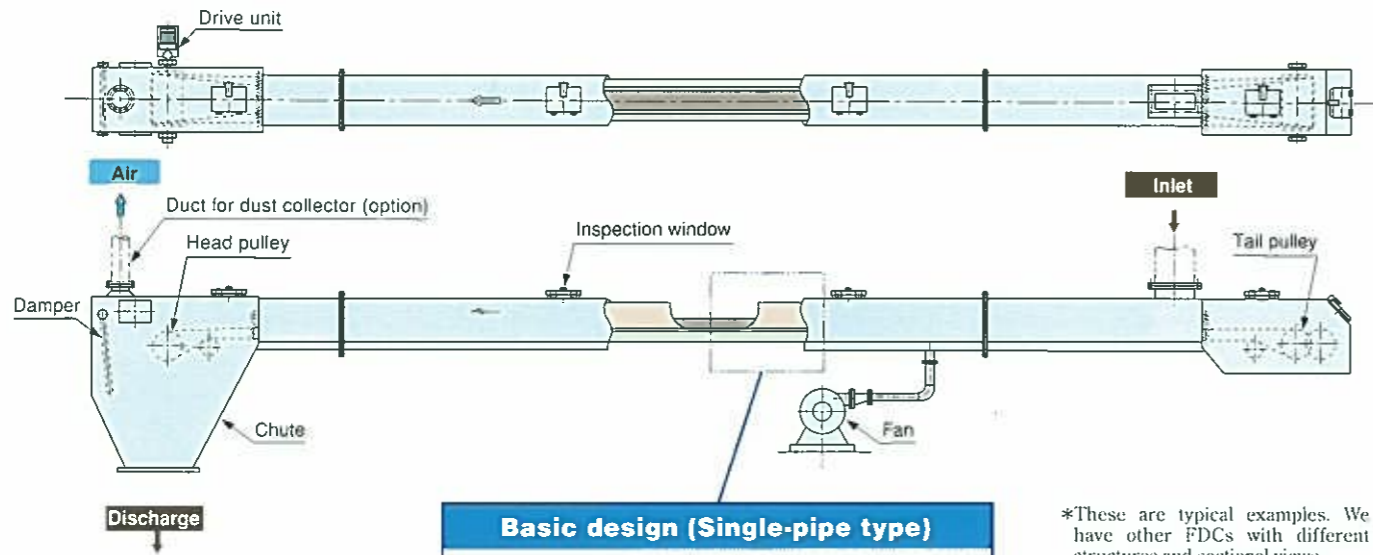


Flow Dynamics Conveyor

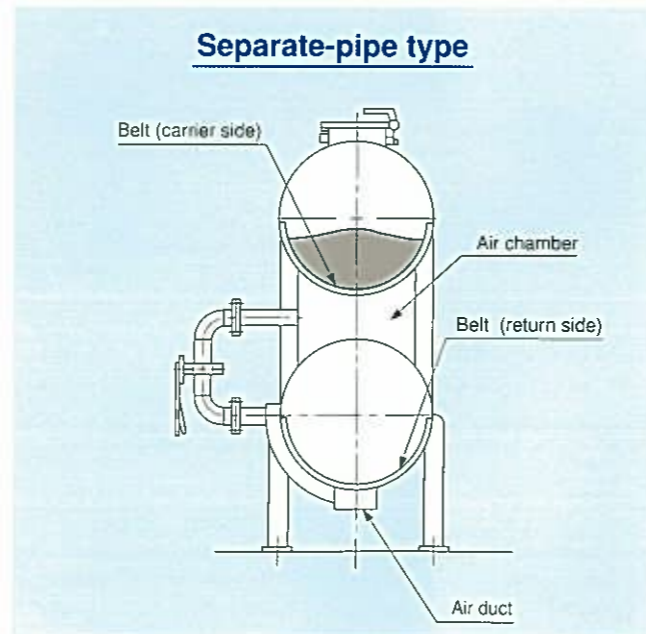
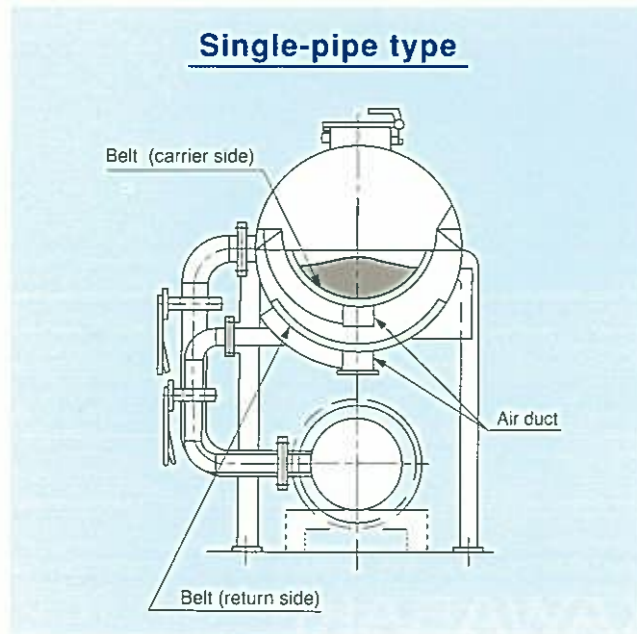
A new, idlerless, high-speed belt conveyor system that uses air pressure to handle bulk materials in an enclosed pipe.

