

Dissolving System for

Polymer & Solid particulate

GENERAL CATALOG



Polymer, sodium carbonate and powder automatic dissolver

Fruit of mixing • dissolving • fee technologies

Essential functional chemical agent 「Polymer」

to efficient water treatment or sludge dehydration,

which is high moisture absorption and difficult to handle if it contains moisture.

TOHKEMY Polymer auto dissolver has spent as polymer evolved, regardless of solid

or liquid, provides products to satisfy customers.

ding



Polymer & Solid particulate dissolving system



Powder polymer auto dissolver

PAD-Q・PAD-C Air ejector type 05~10



Liquid polymer auto dissolver

L/PAD 11~12



Sodium carbonate auto dissolver

SAD Screw feeder type 13~14



Powder auto dissolver

PAD-L Screw feeder type 15~16

Y/PAD Volumetric table feeder type 17~18



Powder auto feeder

YAF Volumetric table feeder type 19~20

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Features and selection of each model

Model	Features	Selection keyword
POLYMER	PAD-Q Powder polymer auto dissolver (Air ejector type) Powder feed by dry air. High accuracy flowrate proportional type corresponding to feed water rate fluctuation instantly.	◀ Powder polymer ▶ Pulse generating flow meter
	PAD-C Powder polymer auto dissolver (Air ejector type) Powder feed by dry air Reasonable model with constant flow valve type	▶ Powder polymer ▶ Constant flow valve
	L/PAD Liquid polymer auto dissolver Compact and easy operation applying powder dissolving techniques Applicable to outdoor installation.	▶ Liquid polymer ▶ Outdoor installation
SODIUM CARBONATE	SAD Sodium carbonate auto dissolver(Screw feeder type) The dissolver specialized in sodium carbonate Constant concentration by feed water flowrate proportional control.	▶ Sodium carbonate ▶ Inverter variable speed powder feeder
POWDER	PAD-L Powder auto dissolver(Screw feeder method) Feed rate control by load cell for any powder types. Advanced high accuracy auto dissolver with dissolving accuracy +/-5%.	▶ Powder polymer ▶ Powder including magnesium hydroxide ▶ Load cell
	Y/PAD Powder auto dissolver(Volumetric table feeder type) Compact auto dissolver with water feed constant valve method mainly for inorganic flocculant.	▶ Inorganic flocculants ▶ Powder including magnesium hydroxide ▶ Constant flow valve
	YAF Powder auto feeder(Volumetric table feeder type) Feeder mainly for inorganic flocculant. Stable feeding from fine powder to granular. Economical 60W motor	▶ Inorganic flocculants ▶ Powder including magnesium hydroxide ▶ Feeder only

Powder feeding test

We can test whether your powder can be fed by our product if you could send us sample. For details, please contact the sales in charge.

PAD-Q • PAD-C Series



Features

- Powder feeding by air ejector
- Dry air type having high reliability.
- Compact design with only one tank to save space(Indoor type).
- Selectable tank materials from PVC, SUS304 and FRP.
- Flexible arrangement including orientation corresponding to customers or on-site needs
- Easy maintenance
- Automatic operation just after installation.
- Easy operation
- Larger dissolving tank
3,000/4,000/5,000/6,000L are also available.

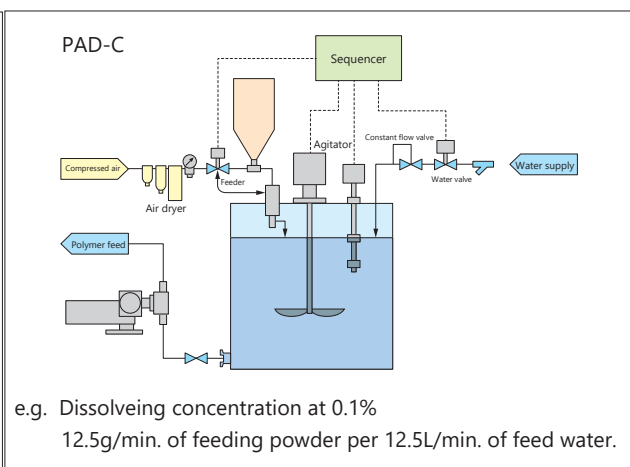
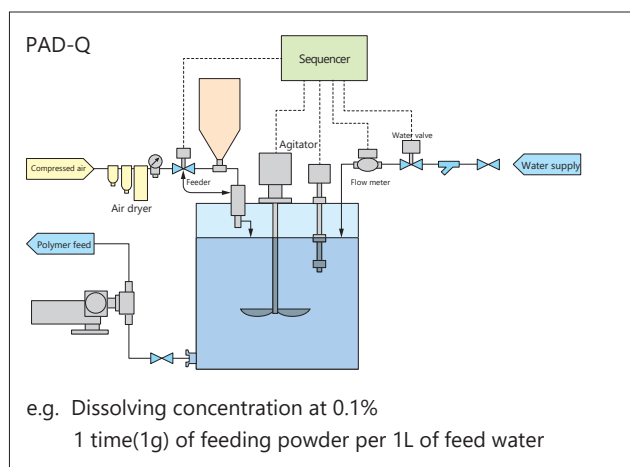
■ PAD-Q type: High accuracy flowrate proportional type

- ① Advanced model
- ② Equipped with the pulse-generating flowmeter to feed powder accurately against flow rate fluctuation.
- ③ Equipped with the powder sensor to detect powder error in advance of trouble.

