For Earth, For Life

Kubota

POWDER AND
BULK SOLIDS
FEEDING SYSTEM

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ISO-14001 CERTIFIED
KUBOTA KYUHOJI BUSINESS CENTER

ISO-9001 CERTIFIED
KUBOTA PRECISION EQUIPMENT BUSINESS UNIT

No.323. '22.02.0.5. IN.BS.

Innovative Gravimetric Feeders
Made by KUBOTA, Made in JAPAN

Contents

Feeder lineup

Type	Model	Control panel *1: Feeder mounted type	Control panel *1: Standalone type	Applications: Pellet	Resin powder	Filler	Pigment powder	Crushed sheet	GF/CF	Liquid	Food application	Flame explosion proof option *2	Hopper capacity (L)/ Configuration	Flow rate range (L/h) *3	Page
Twin Screw Type	NX-T26E	●		●	●	●	●	●	●		●		50	5–1000	5
	NX-T45ME	●		●	●	●	●	●	●		●		100	10–2000	
	NX-T45D	●		●	●	●	●	●	●		●		200	10–2000	
	CE-W-0E	●	●	●	●	●	●		●		●		10	0.05–50	7
	CE-W-1E	●	●	●	●	●			●		●		25	1–1000	8
	CE-W-2E	●	●	●	●	●			●		●		50	1–1000	
	CE-W-3E	●	●	●	●	●			●		●		100	10–2000	
	CE-W-4E	●	●	●	●	●			●		●		200	10–2000	
	CE-T-1E	●	●	●	●	●		●	●			●	25	1–1000	9
	CE-T-2E	●	●	●	●	●		●	●			●	50	1–1000	
	CE-T-3E	●	●	●	●	●		●	●			●	100	10–2000	
	CE-T-4E	●	●	●	●	●		●	●			●	200	10–2000	
	CE-T-5E	●	●	●	●	●	●	●			●	●	500	10–2000	15
	CE-T-6E	●	●	●	●	●	●	●			●	●	1000	10–2000	
	CE-T-7E	●	●	●	●	●	●	●			●	●	2000	10–2000	
Single Screw Type	NX-S50E	●		●	●	●	●	●	●		●		50	1–1000	6
	NX-S78E	●		●	●	●	●	●	●		●		100	10–2000	
	NX-S90D	●		●	●	●	●	●	●		●		200	10–2000	
	CE-S-1E	●	●	●	●	●	●					●	25	1–1000	11
	CE-S-2E	●	●	●	●	●	●					●	50	1–1000	
	CE-S-3E	●	●	●	●	●	●					●	100	10–2000	
	CE-S-4E	●	●	●	●	●	●					●	200	10–2000	
	CE-R-1E	●	●	●	●	●	●					●	25	1–1000	12
	CE-R-2E	●	●	●	●	●	●					●	50	1–1000	
	CE-R-3E	●	●	●	●	●	●					●	100	10–2000	
	CE-R-4E	●	●	●	●	●	●					●	200	10–2000	
	CE-M-1E	●	●	●	●	●	●						25	1–1000	10
	CE-M-2E	●	●	●	●	●	●						50	1–1000	
	CE-M-3E	●	●	●	●	●	●						100	10–2000	
	CE-M-4E	●	●	●	●	●	●						200	10–2000	
	CE-S-5E	●	●	●	●	●	●	●			●	●	500	10–2000	15
	CE-S-6E	●	●	●	●	●	●	●			●	●	1000	10–2000	
	CE-S-7E	●	●	●	●	●	●	●			●	●	2000	10–2000	
Vibratory Type	CE-B-1D		●	●									1.5	0.1–10	13
	CE-V-1D	●	●	●					●				25	1–1000	14
	CE-V-2D	●	●	●					●				50	1–1000	
	CE-V-3D	●	●	●					●				100	10–2000	
Pump Type	CE-L-1D		●							●			25	1–1000	16
	CE-L-2D		●							●			50	1–1000	
	CE-L-3D		●							●			100	10–2000	
Belt Type	BW-150-1E	●	●	●	●								Gate (Standard type)	10–2000	17
	BW-300-1E	●	●	●	●									10–2000	
	BW-500-1E	●	●	●	●									10–2000	
	BW-300-2E	●	●	●	●	●	●	●					Single screw (Fixed)	10–2000	18
	BW-300-3E	●	●	●	●	●	●	●					Twin screw (Fixed)	10–2000	
	BW-300-4E	●	●	●	●	●	●	●					Fixed (Movable)	10–2000	
	BW-300-5E	●	●	●	●	●	●	●					Movable	10–2000	

*1 Please see p.20 for the details about control panel
*2 The option of explosion proof is applied only for the machine of feeder (not for control). And our standard of explosion proof comply with TIIS (Japan) and KOSHA (Korea).
*3 The flow rate on the brochure is theoretical one. The actual flow rate could be different depending on the material characteristics.
** Volumetric feeder is also available. Please contact your Reps.

NX Feeder

Wide material applications

* Patent and trademark are pending

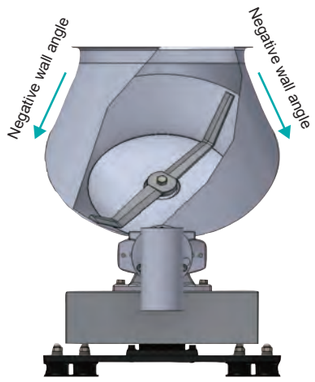
- Negative wall angle hopper and diagonal agitator structure* provide anti-bridging function.
- Available to feed the materials which are used to make bridge or rat hole in tapered hopper, without problem.
- Use for wide range of materials such as powder, pellet, fiber, crushed sheet etc.

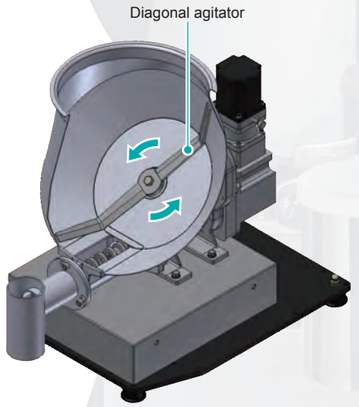
High feeding accuracy

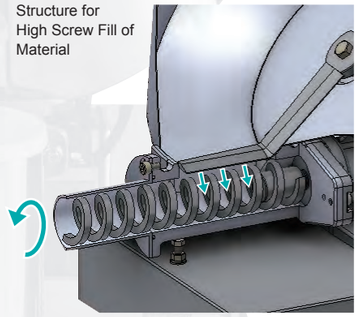
- High weight stability by diagonal agitator which moves very close to hopper wall and decreases unnecessary movement of material.
- Material is filled stably into screw part because agitator pushes materials while passes.
- These features of diagonal agitator achieve high feeding accuracy.

Easy maintenance design

- Disassembly and cleaning is easy because of simple structure and small number of components.
- Motor load can be checked any time by indication of motor torque on the operation terminal.
- Prevent the loss of bolts when disassembling a discharge hopper and tube, because of adopting the bolt fall prevention structure.





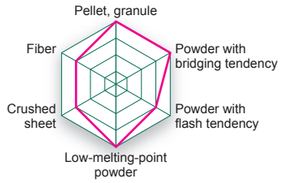


Twin Screw Weighing Feeder NX-T

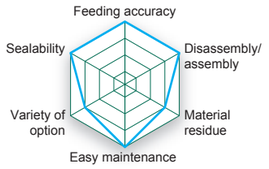
Kubota D-LC DIGITAL LOAD CELL

Material example

- Pellet
- Resin powder
- Calcium carbonate
- Talc
- Titanium oxide
- Carbon black
- Crushed sheet
- Glass fiber
- Carbon fiber
- Flour
- Corn starch



Product feature



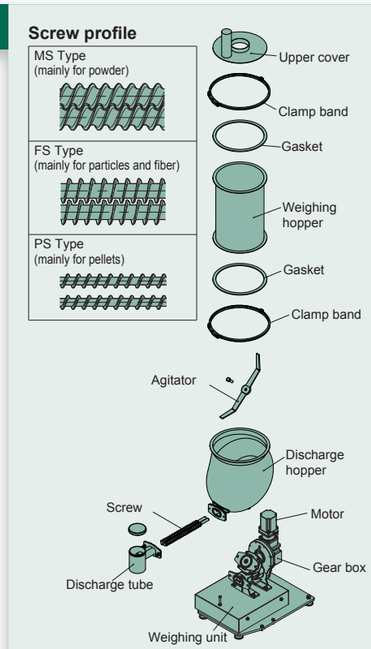
Construction

Screw profile

MS Type (mainly for powder)

FS Type (mainly for particles and fiber)

PS Type (mainly for pellets)



Feature

- High feeding accuracy and bridge resistance by innovative diagonal agitator design. (Twin screw type can feed powder materials in higher accuracy than single screw type)
- Wide range of material handling with one model.
- Reduce the running cost of equipment by easy maintenance design.

Specifications

Model	Flow rate range	Hopper capacity	Weighing capacity	Feeder weight	Power supply
NX-T26E-MP	1- 300L/h	50L	40kg	Approx. 92kg	200-240 AC, 1 phase, 1.3 kVA
NX-T45ME-MP	10-2000L/h	100L	100kg	Approx. 157kg	200-240 AC, 1 phase, 3.1 kVA
NX-T45D-MP	10-1200L/h*	200L	200kg	Approx. 195kg	200-240 AC, 1 phase, 2.6 kVA

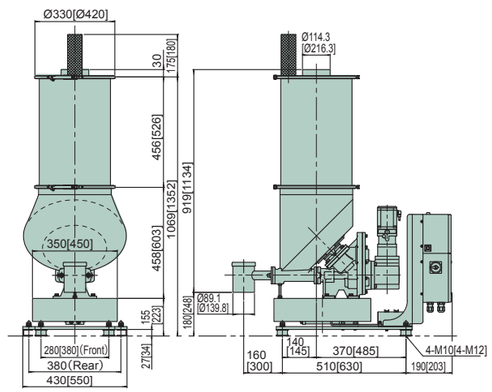
* NX-T45D-MP has smaller “maximum flow rate” than NX-T45ME because of lower rotation speed capacity of agitator and screw.

Feeder mounted panel type only

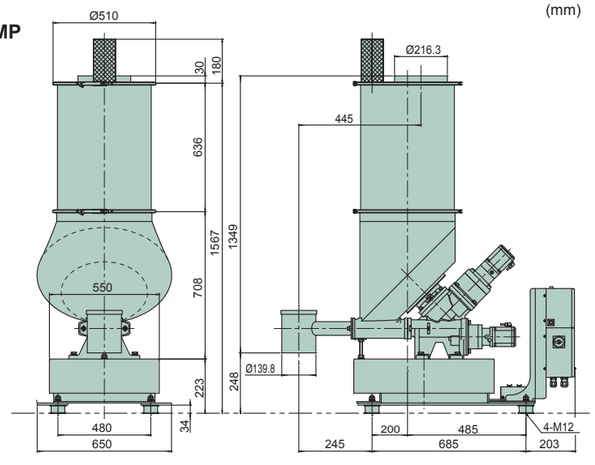
Dimensions

(mm)

NX-T26E-MP [NX-T45ME-MP]



NX-T45D-MP

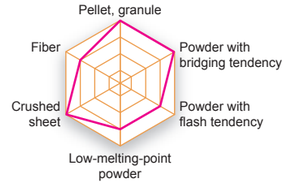


Single Screw Weighing Feeder NX-S

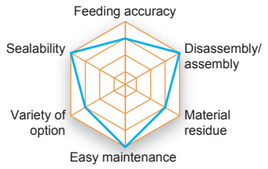
Kubota D-LC DIGITAL LOAD CELL

Material example

- Pellet
- Resin powder
- Calcium carbonate
- Talc
- Titanium oxide
- Carbon black
- Crushed sheet
- Glass fiber
- Carbon fiber
- Flour
- Corn starch



Product feature

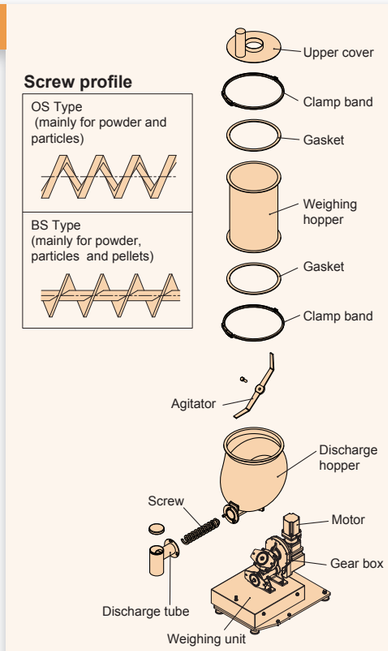


Construction

Screw profile

OS Type (mainly for powder and particles)

BS Type (mainly for powder, particles and pellets)



Feature

- High feeding accuracy and bridge resistance by innovative diagonal agitator design.
- Wide range of material handling with one model.
- Reduce the running cost of equipment by easy maintenance design.