Structure

The figures below show the configuration and sectional views of two types of flow dynamics conveyor (FDC): the single-pipe type, with the carrier and the return belts installed in the same pipe; and the separate-pipe type, with the belts installed in two separate pipes.*



*These are typical examples. We have other FDCs with different structures and sectional views.

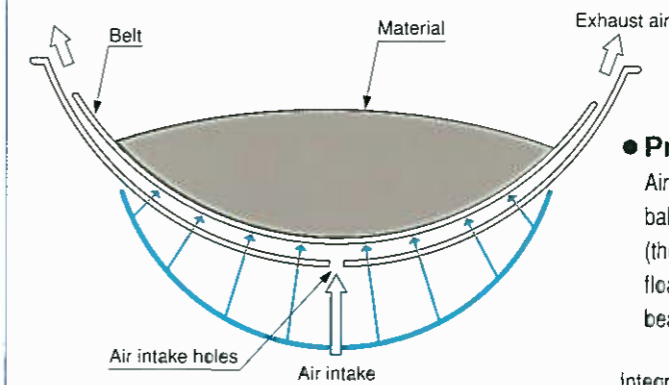


Main features

The simple and total enclosed structure makes possible any combination of installation styles (high-speed, curved, inclined and underground and so on).

Material can be handled with no spillage and no falling and no contamination in silent and smooth operation.