■ PAD-C type: Constant flow feed type

- ① Reasonable model
- ② Feeding powder correctly to stable flowrate by using the constant flow valve.

Flow sheet



	PAD-Q type	PAD-C type
Dissolving concentration control	Pulse generating flow meter	Stable flow rate by the constant flow valve
Powder sensor	Standard	Option
Feeder	TAF2	TAF2
Agitator	Medium speed type with propeller blades	Medium speed type with propeller blades
Orientation change	Yes	Yes

Standard specification table

Model		PAD-4	PAD-8	PAD-20	PAD-40	PAD-80
Specifications						
Dissolving capacity ^{*1}		Standard 50L/h Max. 100L/h	Standard 80L/h Max. 160L/h	Standard 200L/h Max. 400L/h	Standard 400L/h Max. 800L/h	Standard 800L/h Max. 1,600L/h
Dissolving tank	Capacity ^{*2}	(Nominal)150L (Effective)100L	(Nominal)200L (Effective)160L	(Nominal)500L (Effective)400L	(Nominal)1,000L (Effective)800L	(Nominal)2,000L (Effective)1,600L
	Materials	PVC, SUS304, FRP				
Hopper capacity		8, 15L	8, 15L	15, 30L	30, 60L	30, 60L
Agitator		0.06kW	0.2kW	0.4kW	0.75kW	1.5kW
Feeder model		TAF2				
Concentration control	Q series	Flowrate proportional system by pulse generating flow meter				
	C series	Flowrate proportional system by constant flow valve				
Feeder capacity		Variable from 0.5 to 0.3g (1.0 to 6.0g) of polymer per 1L (2L) of feed water *3				
Feed air	D type	Compressed air 30NL/min × 0.49MPaG to 0.85MPaG				
	P type	Dry air 20NL/min × 0.1MPaG (supplied from the outlet of regulator)				
	R type	Dry air 20NL/min × 0.2MPaG to 1MPaG				
Feed water diameter		Rc 1/2				Rc 3/4
Feed water pressure		CE, C type/0.1~0.49MPaG Q, QX, QV type/0.1~0.70MPaG				
Solution outlet diameter		20A	20A	25A	32A	40A
Power source		AC200/200/220V 50/60Hz 3-phase				
Power consumption		150VA	300VA	650VA	1,100VA	2,200VA

*1 Dissolving capacity (L/h) shows 2 hours (Standard dissolving time) and 1 hour (Minimum dissolving time).

*2 Larger dissolving tank is available.

Dissolving tank capacity: Nominal 3,000, 4,000, 5,000, 6,000L

*3 () is for PAD-80 type

[Use conditions]

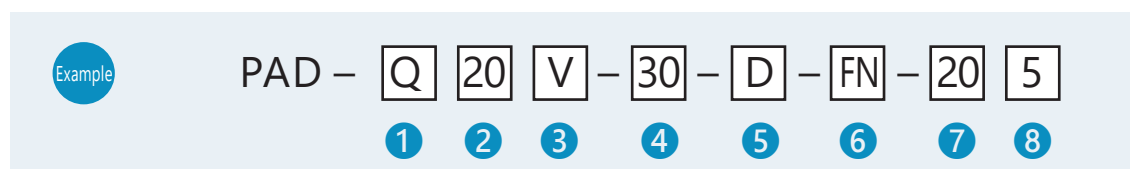
① This dissolver shall be installed indoors, but not in a humid place of underground

② For different voltages of power source, it shall be respectively designed.

③ Viscosity of solution up to 500 mPa·s.

④ Please contact us if you use crosslinked powder.

Model explanation



① Control system

CE/C	Constant flow
Q/QX	Flowrate proportional
QV	Flowrate proportional with touch screen (*1)

⑤ Power feeding air system

D	Compressed air <w/ dry air unit>
P	Dry air <w/o dry air unit>
R	Dry air <w/ regulator>

② Dissolving tank capacity (*2) (*3)

Model	Capacity	CE	C	Q/QX/QV
4	100L	—	○	○
8	200L	○	○	○
20	500L	○	○	○
40	1,000L	○	○	○
80	2,000L	—	○	○

⑥ Option (*2) (*5)

Model	Contents	CE	C	Q/QV	QX
Blank	Nil	—	—	—	—
A	Individual alarm output (Non-voltage output)	—	○	○	◎
F	Powder level sensor (Powder level lowering)	—	○	○	○
H	HH alarm (Abnormal full water)	—	○	○	○
N	Nozzle change (Position, size, addition)	○	○	○	○
O	Orientation change (Tank top, control panel, level gauge)	—	○	○	○
S	Powder sensor (Abnormal feeding)	—	○	◎	◎
Z	Others	—	○	○	○