Specifications

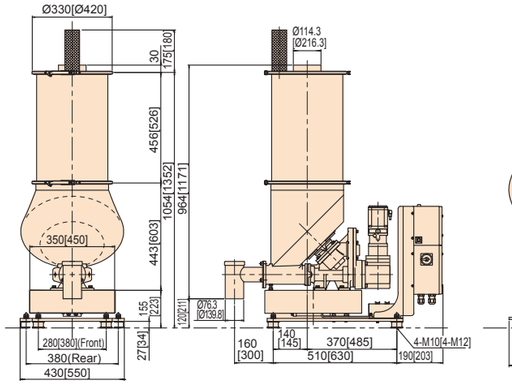
Model	Flow rate range	Hopper capacity	Weighing capacity	Feeder weight	Power supply
NX-S50E-MP	2- 300L/h	50L	40kg	Approx. 90kg	200-240 AC, 1 phase, 1.3 kVA
NX-S78E-MP	30-2000L/h	100L	100kg	Approx. 151kg	200-240 AC, 1 phase, 3.1 kVA
NX-S90D-MP	50-2000L/h	200L	200kg	Approx. 190kg	200-240 AC, 1 phase, 2.6 kVA

Feeder mounted panel type only

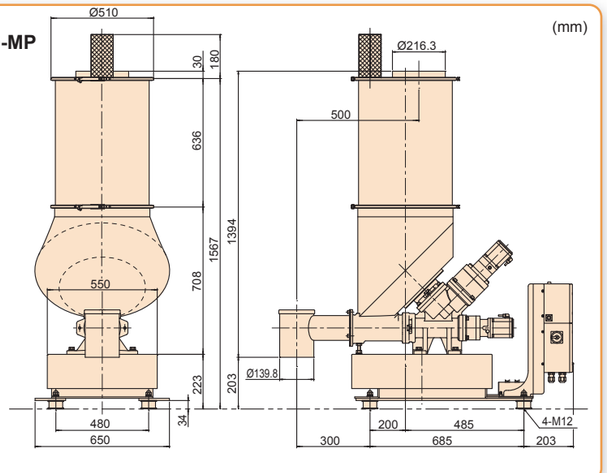
Dimensions

(mm)

NX-S50E-MP [NX-S78E-MP]



NX-S90D-MP

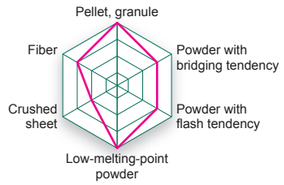


Twin Screw Weighing Feeder CE-W

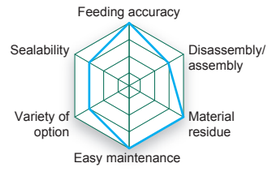
Construction

Material example

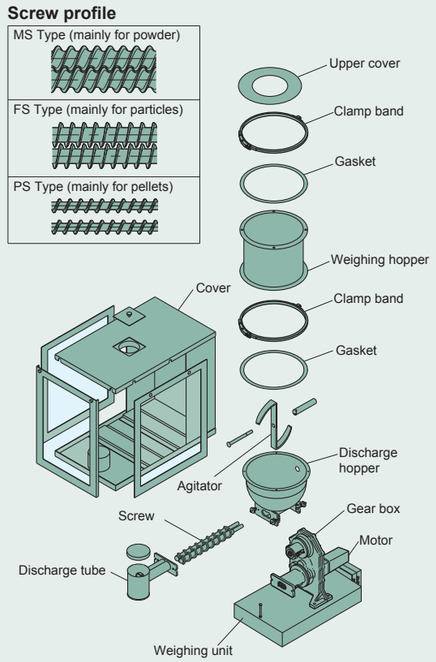
- Additive
- Dye
- Pigment
- Filler
- Pellet
- Flour
- Corn starch



Product feature



Screw profile



Feature

- Appropriate model for R&D use and additive feeding because of its capability of high feeding accuracy at very small flow rate.
- Daily maintenance is easy because disassembling can be handled without tools.
- Easy cleaning because of small material residue after feeding.

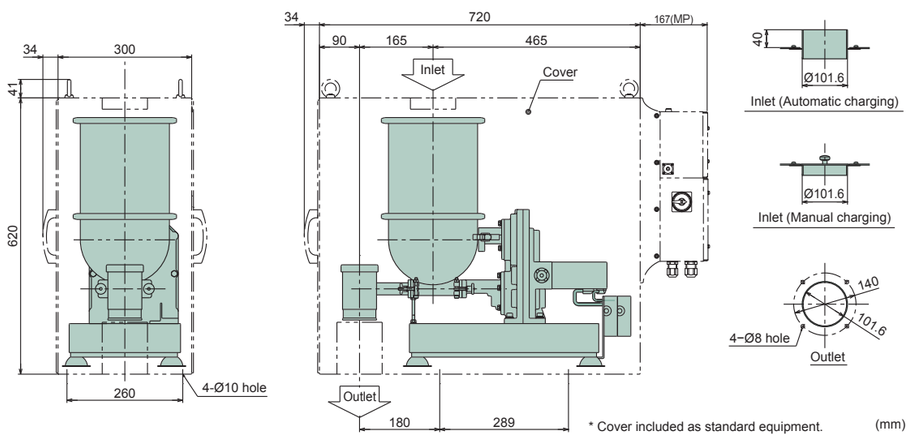
Specifications

Model	Flow rate range	Hopper capacity	Weighing capacity	Feeder weight	Power supply
CE-W-0E CE-W-0E-MP	0.05 ～50L/h	10L	5kg	Approx. 60kg Approx. 75kg	200-240 AC, 1 phase, 0.9 kVA

The models having "-MP" are feeder mounted panel type.

Dimensions

CE-W-0E
CE-W-0E-MP

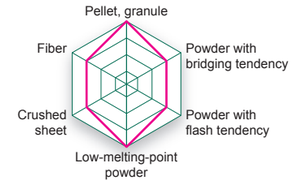


* Cover included as standard equipment. (mm)

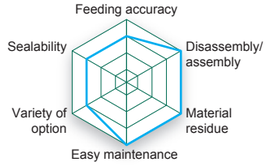
Construction

Material example

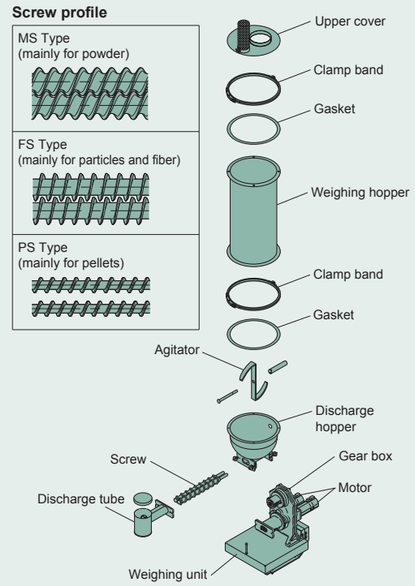
- Pellet
- Resin powder
- Calcium carbonate
- Talc
- Glass fiber
- Carbon fiber
- Flour
- Corn starch



Product feature



Screw profile



Feature

- Disassembling can be handled without tools. Lightweight hopper helps disassembling work.
- Easy cleaning because of small material residue after feeding.
- Vertical agitator option is available for materials with high bridging tendency.

Specifications

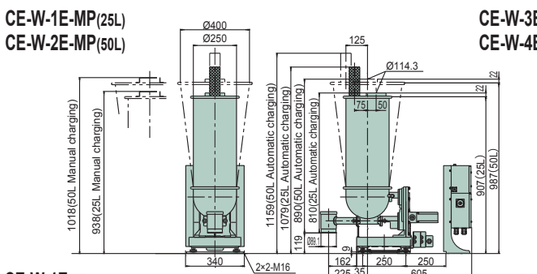
Model	Flow rate range	Hopper capacity	Weighing capacity	Feeder weight	Power supply
CE-W-1E CE-W-1E-MP	1 - 300L/h	25L	30kg	Approx. 40kg Approx. 65kg	200-240 AC, 1 phase, 1.4 kVA
CE-W-2E CE-W-2E-MP		50L	30kg	Approx. 42kg Approx. 67kg	
CE-W-3E CE-W-3E-MP	10-2000L/h	100L	100kg	Approx. 130kg Approx. 180kg	200-240 AC, 1 phase, 2.6 kVA
CE-W-4E CE-W-4E-MP		200L	200kg	Approx. 140kg Approx. 190kg	

*Model name of feeder with vertical agitator changes from E to VE, except for CE-W-1E.

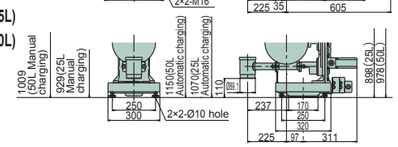
The models having "-MP" are feeder mounted panel type.

Dimensions

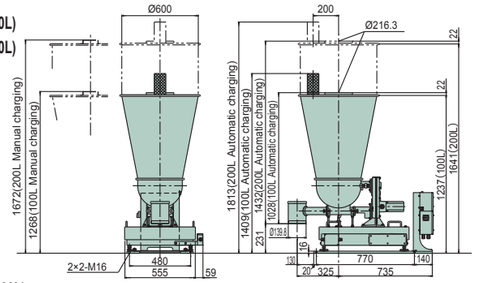
CE-W-1E-MP(25L)
CE-W-2E-MP(50L)



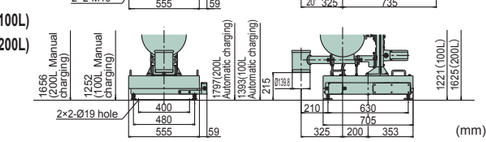
CE-W-1E(25L)
CE-W-2E(50L)



CE-W-3E-MP(100L)
CE-W-4E-MP(200L)



CE-W-3E(100L)
CE-W-4E(200L)



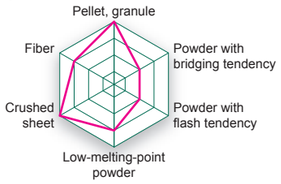
(mm)

Twin Screw Weighing Feeder CE-T

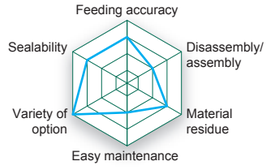
Kubota D-LC DIGITAL LOAD CELL

Material example

- Pellet
- Resin powder
- Calcium carbonate
- Talc
- Crushed sheet
- Glass fiber
- Carbon fiber

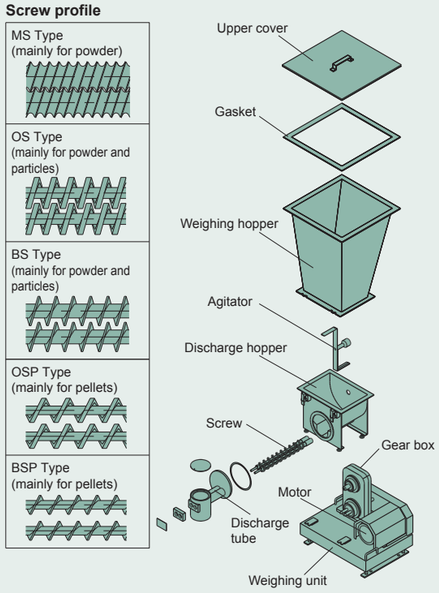


Product feature



Construction

Screw profile



Feature

- Applicable to light bulk density materials such as pulverized sheet because of its wide opening to the screw area.
- Flame explosion proof option is available.
- Heat resistance option for high temperature materials.

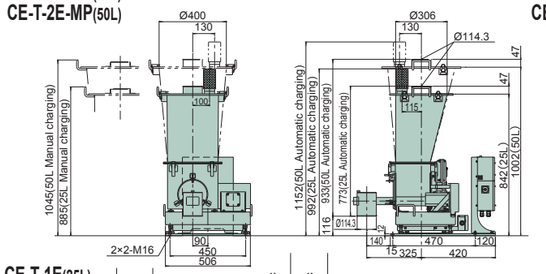
Specifications

Model	Flow rate range	Hopper capacity	Weighing capacity	Feeder weight	Power supply
CE-T-1E CE-T-1E-MP	4- 400L/h	25L	30kg	Approx. 95kg Approx.125kg	200-240 AC, 1 phase, 1.3 kVA
CE-T-2E CE-T-2E-MP		50L	30kg	Approx.100kg Approx.130kg	
CE-T-3E CE-T-3E-MP	40-2000L/h	100L	100kg	Approx.190kg Approx.240kg	200-240 AC, 1 phase, 3.1 kVA
CE-T-4E CE-T-4E-MP		200L	200kg	Approx.210kg Approx.260kg	

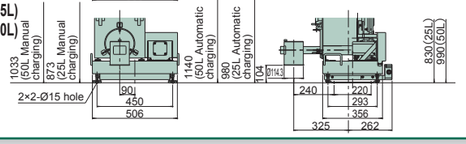
The models having "-MP" are feeder mounted panel type.