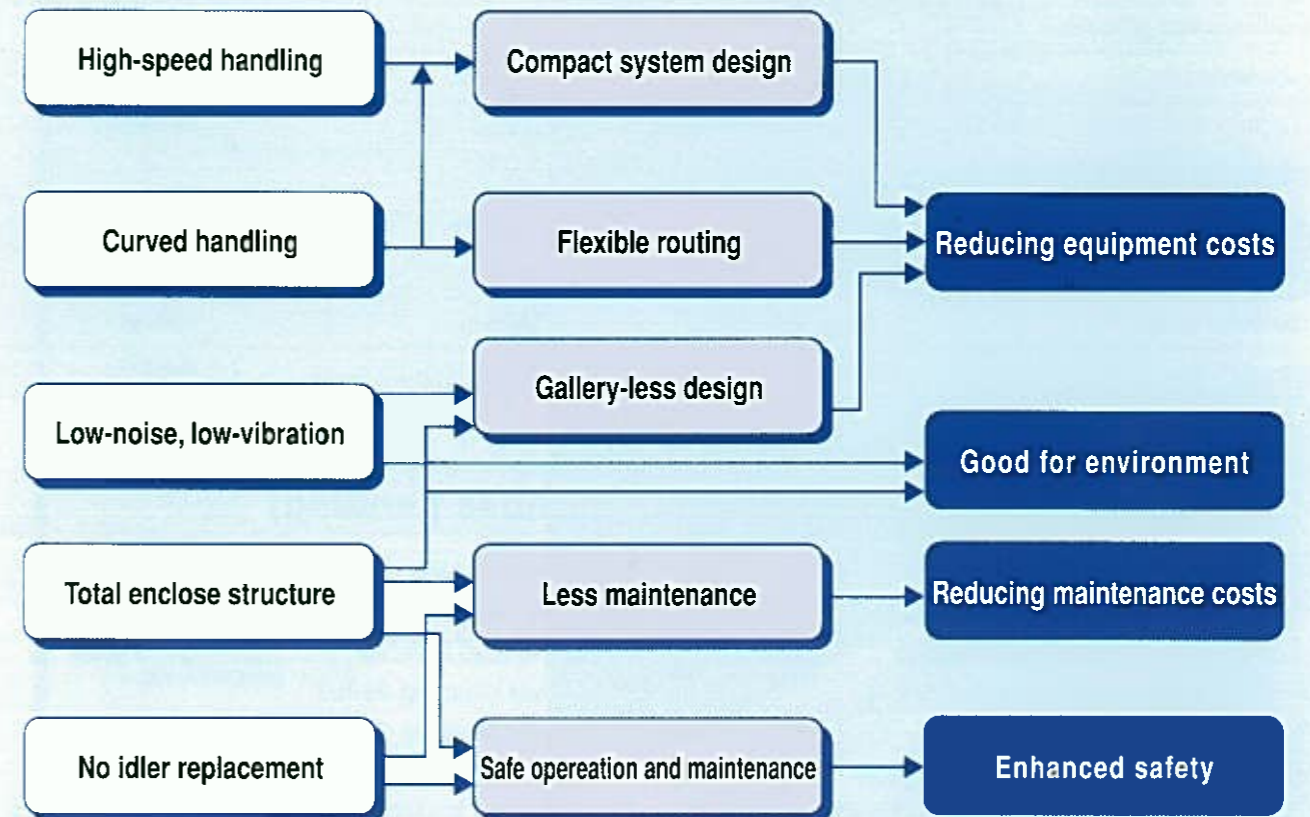
Air Floating-belt FDC (idlerless)



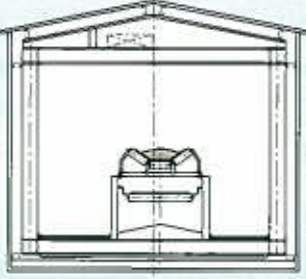
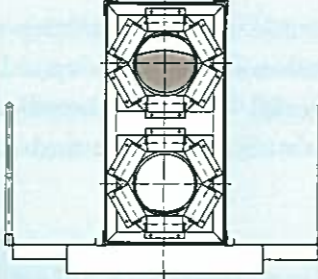
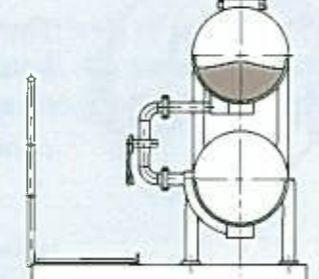
Principles of the FDC

Air pressure, introduced from below and balanced with the load acting from above (the weight of the belt and the material), floats the belt in the manner of an air bearing.

Integral value of vertical components = Load of air pressure



Comparison with Other Conventional Conveyors

Item	Conventional conveyor with gallery	Pipe conveyor	FDC
Sectional view			
Structure			
(1) Intermediate components			
Structure	Stringer frame	Arched frame	Pipe
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
Maintenance			
Idler replacement for intermediate parts	Required	Required	Not required
Cleaning	Required	Not required (reversible)	Not required
Environmental protection			
Soundproofing	Good	Idler noise	Excellent
Dustproofing	Good	Good	Excellent
Layout arrangement			
Curved	N/A	Adaptable	Possible
High speed	Limited	Limited	Possible
Sectional space	Large	Medium	Small
Appearance	Normal	Normal	Excellent

Patents and utility models (including those pending)

- 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-deviating detection device and prevention device
- Belt-deviating 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



FDC makes possible easy layout, high speed and smooth handling at receiving line and discharging line for bulk material handling in power station, steel mill, chemical company and so on.