③ Dissolving tank material (*2) (*4)

Model	Material	CE	C	Q/QX/QV
V	PVC	○	○	○
F	FRP	—	○	○
S	SUS304	—	○	○
FN	RP	—	○	○

⑦ Voltage(*6)

20	200V	40	400V	44	440V
22	220V	41	415V	38	380V

④ Hopper capacity (*2)

Model	Capacity	type 4	type 8	type 20	type 40	type 80
8	8L	○	○			
15	15L	○	○	○		
30	30L			○	○	○
60	60L				○	○

⑧ Frequency

5	50Hz
6	60Hz

(*1) Touch screen type QV conform to Q type.

(*2) ◎ : Standard, ○ : Applicable, - : N/A

(*3) FN type: PAD-4,8,20 only

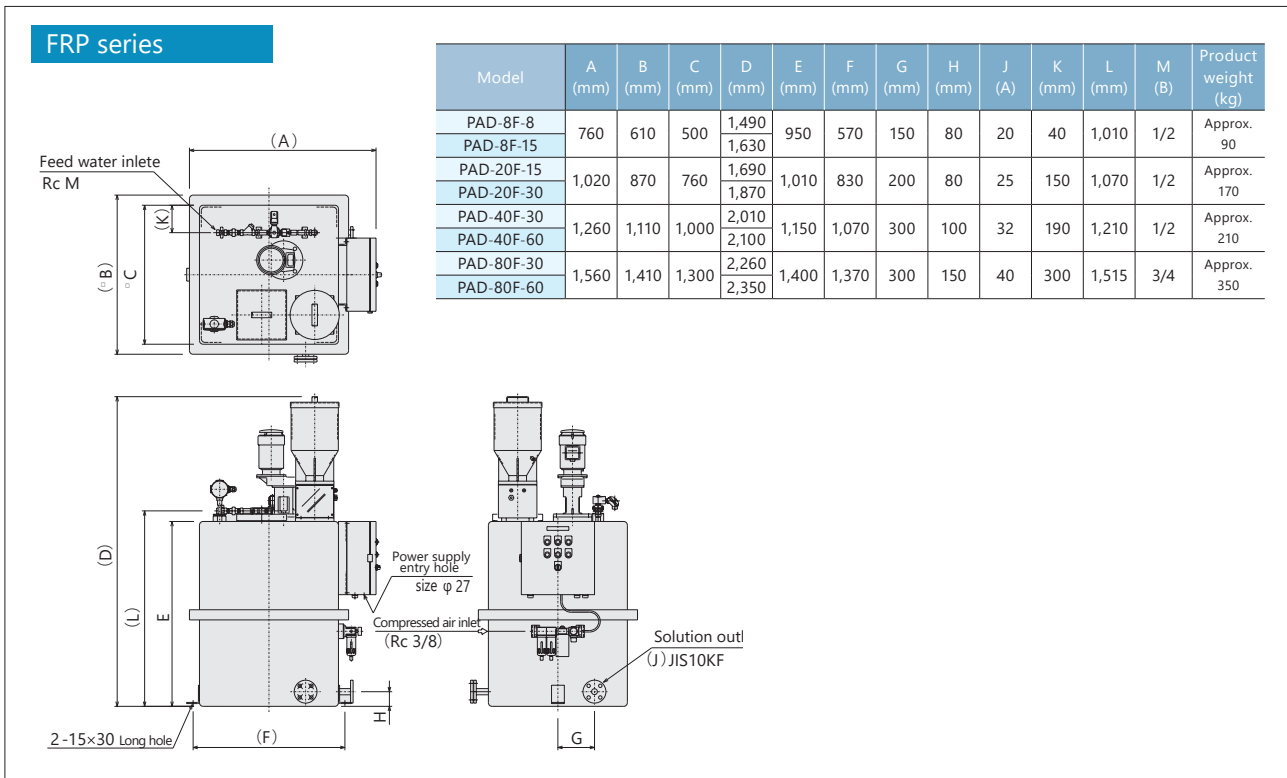
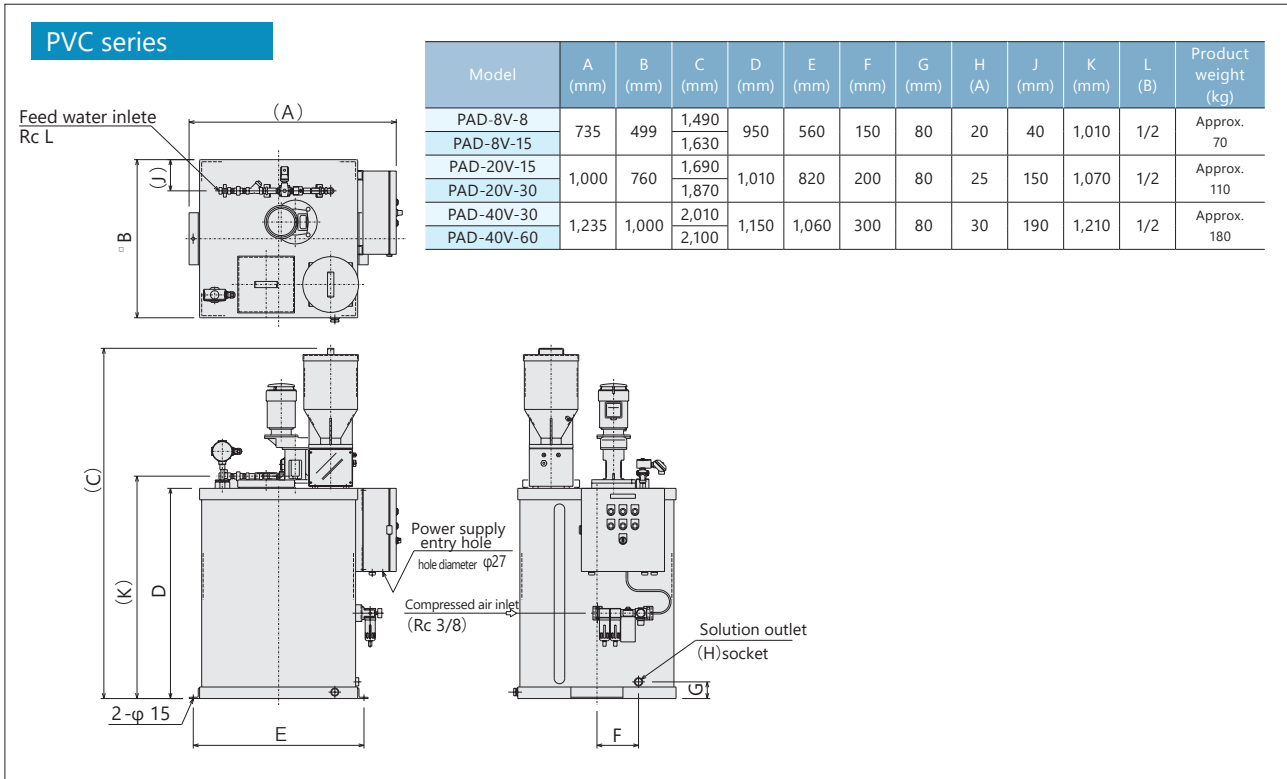
(*4) V: PAD-40 or smaller, FS: PAD-8~80