Dimensions

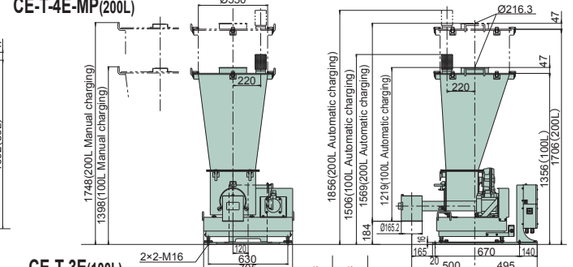
CE-T-1E-MP(25L)
CE-T-2E-MP(50L)



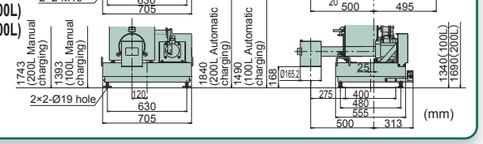
CE-T-1E(25L)
CE-T-2E(50L)



CE-T-3E-MP(100L)
CE-T-4E-MP(200L)



CE-T-3E(100L)
CE-T-4E(200L)

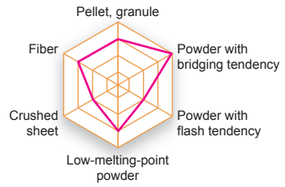


Single Screw Weighing Feeder CE-M

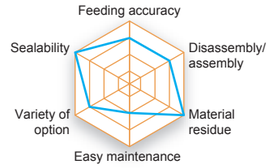
Kubota D-LC DIGITAL LOAD CELL

Material example

- Pellet
- Resin powder
- Calcium carbonate
- Talc
- Titanium oxide
- Carbon black

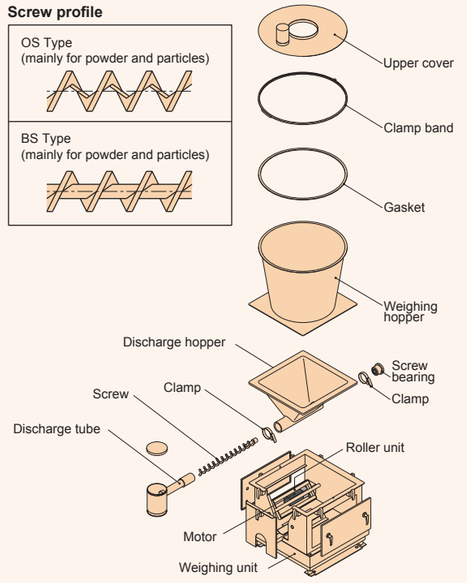


Product feature



Construction

Screw profile



Feature

- Wide range of material handling including high bridging material.
- Material replacement is quick by changing whole hopper.
- Flexible layout plan is available due to optional screw extension. (It depends on the materials and the conditions. Please ask our sales.)

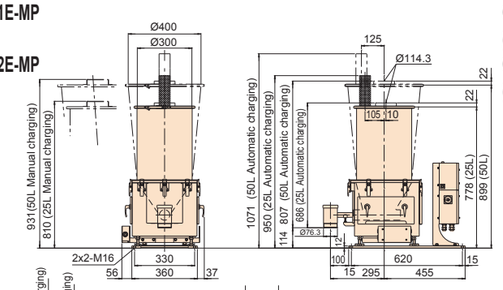
Specifications

Model	Flow rate range	Hopper capacity	Weighing capacity	Feeder weight	Power supply
CE-M-1E CE-M-1E-MP	1- 200L/h	25L	30kg	Approx. 85kg Approx.110kg	200-240 AC, 1 phase, 0.5 kVA
CE-M-2E CE-M-2E-MP		50L	30kg	Approx. 90kg Approx.115kg	
CE-M-3E CE-M-3E-MP	10-1100L/h	100L	100kg	Approx.180kg Approx.230kg	200-240 AC, 1 phase, 0.9 kVA
CE-M-4E CE-M-4E-MP		200L	200kg	Approx.200kg Approx.250kg	

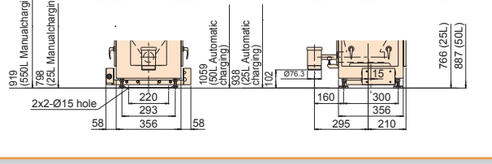
The models having "-MP" are feeder mounted panel type.

Dimensions

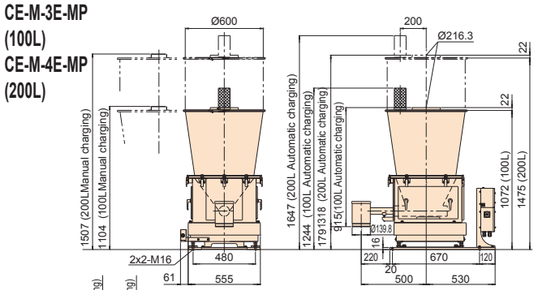
CE-M-1E-MP (25L)
CE-M-2E-MP (50L)



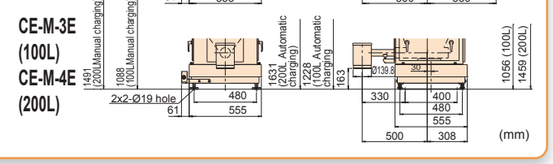
CE-M-1E (25L)
CE-M-2E (50L)



CE-M-3E-MP (100L)
CE-M-4E-MP (200L)



CE-M-3E (100L)
CE-M-4E (200L)

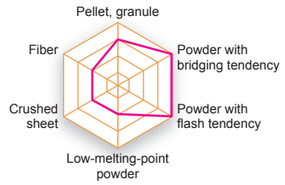


Single Screw Weighing Feeder CE-S

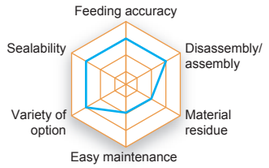
Kubota D-LC DIGITAL LOAD CELL

Material example

- Pellet
- Resin powder
- Calcium carbonate
- Talc
- Titanium oxide
- Silica
- Carbon black



Product feature



Construction

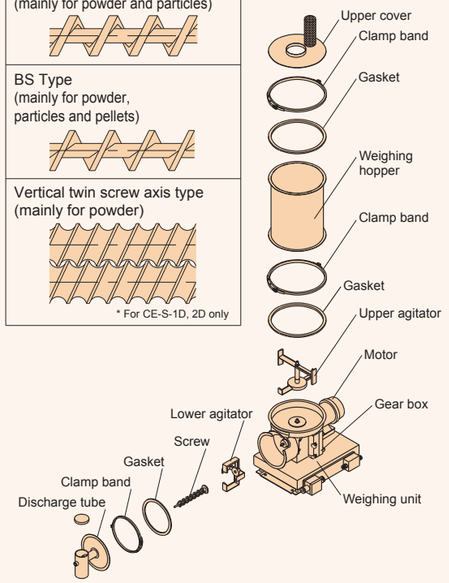
Screw profile

OS Type
(mainly for powder and particles)

BS Type
(mainly for powder, particles and pellets)

Vertical twin screw axis type
(mainly for powder)

* For CE-S-1D, 2D only



Feature

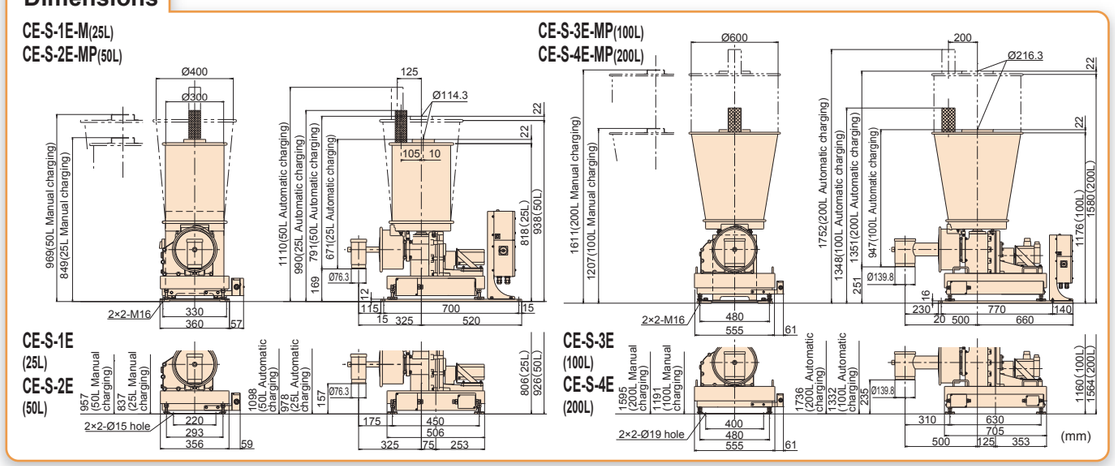
- Built-in countermeasure against difficult to handle materials such as TiO_2, Silica and carbon black.
- Flame explosion proof option is available.

Specifications

Model	Flow rate range	Hopper capacity	Weighing capacity	Feeder weight	Power supply
CE-S-1E CE-S-1E-MP	2- 300L/h	25L	30kg	Approx. 65kg Approx. 90kg	200-240 AC, 1 phase, 1.3 kVA
CE-S-2E CE-S-2E-MP		50L	30kg	Approx. 67kg Approx. 92kg	
CE-S-3E CE-S-3E-MP	50-1200L/h	100L	100kg	Approx.160kg Approx.210kg	200-240 AC, 1 phase, 3.1 kVA
CE-S-4E CE-S-4E-MP		200L	200kg	Approx.170kg Approx.220kg	

The models having "-MP" are feeder mounted panel type.

Dimensions

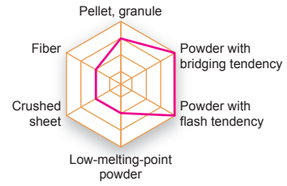


Single Screw Weighing Feeder CE-R

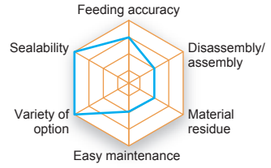
Kubota D-LC DIGITAL LOAD CELL

Material example

- Pellet
- Resin powder
- Calcium carbonate
- Talc
- Titanium oxide
- Silica
- Carbon black



Product feature



Construction

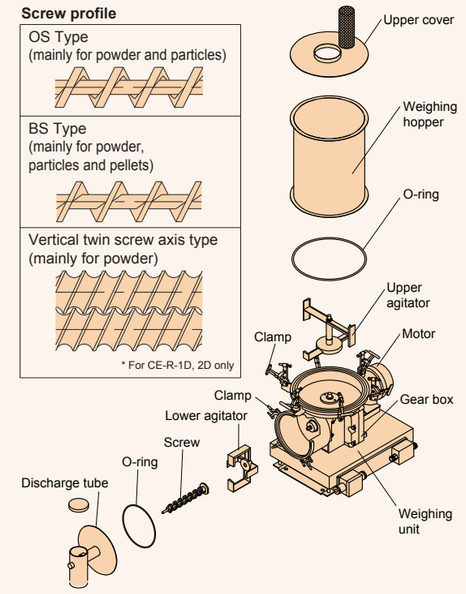
Screw profile

OS Type
(mainly for powder and particles)

BS Type
(mainly for powder, particles and pellets)

Vertical twin screw axis type
(mainly for powder)

* For CE-R-1D, 2D only



Feature

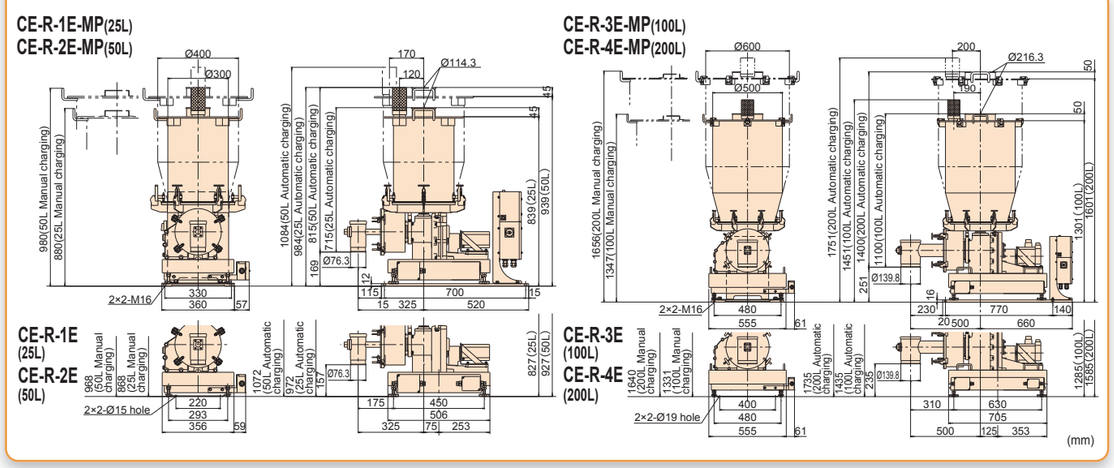
- Built-in countermeasure against difficult to handle materials such as TiO_2, Silica and carbon black.
- Applicable to fine powders with its high sealability.
- Flame explosion proof option is available.