Single-pipe type

- Site : Coal-fired power station
- Use : Shiploading line
- Product : Dry ash
- Capacity(t/h) : 500
- Length(m) : 171×2/123×2
- Speed(m/min) : 250
- Belt width(mm) : 800
- Since : 1996



- Site : Coal-fired power station
- Use : Shiploading line
- Product : Dry ash, wet ash
- Capacity(t/h) : 420/310
- Length(m) : 308/183/64, 30/16
- Speed(m/min) : 220
- Belt width(mm) : 1,000/800
- Since : 1999



- Site : Coal-fired power station
- Use : Receiving line from ship
- Product : Coal
- Capacity(t/h) : 3,000
- Length(m) : 286/284, 256/250
- Speed(m/min) : 270
- Belt width(mm) : 1,400
- Since : 2000



Single-pipe type

- **Site** : Coal-fired power station
- **Use** : Receiving line from ship, discharging line to boiler bunker
- **Product** : Coal
- **Capacity(t/h)** : 1,500/1,000, 600/400
- **Length(m)** : 55/34×2, 278/78, 74×2, etc.
- **Speed(m/min)** : 270/200
- **Belt width(mm)** : 1,200/1,000, 800/650
- **Since** : 2000



Separate-pipe type

- **Site** : Coal-fired power station
- **Use** : Shiploading line
- **Product** : Gypsum
- **Capacity(t/h)** : 400
- **Length(m)** : 286/128, 119/67
- **Speed(m/min)** : 160
- **Belt width(mm)** : 750
- **Since** : 1997



- **Site** : Steel mill works
- **Use** : Discharging line to plant
- **Product** : Iron alloy, raw steel materials
- **Capacity(t/h)** : 600/150
- **Length(m)** : 253/124/40, 105/73/60/55
- **Speed(m/min)** : 120
- **Belt width(mm)** : 1,000/600, 500
- **Since** : 1998



Separate-pipe type

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



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



KAWASAKI HEAVY INDUSTRIES, LTD.

PLANT & INFRASTRUCTURE COMPANY

<http://www.khi.co.jp>

Tokyo Head Office

1-14-5, Kaigan, Minato-ku, Tokyo 105-8315, Japan
Industrial Plant Sales Department (Industrial Plant)
Phone : +81-3-3435-6621 Fax : +81-3-3435-6601

OVERSEAS SUBSIDIARIES

Kawasaki Heavy Industries Ltd.

Australian Representative Office

Suite 5.02, Level 5, 379 Queen Street, Brisbane QLD 4000 Australia
Phone: 61-7-3221-4396 Fax: 61-7-3220-3329

Kawasaki Heavy Industries (Singapore) Pte. Ltd.

6 Battery Road, #18-04, Singapore 049909
Phone: 65-6225-5133~4 Fax: 65-6224-9029

Kawasaki Heavy Industries Middle East FZE

Dubai Airport Free Zone, Bldg. 6W, Block-A, Office No.709 P.O.
Box 54878, Dubai, UAE
Phone: 971-4-214-6730 Fax: 971-4-214-6729

Kawasaki Heavy Industries Machinery Trading (Shanghai) Co., Ltd.

10F, Chong Hing Finance Center, 288 Nanjing Road West,
Huangpu District, Shanghai 200003, People's Republic of China
Phone: 86-21-3366-3200 Fax: 86-21-3366-3205

Kawasaki Heavy Industries Machinery Trading (Shanghai) Co., Ltd. Beijing Office

Room 2209, East Ocean Centre, No.24A, Jianguomenwai Ave.
Beijing 100004, People's Republic of China
Phone: 010-6515-5807/6515-5802-3200 Fax: 101-6515-7155