(*5) FN type: F, H, S only

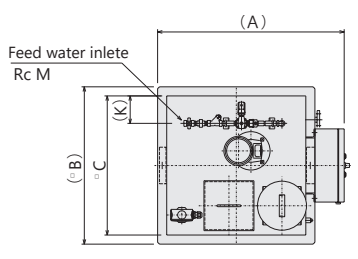
(*6) PAD-CE type: AC200/220V only

Powder polymer auto dissolver (air ejector type)

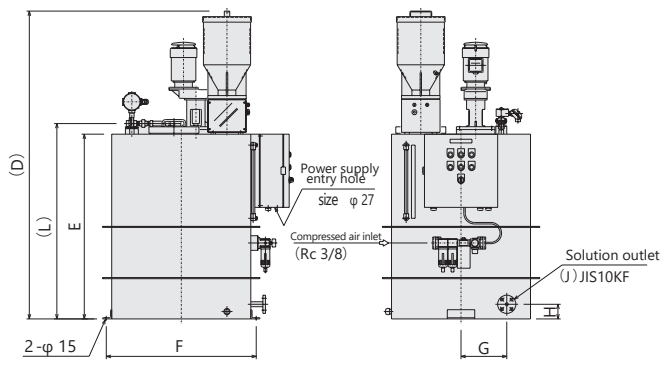
Dimensional outline drawing



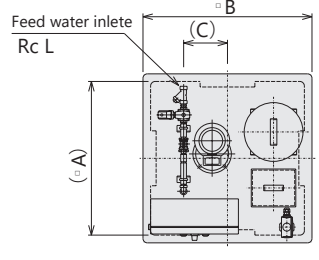
SUS series



Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (A)	K (mm)	L (mm)	M (B)	Product weight (kg)
PAD-8S-8	760	600	500	1,490	950	560	150	80	20	40	1,010	1/2	Approx. 190
PAD-8S-15				1,630									
PAD-20S-15	1,020	860	760	1,680	1,010	820	250	80	25	150	1,070	1/2	Approx. 240
PAD-20S-30				1,860									
PAD-40S-30	1,360	1,200	1,100	1,860	1,010	1,060	300	100	32	190	1,070	1/2	Approx. 350
PAD-40S-60				1,950									
PAD-80S-30	1,760	1,600	1,500	1,870	1,010	1,560	350	150	40	300	1,125	3/4	Approx. 550
PAD-80S-60				1,960									