Specifications

Model	Flow rate range	Hopper capacity	Weighing capacity	Feeder weight	Power supply
CE-R-1E CE-R-1E-MP	2- 300L/h	25L	30kg	Approx. 85kg Approx.110kg	200-240 AC, 1 phase, 1.3 kVA
CE-R-2E CE-R-2E-MP		50L	30kg	Approx. 90kg Approx.115kg	
CE-R-3E CE-R-3E-MP	50-1200L/h	100L	100kg	Approx.180kg Approx.230kg	200-240 AC, 1 phase, 3.1 kVA
CE-R-4E CE-R-4E-MP		200L	200kg	Approx.200kg Approx.250kg	

The models having "-MP" are feeder mounted panel type.

Dimensions

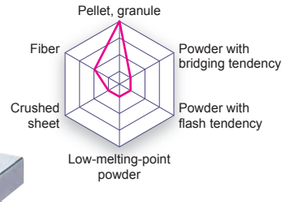


Vibratory type Weighing Feeder CE-B

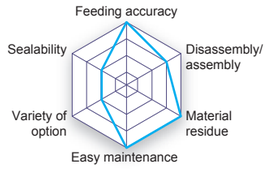
Kubota D-LC DIGITAL LOAD CELL

Material example

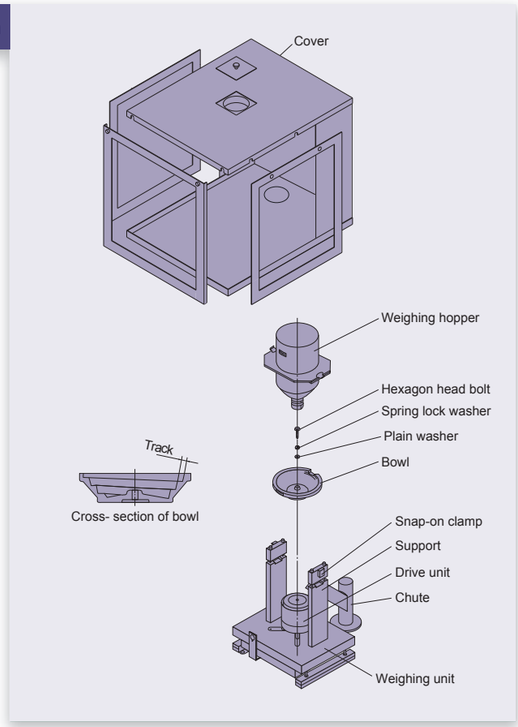
- Masterbatch (colored) pellets
- Other granules



Product feature



Construction



Feature

- High accurate feeding of pellet materials at very low flow rate.
- Appropriate for feeding masterbatch at small flow rate in fiber production process.
- Easy cleaning because of small material residue after feeding.

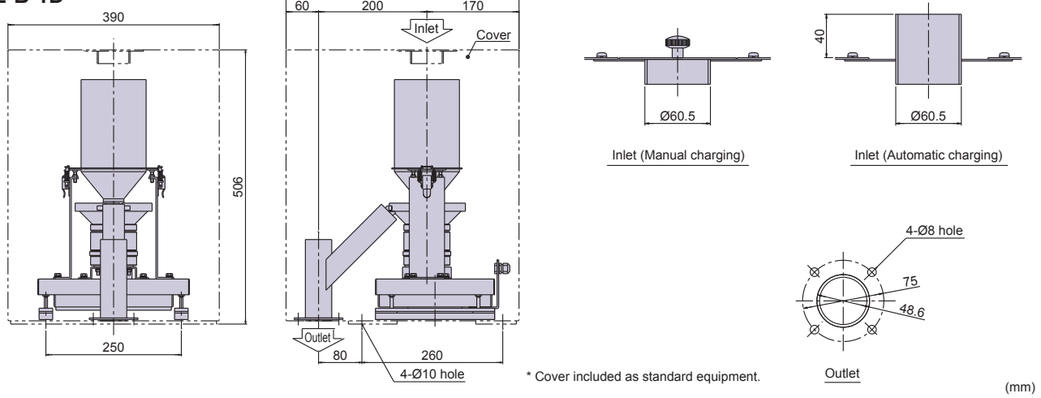
Specifications

Model	Flow rate range	Hopper capacity	Weighing capacity	Feeder weight	Power supply
CE-B-1D	0.2-10L/h	1.5L	1kg	Approx.40kg	200-220 AC, 1 phase, 0.2 kVA

Standalone control panel only

Dimensions

CE-B-1D



* Cover included as standard equipment.

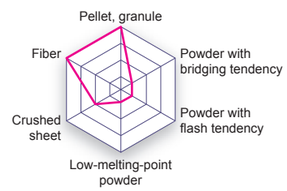
(mm)

Vibratory type Weighing Feeder CE-V

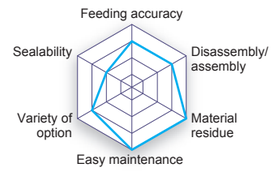
Kubota D-LC DIGITAL LOAD CELL

Material example

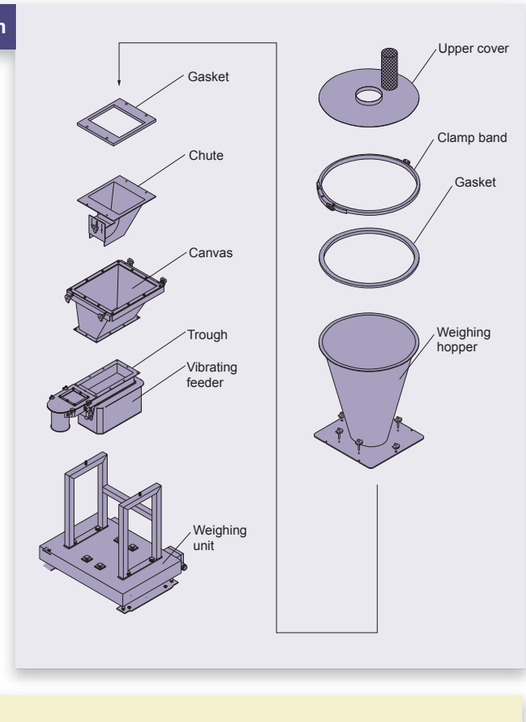
- Pellet
- Glass fiber
- Carbon fiber



Product feature



Construction



Feature

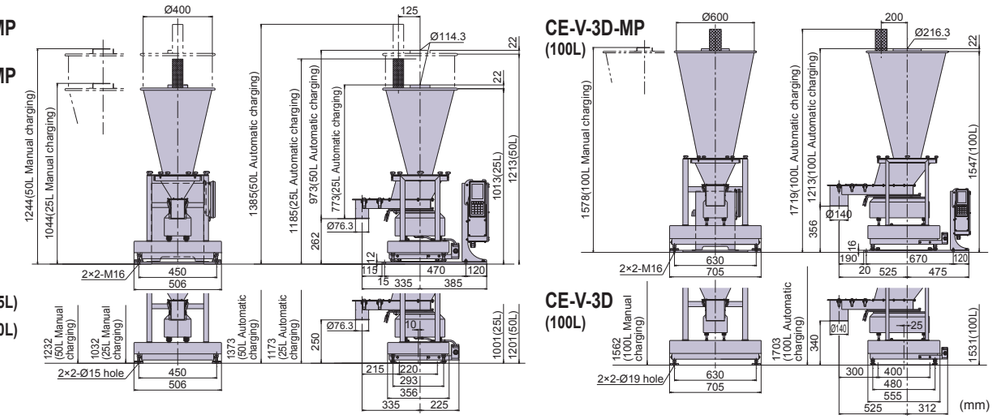
- Prevent loosening of fiber by vibratory feeding.
- Easy cleaning because of small material residue after feeding.

Specifications

Model	Flow rate range	Hopper capacity	Weighing capacity	Trough width	Feeder weight	Power supply
CE-V-1D CE-V-1D-MP	10- 150L/h	25L	30kg	60mm	Approx. 59kg Approx. 89kg	200-220 AC, 1 phase, 0.3 kVA
	20- 400L/h			100mm		
CE-V-2D CE-V-2D-MP	10- 150L/h	50L	30kg	60mm	Approx. 62kg Approx. 92kg	
	20- 400L/h			100mm		
CE-V-3D CE-V-3D-MP	80-1000L/h	100L	100kg	150mm	Approx.150kg Approx.200kg	200-220 AC, 1 phase, 0.4 kVA

The models having "-MP" are feeder mounted panel type.

Dimensions



(mm)

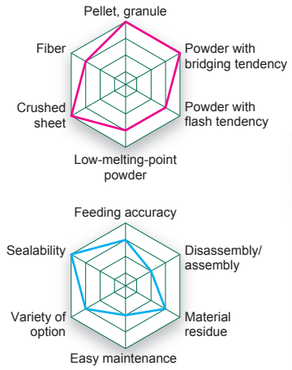
Single Twin Large Weighing Feeder

Kubota D-LC DIGITAL LOAD CELL

Material example

- Pellet
- Resin powder
- Calcium carbonate
- Talc
- Crushed sheet
- Flour
- Corn starch

Product feature



Feature

- Large flow rate with screw type feeder.
- Disassembly of screw part is available.
- Flame explosion proof option is available.

Specifications

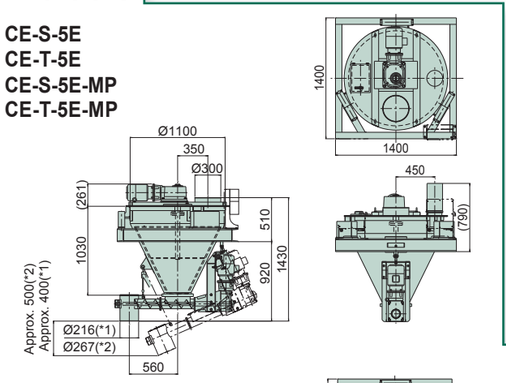
Model	Flow rate range	Hopper capacity	Weighing capacity	Screw	Feeder weight	Power supply
CE-S-5E CE-S-5E-MP	100-30000L/h	500L	500kg	Single	Approx. 460kg Approx. 480kg	200-240 AC, 1 phase, 3.1 kVA for agitator type: 7.6kVA
CE-S-6E CE-S-6E-MP		1000L	1000kg		Approx. 490kg Approx. 510kg	
CE-S-7E CE-S-7E-MP		2000L	2000kg		Approx. 580kg Approx. 600kg	
CE-T-5E CE-T-5E-MP	100-10000L/h	500L	500kg	Twin	Approx. 480kg Approx. 500kg	
CE-T-6E CE-T-6E-MP		1000L	1000kg		Approx. 510kg Approx. 530kg	
CE-T-7E CE-T-7E-MP		2000L	2000kg		Approx. 600kg Approx. 620kg	

Model name of feeder with vertical agitator changes from E to VE.

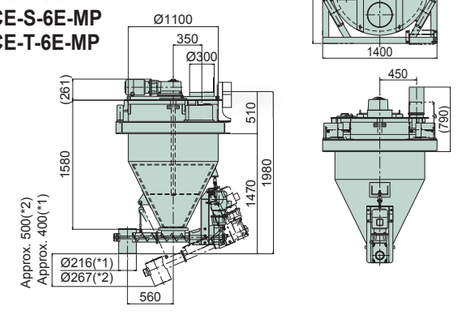
The models having "-MP" are feeder mounted panel type.

Dimensions

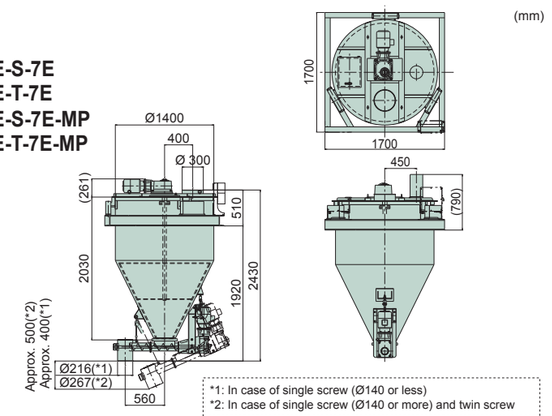
CE-S-5E
CE-T-5E
CE-S-5E-MP
CE-T-5E-MP



CE-S-6E
CE-T-6E
CE-S-6E-MP
CE-T-6E-MP



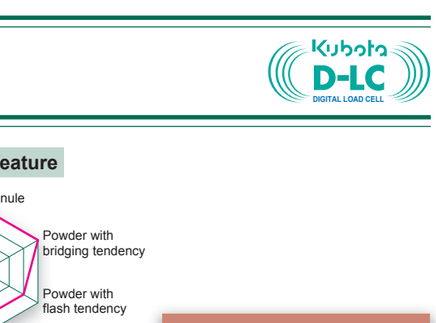
CE-S-7E
CE-T-7E
CE-S-7E-MP
CE-T-7E-MP



(mm)

*1: In case of single screw (Ø140 or less)
*2: In case of single screw (Ø140 or more) and twin screw

Construction



Pump type Liquid Weighing Feeder LWF

Kubota D-LC DIGITAL LOAD CELL

Material example

- Various liquids such as demineralized water, flame retardant, lubricant, oxidation inhibitor and anti-static agent

Temperature

- Room temperature to maximum 120°C thermal retention

Maximum discharge pressure

- 7 MPa (gear pump), 15 MPa (plunger pump)

Principal specifications (Gear pump type standard specifications*)

Model	Flow rate range (L/h)	Hopper capacity (L)	Weighing capacity (kg)	Feeder weight (kg)	Power supply
CE-L-1D	1.0- 80	25	25	Approx. 120	200V AC, 3 phase, power line 1.5 to 4.5 kVA, heater 2 kVA
CE-L-2D	6.0-160	50	50	Approx. 150	
CE-L-3D	6.0-250	100	100	Approx. 210	200V AC, 3 phase, power line 1.5 to 11 kVA, heater 3 kVA

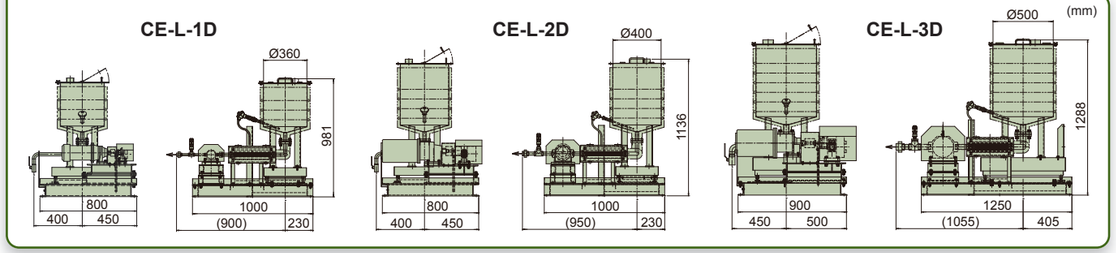
*Gear pump will be selected for the liquid with its viscosity over 100cP.
*For the liquid with its viscosity under 100cP, another feeding methods like plunger pump would be recommended.

Panel mounted controller type only

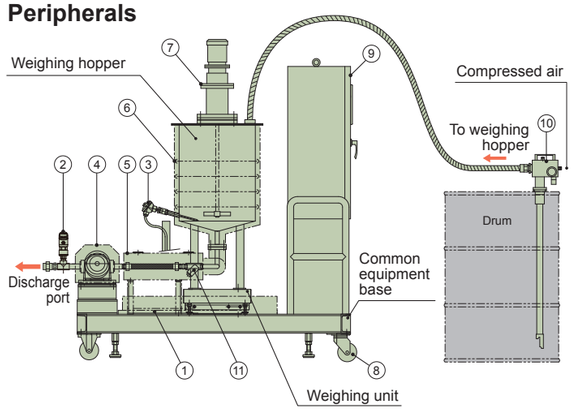
Feature

- Feeding various kinds of liquid with loss-in-weight control. Ratio control with other feeders is available.
  Some materials are difficult to handle in solid form, but can be fed easily in liquid form.

Dimensions (Gear pump type standard specifications)



Peripherals



Standard devices

① **Oil pan**
Prevents liquids from spilling on floor.
② **Pressure switch**
Measures discharge pressure.
③ **Liquid temperature thermocouples in weighing hopper**
Measures liquid temperatures in weighing hopper.
④ **Heater and thermal insulation cover for gear pump**
Maintains preset liquid temperature.
⑤ **Heater and thermal insulation cover for flexible hose**
Maintains preset liquid temperature.
⑥ **Heater and thermal insulation cover for weighing hopper**
Maintains preset liquid temperature.

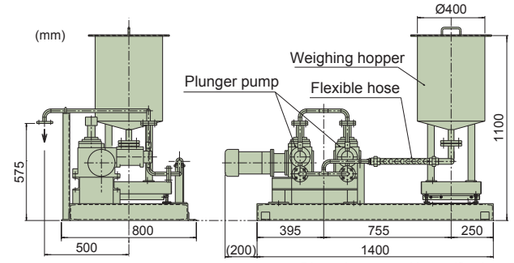
Option

⑦ **Agitator**
Agitates liquid in weighing hopper for uniform temperature distribution.
⑧ **Caster type dolly (with stopper)**
Equipped to make unit portable.
⑨ **Unitized control panel**
Unit main body and control panel are unitized.
⑩ **Liquid charge pump**
Supplies weighing hopper with liquid from drum.
⑪ **Strainer**
Prevents the contamination by filter and protect the pump.
⑫ **Ambient temperature type**
Specification of ambient temperature liquid is also available, which exclude the devices of ③ to ⑥.

Practical example equipped with plunger pump

(Different flow rates and discharge pressures are available)

Applicable material	Demineralized water Specific gravity:1, Viscosity: 1 cP, Liquid temperature: room temperature
Flow rate range	4-25kg/h
Discharge pressure	7MPa
Hopper capacity	50L
Weighing capacity	60kg
Feeder weight	Approx. 250kg
Power supply	200V AC, 3 phase, 2.5 kVA

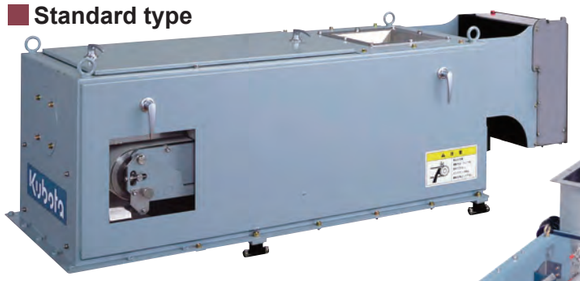


Dimensions vary with specifications.

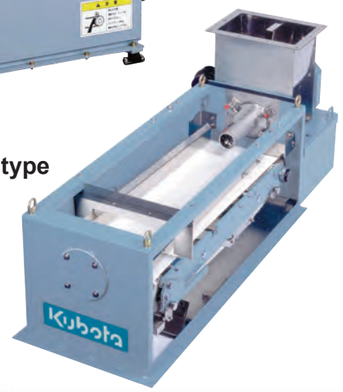
Belt type Weighing Feeder B-WF

Kubota D-LC DIGITAL LOAD CELL

Standard type

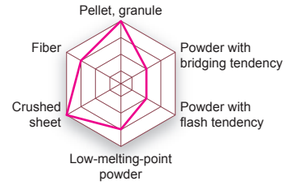


Combination type

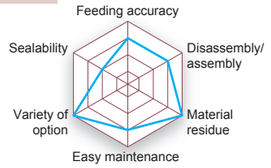


Material example

- Pellet
- Resin powder
- Crushed sheet
- Glass fiber
- Grain
- Beans



Product feature



Feature

- Large flow capacity with space saving unit.
- Inspection and cleaning is easy because the removal of conveyor belt is easy.

Standard type

Model	Flow rate range	Belt width	Feeder weight	Power supply
BW-150-1E BW-150-1E-MP	2- 1500L/h	150mm	Approx. 100kg Approx. 120kg	200-240V AC, 1 phase, 0.5 kVA
BW-300-1E BW-300-1E-MP	4-10000L/h	300mm	Approx. 130kg Approx. 150kg	
BW-500-1E BW-500-1E-MP	10-26000L/h	500mm	Approx. 170kg Approx. 190kg	

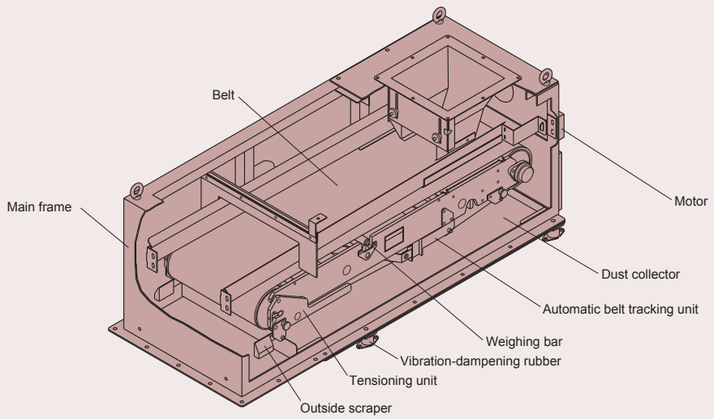
The models having "-MP" are feeder mounted panel type.

Combination type

Model	Flow rate range	Belt width	Screw feeder		Feeder weight	Power supply
BW-300-2E BW-300-2E-MP	4-2200L/h	300mm	Single screw	Fixed	Approx. 190kg Approx. 240kg	200-240V AC, 1 phase, 1.8 kVA
BW-300-3E BW-300-3E-MP	4- 450L/h		Twin screw			
BW-300-4E BW-300-4E-MP	4-2200L/h		Single screw	Movable	Approx. 250kg Approx. 270kg	
BW-300-5E BW-300-5E-MP	4- 450L/h		Twin screw			

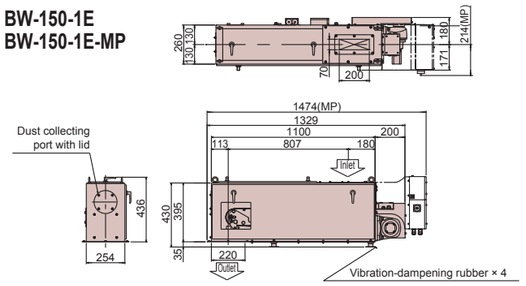
The models having "-MP" are feeder mounted panel type.

Construction

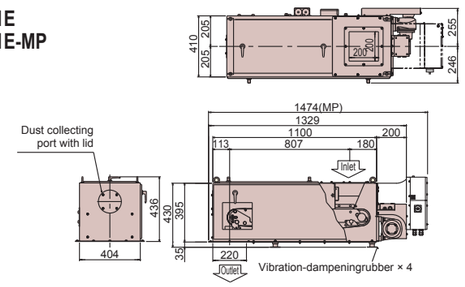


Dimensions

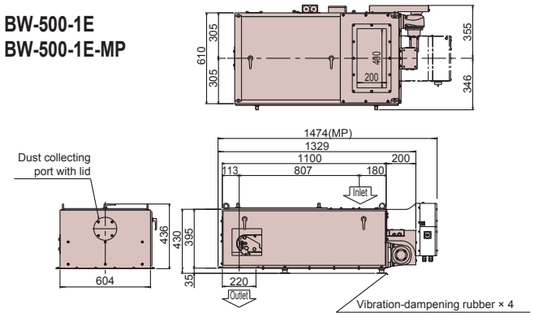
BW-150-1E
BW-150-1E-MP



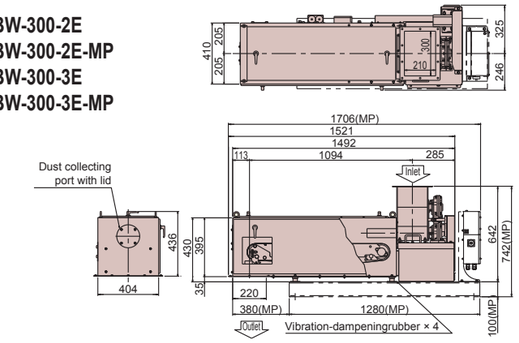
BW-300-1E
BW-300-1E-MP



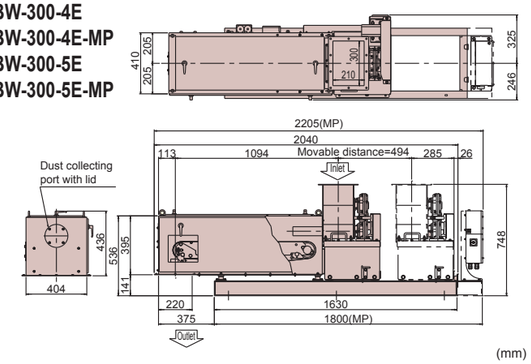
BW-500-1E
BW-500-1E-MP



BW-300-2E
BW-300-2E-MP
BW-300-3E
BW-300-3E-MP



BW-300-4E
BW-300-4E-MP
BW-300-5E
BW-300-5E-MP



(mm)

Options for Belt Weighing Feeder

Option List

① Charge Hopper

Select from the following 3 types. (Available in other capacity ratings, too.)
50 L: Mounts directly on the inlet of the Belt Weighing Feeder.
100 L/200 L: Supported so that its weight is not applied to the inlet of the Belt Weighing Feeder.