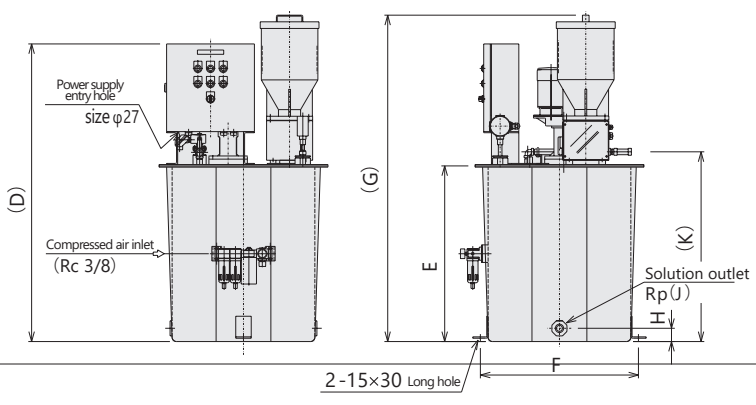


Molded FRP series



Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (B)	K (mm)	L (B)	Product weight (kg)
PAD-4FN-8	600	670	250	1,240	690	620	1,230	60	3/4	750	1/2	Approx. 50
PAD-4FN-15							1,370					
PAD-8FN-8	700	770	200	1,390	840	720	1,380	60	3/4	900	1/2	Approx. 60
PAD-8FN-15							1,520					
PAD-20FN-15	1,070	1,070	250	1,340	790	1,070	1,475	60	1	850	1/2	Approx. 110
PAD-20FN-30							1,650					

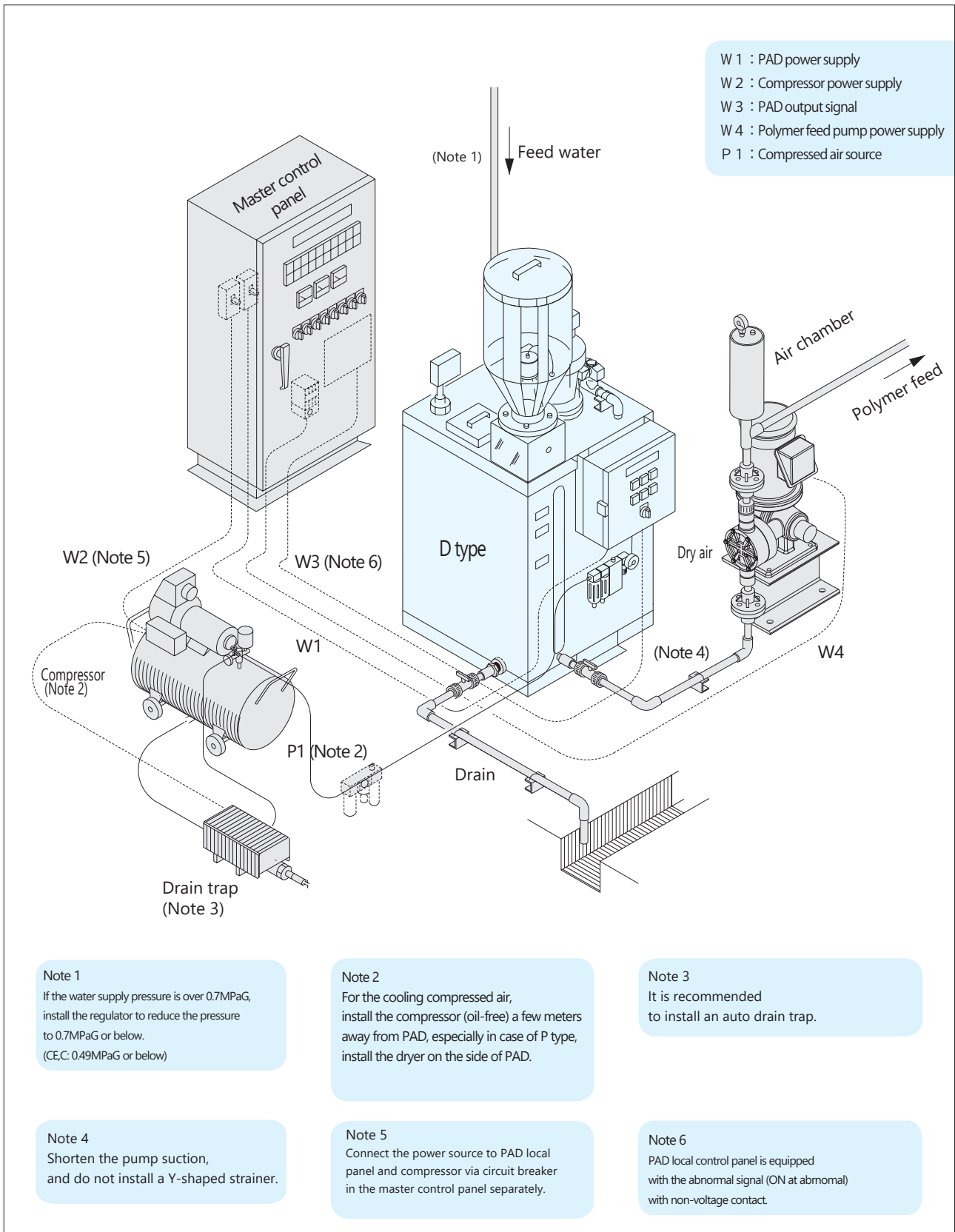
*1 Nozzle, Orientation chage are not applicable.
For details, please refer to model explanation ⑥ Option in P6.