② Level Switch

Installed on the charge hopper. Can be selected by quantity (upper or lower limit detection) or type (paddle, vibratory or electrostatic).

③ Sampling Nozzle

Installed on the charge hopper. Used to sample bulk material from the charge hopper.

④ Inlet Slide Gate

Installed on the lower end of the charge hopper. Closing the inlet slide gate enables you to adjust the Belt Weighing Feeder while the bulk material is still in the charge hopper.

⑤ Inlet Flexible Joint

Flexibly connects the Belt feeder inlet to upstream unit.
Made of nylon with an SUS304 internal chute.

⑥ Outlet Flexible Joint

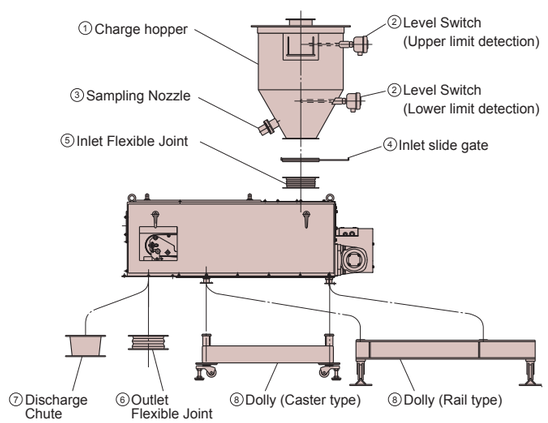
Flexibly connects the lower unit to the Belt Weighing Feeder's outlet. Made of nylon with an SUS304 internal chute.

⑦ Discharge Chute

Used to directly connect the Belt Weighing Feeder's outlet to the downstream.

⑧ Dolly

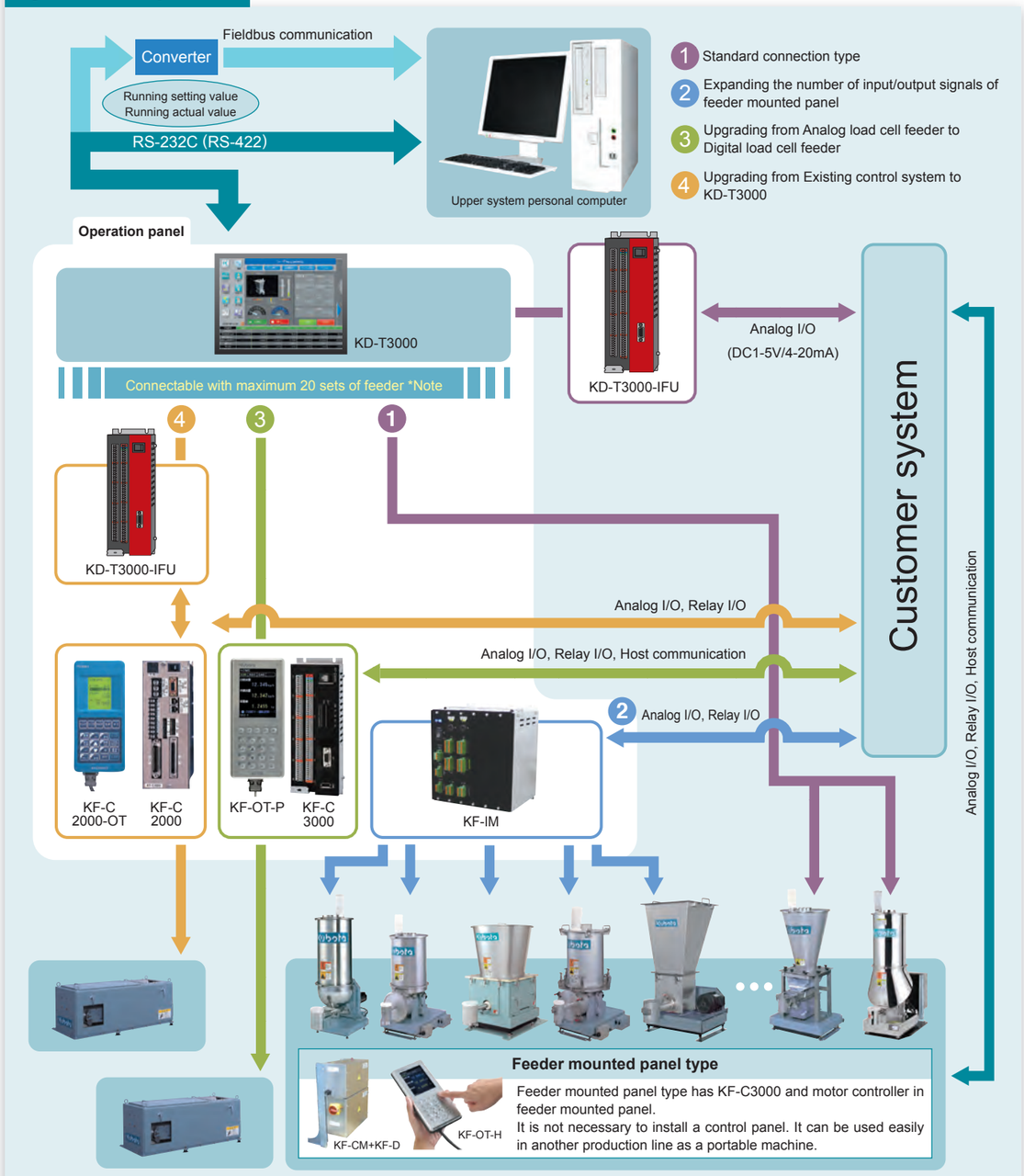
Makes maintenance and cleaning, as well as relocating the feeder to another line, easier. Selectable between caster and rail types.



Control system

The need of Engineering Plastics is increasing for automobile and home electronics parts, due to their excellent characteristics like strength, heat resistance and ease of processing.
According to this situation, Engineering Plastics are becoming more varied and the type and number of materials in production processes are increasing.
For manufacturing high quality plastics, it is necessary not only to feed materials in high accuracy, but to control the quality by the traceability of the production parameters. KUBOTA offers the best control system to the customer, making the most of our know-how for material feeding systems.

System component



*Note: KF-RP repeater unit is necessary for connecting over 11 units.

Machine Side Panel System

1 Total cost saving

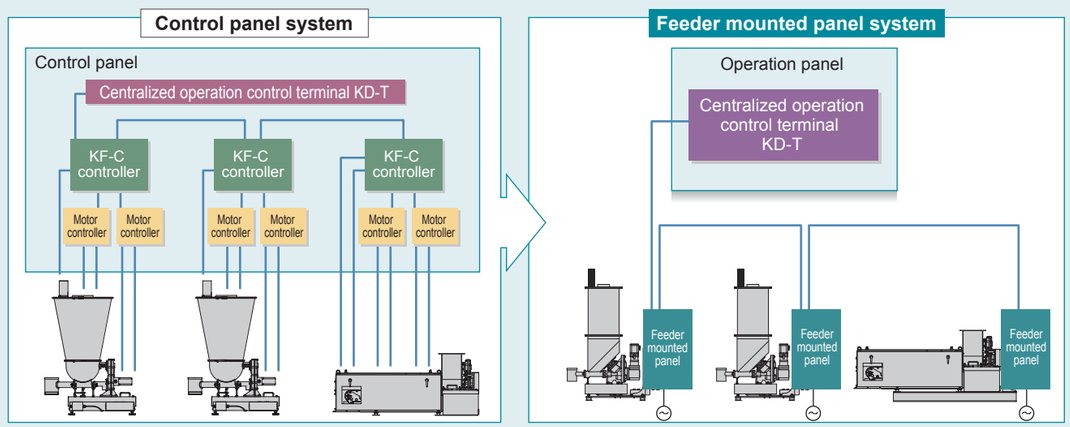
Trim down electrical wiring	Significantly reduces electrical wiring materials and electrical installation by the customer because the electrical wiring is completed between the KF-M3500 and the feeder.
Space effective	A large sized control panel is not required even if two or more feeders are installed.
Easy expansion	Minimizes modification of the wiring panel and electrical installation when installing additional feeders.

2 Flexible layout

Only a few electrical cables go out from the feeder mounted panel with the connectors installed at the cable ends. Simply disconnecting the connectors lets you conveniently change the production layout.

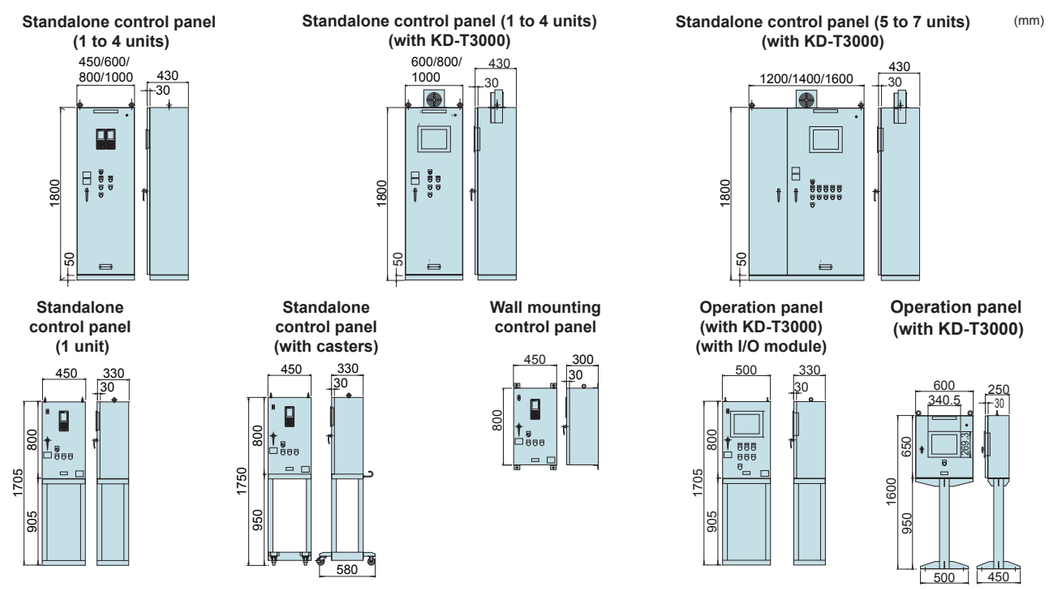
3 Easy to start up

Feeder mounted type realize easy installation and quick start up, because cable wiring between the feeder and the feeder mounted panel has already completed.



Control panel external dimensions

(mm)



Control system

KF-M Feeder mounted panel

KF-M is a feeder mounted panel including controller for loss in weight feeder and belt weighing feeder.
It realizes space and wire cable saving, combining a feeder and controller into one unit.

KF-CM+KF-D

KF-M3500

Specifications

Item		Description	
Model		KF-CM+KF-D	KF-M3500
Available models		NX,CE-W/S/R/T/M,B-WF	CE-V
Built-in controller	Feeder controller	KF-C3000	
	Driver controller	Sensorless servo amplifier X 2 (Max.)	Electromagnetic feeder controller
Weight signal input part	Internal resolution	1/4,190,000 (Max.)	
	Load cell	Digital load cell X 4 (Max.)	
Input signal from outside	Analog input	DC 1~5V/4~20 mA X 3ch (photocoupler isolation) Allocatable to every application freely	DC 1~5V/4~20 mA X 1ch (photocoupler isolation) Allocatable to every application freely
	Relay input	DC 24V X 12ch (photocoupler isolation) Allocatable to every application freely	DC 24V X 4ch (photocoupler isolation) Allocatable to every application freely
Output signal to outside	Analog input	DC 1~5V/4~20 mA X 3ch (photocoupler isolation) Allocatable to every application freely	DC 1~5V/4~20 mA X 1ch (photocoupler isolation) Allocatable to every application freely
	Relay output	DC 24V X 12ch (external power, photocoupler isolation) Allocatable to every application freely	DC 24V X 4ch (external power, photocoupler isolation) Allocatable to every application freely
Interface	USB	USB interface X 1ch, reading or writing of various settings	
	Host communication	RS-485 X 1ch (Not able to use with KD-T3000) Communication of settings and performance data are available	RS-232C/RS-422/RS-485 X 1ch Communication of settings and performance data are available
Peripheral devices connected		KF-OT Operation terminal, KD-T3000 Centralized operation control terminal, KF-IM I/O Module	
Control mode		Continuous running manual mode, Continuous running auto mode, Batch running manual mode, Batch running auto mode	
Error detection		Feeding error, Motor error, DLC communication error, Analog I/O error etc	
Alarm detection		Flow maximum alarm, Flow minimum alarm, Deviation error, Communications error	
Operational conditions		Temperature: -10~50°C Humidity: 95% RH or less (at 25°C) [No condensation is allowed]	
Design conditions		Temperature: -20~70°C Humidity: 95% RH or less (at 25°C) [No condensation is allowed]	
Power supply		1 phase AC200~240V±10%(50Hz/60Hz)	1 phase AC200~220V±10% (50Hz/60Hz)
Protection		IP65	
Dimensions (mm)		KF-CM: 304(W)×161(H)×128(D)mm	300(W) X 335(H) X 150(D) / 300(W) X 335(H) X 170(D)
		KF-D: 304(W)×202(H)×156(D)mm	
Weight		Approx. 10kg	Approx. 13kg

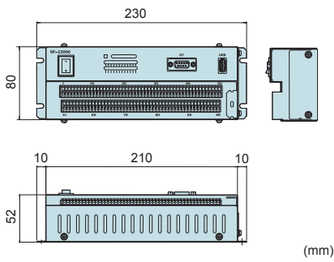
KF-C3000 Controller

KF-C3000 controller is available for loss in weight feeder, belt weighing feeder, constant feed weigher and conveyor belt scale.
Stable feeding performance is realized by P/I control.

Specifications

Item		Description
Available models		Loss-in-weight Feeder, Belt Weighting feeder, Constant feed weigher, Conveyor belt scale
Weight signal input part	Internal resolution	1/4,190,000(Max.)
	Load cell	Digital load cell X 4(Max.)
Control output part	Control output	DC 0~10V(photocoupler isolation) RS-485 X 1ch
Input signal from outside	Speed pulse input	DC 5/12V(photocoupler isolation)
	Analog input	DC 1~5V/4~20 mA X 3ch (photocoupler isolation) Allocatable to every application freely
	Relay input	DC 24V X 12ch (external power, photocoupler isolation) Allocatable to every application freely
Output signal to outside	Analog output	DC 1~5V/4~20 mA X 3ch (photocoupler isolation) Allocatable to every application freely
	Relay output	DC 24V X 12ch (external power, photocoupler isolation) Allocatable to every application freely
Interface	USB	USB interface X 1ch, reading or writing of various settings
	Host communication	RS-485 X 1ch (Not able to use with KD-T3000) Communication of settings and performance data are available In case other than sensorless servo, RS-232C / RS-422 / RS-485 X 1ch Communication of settings and performance data are available
Peripheral devices connected		KF-OT Operation terminal KD-T3000 Centralized Operation Control terminal
Control mode		Continuous running manual mode, Continuous running auto mode, Batch running manual mode, Batch running auto mode
Error detection		Feeding error, Motor error, DLC communication error, Analog I/O error etc
Alarm detection		Flow maximum alarm, Flow minimum alarm, Deviation error, Communications error
Operational conditions		Temperature: -5°C~45°C Humidity: 85% RH or less (at 25°C) [No condensation is allowed]
Design conditions		Temperature: -20°C~70°C Humidity: 85% RH or less (at 25°C) [No condensation is allowed]
Power supply		DC18~24V±10%
Dimensions (mm)		230(W) X 80(H) X 52(D)
Weight		Approx. 1kg

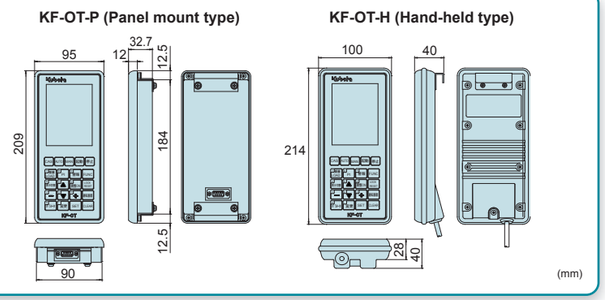
External dimensions



KF-OT Operation terminal

KF-OT is used for feeder running and the external communication settings Easy to check the feeder running situation (actual flow, alarm, etc), with Color LCD display. KF-OT is available in Panel mount or Hand-held types depending on installation requirement.

External dimensions



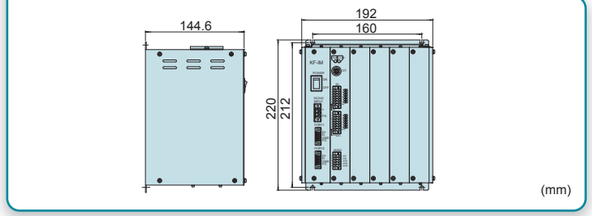
Specifications

Descriptions		KF-OT-P (Panel mount type)	KF-OT-H (Handy type)
Display	Display method	Color LCD with LED back light	
	Effective display area	62mm X 83mm	
	Resolution	240 X 320 dots	
	Language	Japanese, English, Chinese, Korean	
Operation key	Number key	1~9, period	
	Running key	Run, Stop	
	Others	Shortcut key for Running mode, Error, Alarm etc	
Communication specification	Connection	RS-485	
	Connection distance	Under 200 m	
	Power supply	From controller	
Operational Conditions		Temperature: -5~+50°C, Humidity: 85%RH or Less (No condensation is allowed)	
Design conditions		Temperature: -20~+70°C, Humidity: 85%RH or Less (No condensation is allowed)	
Protection		—	IP65
Weight		Approx. 0.6kg	Approx. 0.5kg

KF-IM Module

I/O module expands the number of input/output signals, used when the number of I/O ports of the standard equipment are insufficient.
It can be connected to DCS or PLC which is installed remote from KF-M3500.

External dimensions



Specifications

Item		Description
Number of additionally installed I/O boards		5 boards (Each board can be connected with one KF-CM+KF-D/KF-M3500.)
Input/output signals (per 1 board)	Analog input	DC 1~5V/4~20mA X 2ch (photocoupler isolation) Ability to allocate each usage freely
	Relay input	DC 24V X 12ch (external power, photocoupler isolation) Ability to allocate each usage freely
	Analog output	DC 1~5V/4~20mA X 3ch (photocoupler isolation) Ability to allocate each usage freely
	Relay output	DC 24V X 12ch (external power, photocoupler isolation) Ability to allocate each usage freely
Power supply		DC 24V±5%
Operational conditions		Temperature: -5°C~45°C Humidity: 85% RH or less (at 25°C) [No condensation is allowed]
Design conditions		Temperature: -20°C~70°C Humidity: 85% RH or less (at 25°C) [No condensation is allowed]
Dimensions (mm)		192(W) X 220(H) X 144.6(D)
Weight		Approx. 3kg

Control system

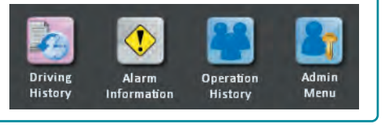
KD-T3000 Centralized operation control terminal

Centralized operation terminal to control multiple feeders. It is able to control and monitor multiple feeders from one panel by using a Color LCD touch panel for all operation functions. Easy operation by using icons. Language is selectable to English, Chinese, Japanese or Korean. Features include; high quality control, reliability, ease of maintenance and supports efficient production control.

Operation: Icons on display make it easy to use.

1 Enhanced operation by use of Icons on the screen layout.

Operational buttons are Icons on the display. Less operator training required due to advanced graphic design of the display for easy understanding of its operation and functions.



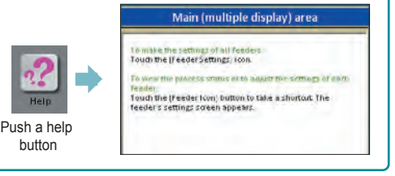
2 Multilingual: Easy to change between languages English / Chinese / Japanese / Korean.

Can be operated in four languages in standard specification. Language can be changed at any time even during operation. This is useful to train multilingual operators how to operate the unit.

Push a language button　　Displaying language selection window

3 Help function: Each screen has this function to give an explanation on its operation.

Basic function and operation can be understood without the need of an operation manual.



Push a help button

Quality control: Long-term data logging

Five years of data can be recorded. Data can contribute to resolving problems by identifying conditions of the system over the long term.

The data can be seen and edited at the customer's computer with output via a USB thumb drive in CSV file format.

■ Sample of edited logging data

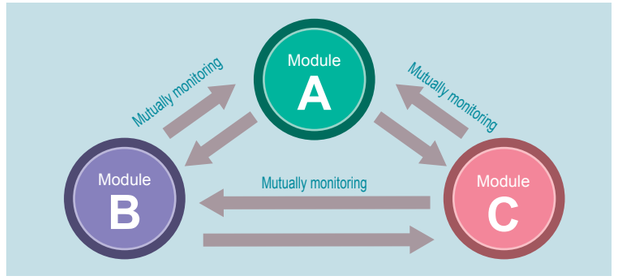
			No.1 CE-W-3		
Date	Time	Worker	Flow set (kg/h)	Actual flow (kg/h)	Integrati (kg)
Sep.30	1:00	Tanaka	50	50.000	7.29
	4:00	Tanaka	50	50.000	157.29
	7:00	Tanaka	50	50.000	307.29
	10:00	Tanaka	50	50.000	457.29
	13:00	Tanaka	50	50.000	607.29

*Available logging data : Date and Time, Flow-SV (kg/h), Flow-PV (kg/h), Integrated Counter (kg), Deviation (kg), Output Control (%), Weight (kg)/Load (%), in operation

Reliability: Supports stable measurement

Program surveillance system: Multiple program modules monitor each other. When a program is stopped, the surveillance system restores it.

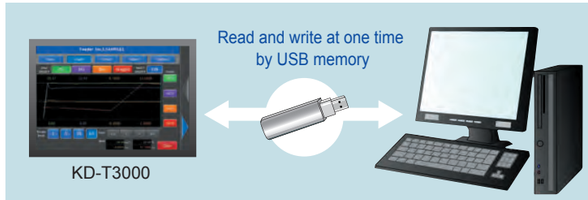
System preservation: Uses OS system for industrial built-in PC which has a function of system preservation. This prevents the corruption of system files when unexpected electrical power problems occur.



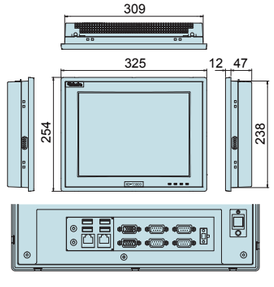
Ease of maintenance:

Reassurance in case of trouble

Back-up parameters of connected controller can be easily stored via USB thumb drive. If a system problem occurs, restoration of the back-up parameters can be done immediately.



Dimensions



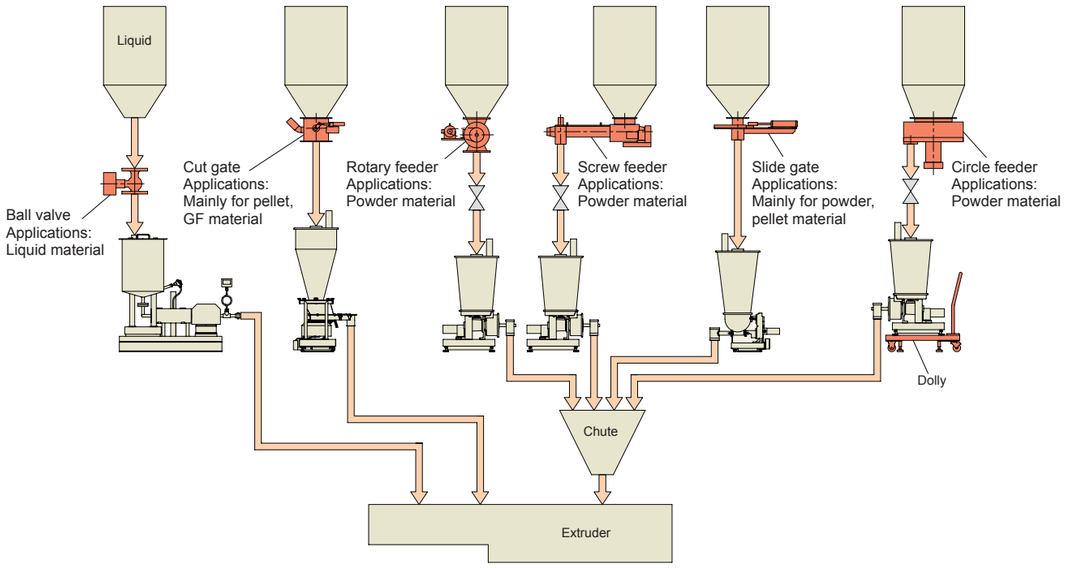
Specifications

Item		Description
Number of feeders controllable		20 feeders/line (Connected by 3000 series)
Monitor screen		12.1- TFT Color LCD with touch panel
Major functions	Setting	Setting combination (999 kinds), mixing ratio setting, setting of individual flow rate.
	Operation	Start/Stop (Line), Start/Stop (Individual), Local/Remote, Feed terminal automatic control, Production process stop, Low-low stop
	Graph display	Flow-PV rate, MV, deviation, load rate
	Alarm record	Record of alarm events (Memory capacity:1000 events) Graphic display for Flow-PV, output control, deviation, and load rate after alarm
	Languages	Japanese/English/Chinese/Korean
	Memory Items	Flow-SV, Flow-PV, Integrate, output control, deviation, load rate to internal memory. These data can be output via USB device in CSV file format.
CPU		1.86GHz
Memory		4GB
Memory device		32GB SSD
OS		Windows Embedded OS
Dimensions (mm)		325(W) X 254(H) X 59(D)
Panel cut dimensions (mm)		311 X 240
Dust and Waterproof		IP65 compliant (Front panel only)
Power supply		DC 12~24V
Operational conditions		Temperature: 0 - 50°C Humidity: 85% RH or less (No condensation is allowed)
Design conditions		Temperature: -20 - 60°C Humidity: 85% RH or less (No condensation is allowed)
Weight		3.3kg (7.27lb)
Interface	LAN	10/100/1000Mbps (RJ-45) X 2 port
	USB	4 port
	Host communication	RS-232C X 1 port
Option	Analog input/output	Total flow-SV input, Total flow-PV output, DC1~5V/4~20mA