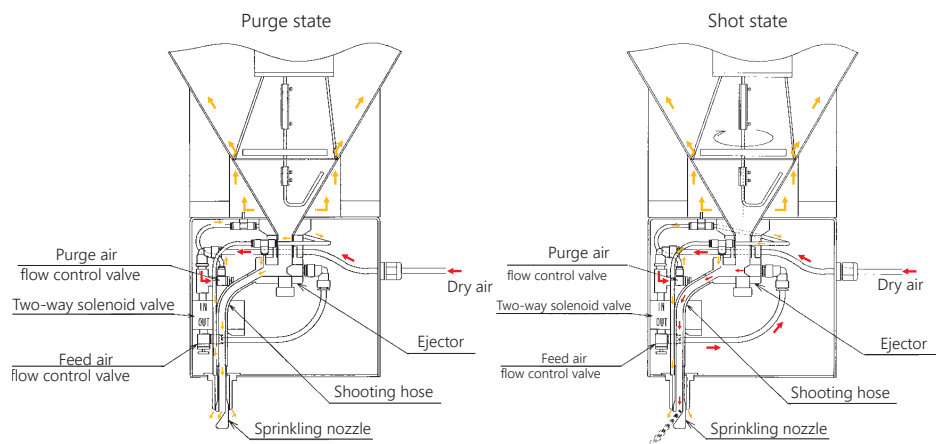
Powder polymer auto dissolver (air ejector type)

PAD system installation reference

The unit shall be basically installed indoor sheltered from wind and rain.
Please secure a space for operation and management surrounding the unit.



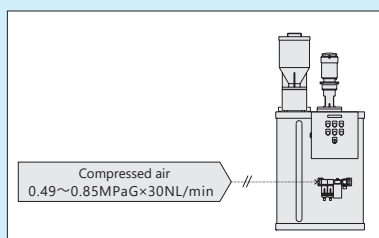
Feeder control system



- (1) Air from the air supply source branches at the inlet of two way solenoid valve. Through the purge air control valve, core purging for bleeding from the shooting hose and out purging for drying the end of sprinkling nozzle are usually effected.
- (2) The two way solenoid valve is controlled by the concentration timer preset in the sequencer, and every time the water feed pulse signal is inputted to this timer, it is excited for a specific time.
- (3) When the two way solenoid valve is excited, the valve opens to let air flow from the inlet to outlet, and the driving air is supplied into the air ejector for a specific time.
- (4) By the vacuum built up in the air ejector, a specified amount of powder guided from the hopper is supplied outside through the shooting hose.

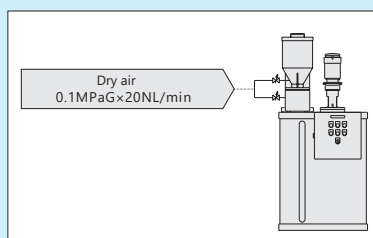
Powder air system

"D" type



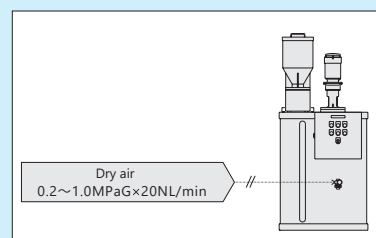
Well trusted system to feed the dehumidified compressed air by auxiliary dry air unit to the feeder from external air supply source. It is ideal system unaffected by moisture absorbency of chemical or installation place due to the dry air feeding to the both powder feed and hopper portion. The dry air unit is hollow fiber type needs no power source.

"P" type



The same method to feed the dry air to the feeder as D type. The dry air unit is not equipped with this PAD, the dry air is fed to the feeder directly from external. It is the system when there is a dry air system at site or a dry air unit to feed dry air to several PAD units. Please feed the dry air after reducing the pressure at 0.1MPaG.

"R" type



The same method to feed the dry air to the feeder as D type. The dry air unit is not equipped with this PAD, the dry air without reducing pressure is fed from external. This PAD is equipped with the regulator to reduce the pressure, used when there is a dry air system at site.