Option

Optional equipment for loss in weight feeder

Equipments for refilling material to loss in weight type feeder. Many types of feeding equipments such as screw feeder, rotary valve feeder, circle feeder are available,

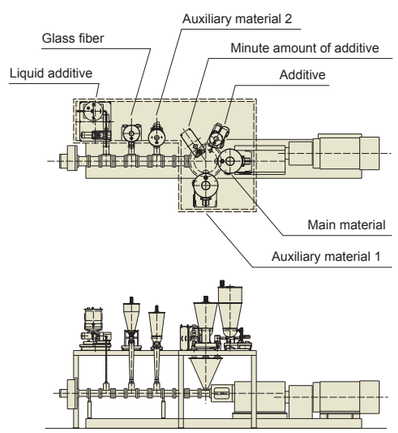


System layout

Newly developed engineering plastic materials and their compounding processes mean that the kinds of materials fed into an extruder are increasing.
In the past, two or more kinds of material are pre-blended by mixer and supplied to a feeder. However, due to emergence of high performance feeders, direct feeding of several kinds of material becomes common and generally accepted recently.

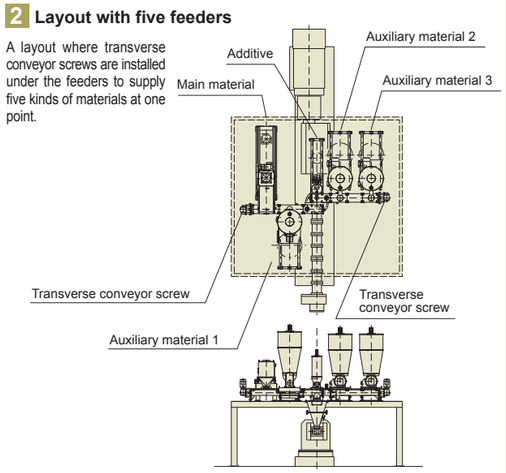
Layout

1 Layout with seven feeders



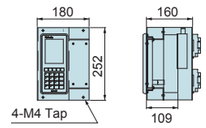
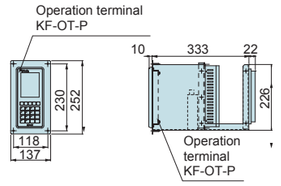
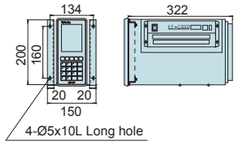
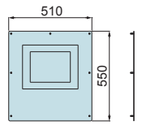
2 Layout with five feeders

A layout where transverse conveyor screws are installed under the feeders to supply five kinds of materials at one point.



Replacement guide

Upgrade existing old model of Feeder controllers, Centralized operation control terminal and Operation terminal to the latest model is available easily.

Existing type	Profile of portion to be replaced and replacement procedure	The date of discontinue	Alternative type
KF-C82	Existing control panel needs to be replaced.	Jan, 1989	All panel
KF-C88	 Use the same place where KF-C88 controller was installed. Mount KF-C3000, KF-OT-P and specified power supply on bracket to the same dimensions as for KF-C88. Existing control panel cut-out does not need to be modified.	Dec, 1996	KF-C3000 KF-OT-P
KD-B85 KD-B85A	 Use the same place where KD-B85 or KD-B85A controller was installed. Mount KF-C3000, KF-OT-P and specified power supply on bracket to the same dimensions as for existing controller. Existing control panel cut-out does not need to be modified.	Sep, 1993	KF-C3000 KF-OT-P
KD-B90 KD-B90N	 For installing the KF-OT-P, use the same place where KD-B90(N) controller was installed. Mount KF-C3000 and specified power supply on bracket to install in existing panel.	Mar, 1996 Dec, 1996	KF-C3000 KF-OT-P
KD-T1000	 Use the specified bracket to replace from KD-T1000.Existing control panel cut-out needs to be modified by cutting.	Sep, 2003	KD-T3000
KD-T2000	Use the place where KD-T2000 controller was installed by expanding the panel cut-out size by 10mm width.	Oct, 2010	KD-T3000
KF-C1000 KF-C1000-OT	Use the bracket to replace from KF-C1000. The dimensions KF-C1000-OT and KF-OT-P are same. In case of using the existing analog load cell in the feeder machine, A/D converter is necessary. 2K-3K cable is available for easy replacement of existing wiring.	Sep, 2003	KF-C3000 KF-OT-P
KF-C2000 KF-C2000-OTⅡ	Use the bracket to replace from KF-C2000. The dimensions KF-C2000-OTⅡ and KF-OT-P are same. In case of using the existing analog load cell in the feeder machine, A/D converter is necessary. 2K-3K cable is available for easy replacement of existing wiring.	Oct, 2009	KF-C3000 KF-OT-P
KF-M2500	Remove existing KF-M2500 and set KF-CM+KF-D (KF-M3500 for CE-V) to the same place, and replace a drive unit of feeder, such as a motor. In case of using the existing analogue load cell in the feeder machine, A/D converter (optional) is necessary. Operation terminal KF-M2500-OT can be used with new KF-M3500, however we recommend to replace to KF-OT-H at the same time because of its superior features in use.	Oct, 2009	KF-CM+KF-D (KF-M3500 for CE-V)

Service and spare parts supply after obsolescence

We try to offer service and spare parts of obsolete model for seven years after obsolescence. However, please note that there are possibilities to stop parts supply after this period, depending on some situation changes. Please contact our sales department in detail.

Plastic pellet screening system – PLATON series

PLATON contribute to product quality improvement by automation of screening process against foreign particle and contamination in plastic pellet.

SUPER
PLATONII

Sample of materials and contaminants which can be handled by SuperPLATONII

Benefits

		Before	After
1	Reduce the workload of operators	● It takes a lot of time for manual laber inspection. ● Physical load like eye strain is large by long and fine manual work.	● Screening in short time. (Maximum 1000 kg per hour capacity) ● Automation screening.
2	Quality improvement	● Human eye screening causes screening occur. ● Different screening standard by each inspection operator. ● Defective products are released to the market.	● Screening criteria becomes clear and stable. ● Release of defectives can be prevented by screening before shipment. ● Quality problem can be found at the real time basis in the production process.
3	Cost reduction	● Manual inspection to all products (or sampled) is costly.	● Reduce the labor cost of inspection.

Materials and contaminants which can be detected

	White color - Translucent		Transparent		Black color		Colored	
Material color								
Contaminants	Discolored (Dark contaminant)*1	Micro black spot (under0.1 mm)	Discolored (Dark contaminant)*1	Micro black spot (under 0.1 mm)	Discolored (Bright contaminant)*2	Micro contaminants	Discolored (more than one color of contamination)	
								
Super PLATONII	+++	+++	++	+++	+++	++	++ (Color filter can be used.)*3	

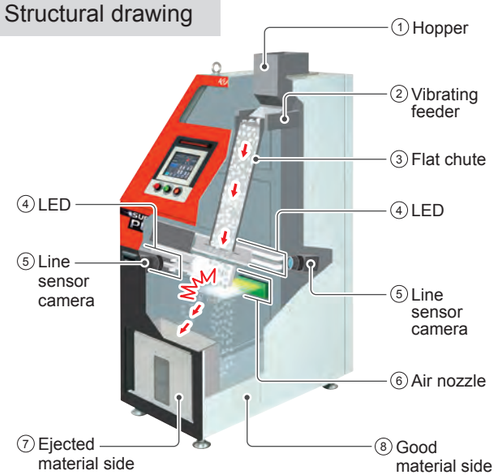
*1 Contaminant which is darker than good material *2 Contaminant which is brighter than good material
*3 Screening accuracy will improve with these options, depends on the contrast of color between good material and contaminant.

Screening procedure

Flow	① Put material into a hopper. ② Vibration feeder feeds material. ③ Material falls through a chute.
Detect	④ Material is lit up by LED. ⑤ Two cameras inspect material from front and rear.
Discharge	⑥ Eject material which is detected as contaminations by air. ⑦ Collect ejected material. ⑧ Good materials flows down to good material side.

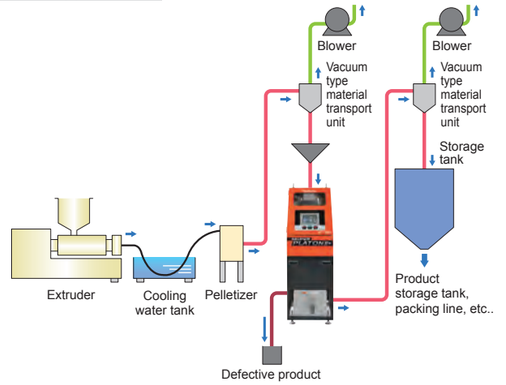
How to eject contaminants

Structural drawing

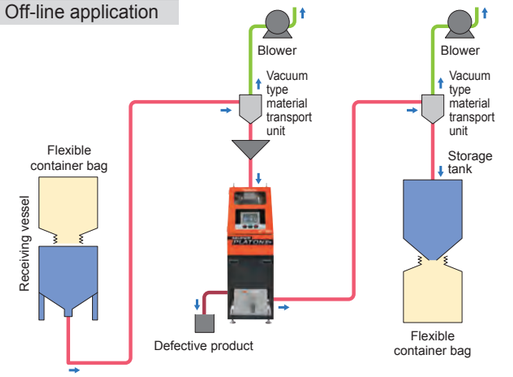


Sample application

In-line application



Off-line application



*Process capacity: 400 – 1,000kg/h

FTC Feeder Technical Center

Feeder Technical Center

We have abundant experience of material feeding over 30 years history in our Feeder Technical Center.
We can provide the best feeding solution for customer based on over 10,000 test reference.

Education system for high quality service

We train our overseas service engineers at our Feeder Technical Center in Japan.
Our qualified service engineers provide you the best service support in your country.

Feeder Questionnaire

Please fill in this questionnaire to enable us better discussion and proposal.

Date	
Company name	

Material	Name					
	Bulk density	☐ —			☐ None	
	Shape	☐ Fine powder	☐ Granule	☐ Pellet	☐ Chopped strand	☐ Others ( ) ☐ None
	Size	☐ mm		☐ None		
	Angle of repose	☐ °		☐ None		
	Flushing tendency	☐ None	☐ Weak	☐ Middle	☐ Strong	☐ None
	Bridging tendency	☐ None	☐ Weak	☐ Middle	☐ Strong	☐ None
	Elasticity etc.	☐ Elastic	☐ Fragile (Easy to break)			☐ Abrasion property
	Melting temperature	☐ ℃	☐ None			
	Material temperature in use	☐ Ambient	☐ ℃			
	Others	☐				

Reference	Test reference	☐ None	☐ Yes (Kubota's test No.)	☐ No information
		☐ None		
	Reference of Feeder usage	☐ Kubota feeder	Model ( )	
			Kubota order number ( )	
		☐ Other brands	Brand name ( )	
			Model name or feeder type ( )	

Model	Your request	☐ None		
		☐ Screw type	☐ Belt type	☐ Vibratory type ☐ Others ( )
	Flame explosion proof	☐ Kubota feeder ( )		
		☐ None	☐ Yes (Explosion proof type)	

Main specifications	☐ Continuous	☐ Gravimetric	☐ Volumetric
	Flow rate range	kg/h	
	Feeding accuracy	%	(Accuracy of volumetric type is out of scope of our warranty.)
	☐ Batch	☐ Loss-in-weight batch control	☐ Gain-in-weight batch control
	Batch size / time of one batch	g/ sec	
	Accuracy dispersion	± g/	

Note

(2015.9.29)