L/PAD Series



Features

- Liquid polymer dissolver applying powder dissolving techniques
- Corresponding to unitization in any combinations of undiluted solution tank, undiluted solution transfer pump and polymer solution injection pump.
- Wide variety tank with PVC, SUS304, FRP
- Applicable to outdoor installation
- Automatic operation just after installation
- Compact and easy operation

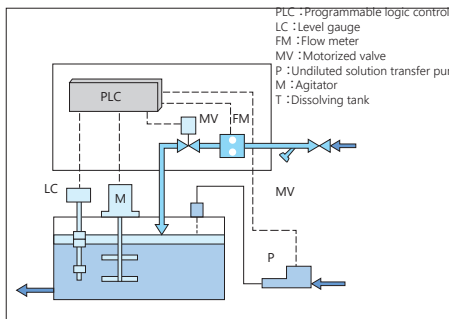
Standard specification table

Specification	Model	Dissolver tank				Undiluted solution tank (Option)		
		L/PAD-15	L/PAD-30	L/PAD-80	L/PAD-150	MT-50V	MT-100V	MT-200V
Max. dissolving capacity (*)		160/320L/h	320/640L/h	800/1,600L/h	1,600/3,200L/h	—	—	—
Tank	Capacity	(Nominal)100L (Effective)80L	(Nominal)200L (Effective)160L	(Nominal)500L (Effective)400L	(Nominal)1,000L (Effective)800L	(Effective)50L	(Effective)100L	(Effective)200L
	Material	PVC, SUS304, FRP				PVC, SUS304, FRP		
Agitator		0.1kW	0.2kW	0.4kW	0.75kW	0.06kW		
Control system		Q-T proportional (Feed water rate, operation time)						—
Piping connection	Feed water diameter	Rc1/2	Rc1/2	Rc3/4	Rc1	—		
	Solution outlet diameter socket	20A-JIS10KFF	25A-JIS10KFF	40A-JIS10KFF	65A-JIS10KFF	16A-TS socket		
	Feed water pressure	0.1MPaG ~ 0.7MPaG				—		
Power source		AC200/200/220V 50/60Hz 3 phase				AC200/200/220V 50/60Hz 3 phase		
Power consumption		150VA	300VA	650VA	1,100VA	100VA		
Standard accessories		Feed water block valve • Y-shaped strainer • injection nozzle 1 each.				Float level switch		

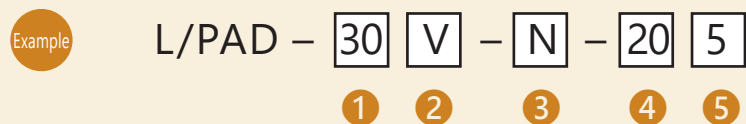
【Remarks】

- (1) Regarding the indication of dissolving capacity "A"/"B" (※), the dissolving time shall be 30 minutes for "A" and 15 minutes for "B". Generally "A" is for the emulsion and "B" for dispersion type.
- (2) The dissolution viscosity up to 500 mPa·s.

Flow sheet



Model explanation



1 Dissolving capacity

15	Emulsion 160L/h	Dispersion 320L/h
30	Emulsion 320L/h	Dispersion 640L/h
80	Emulsion 800L/h	Dispersion 1,600L/h
150	Emulsion 1,600L/h	Dispersion 3,200L/h

4 Voltage

20	200V
22	220V
40	400V
44	440V

2 Dissolving tank material

V	PVC
F	FRP
S	SUS304

5 Frequency

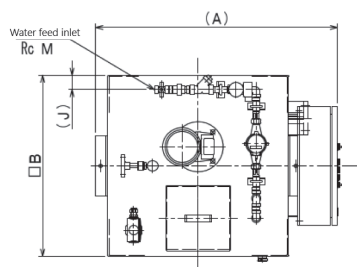
5	50Hz
6	60Hz

3 Option

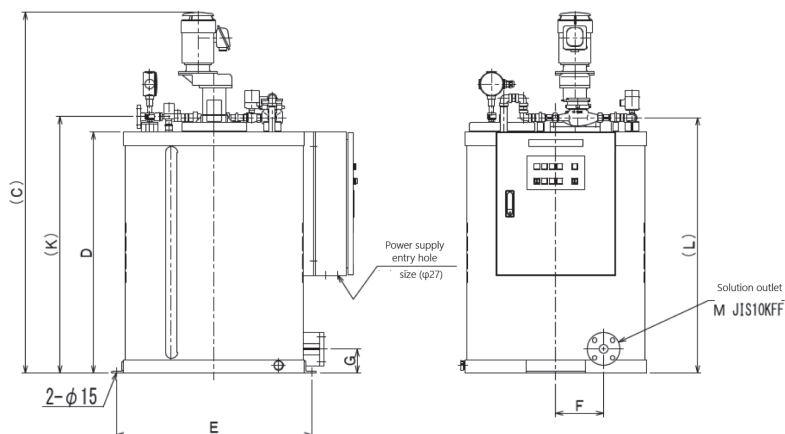
N	Nozzle change	
T	Additional dosing pump	
P	Additional undiluted solution tank unit	MT+ undiluted solution tank agitator
Z	Others	

Dimensional outline drawing

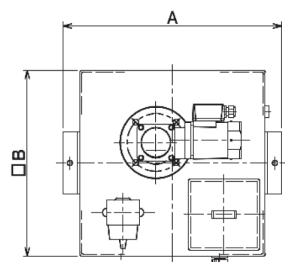
Dissolving tank



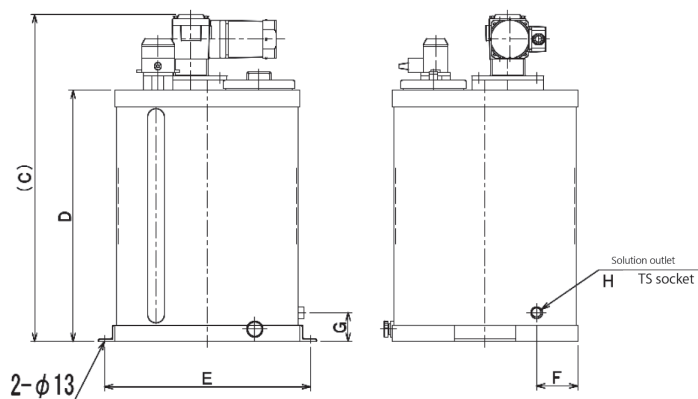
	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (A)	J (mm)	K (mm)	L (mm)	M (B)	Product weight (kg)
L/PAD-15V	570	450	1,025	610	500	115	80	20	30	675	670	1/2	Approx. 35
L/PAD-30V	755	499	1,390	950	560	150	80	25	30	1,015	1,010	1/2	Approx. 119
L/PAD-80V	1,015	760	1,515	1,010	820	200	100	40	60	1,075	1,070	3/4	Approx. 120
L/PAD-150V	1,205	1,000	1,740	1,150	1,060	300	150	65	100	1,215	1,215	1	Approx. 121



Undiluted solution tank(Option)



	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (A)	Product weight (kg)
MT-50V	450	372	645	460	420	100	70	16	Approx. 35
MT-100V	530	450	795	610	500	100	70	16	Approx. 119
MT-200V	580	499	1,135	950	550	100	70	16	Approx. 120



Sodium carbonate auto dissolver (Screw feeder type)

SAD Series

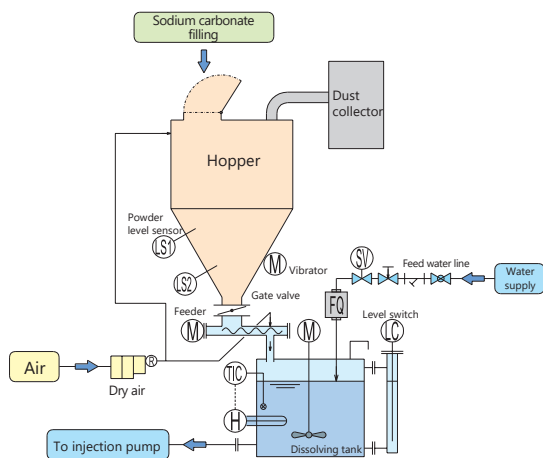


Features

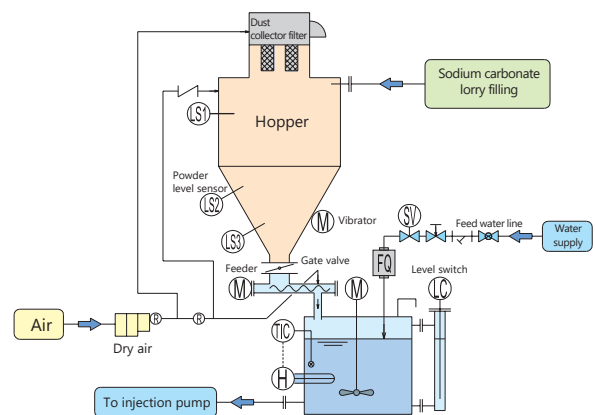
- Stable feeding by screw feeder method
- Constant concentration by inverter variable powder feeding from feed water rate proportional control
- Compact design with only one dissolving tank
- Wide variety tank and hopper materials
- Flexible arrangement including orientation corresponding to customers or on-site needs
- Equipped with dry air unit. No need for moisture-proof source.

Flow sheet

Manual filling type



Lorry filling type



Standard specification table

Model	SAD-0.1S-1.0S	SAD-0.2S-2.0S	SAD-0.3S-3.0S
Max. dissolving capacity	200L/h	400L/h	600L/h
Dissolving concentration (*1)	5%		
Powder feed method	Variable inverter Screw feeder type		
Hopper Standard : SUS304 Semi-standard : SS400	Effective 1.0m ³ φ1,200 mm×900 mmSH	Effective 2.0m ³ φ1,400 mm×1,300 mmSH	Effective 3.0m ³ φ1,600 mm×1,500 mmSH
Powder filling method	Manual filling + Suction type dust collector		Lorry filling + Pulse jet type dust collector
Bridge break method	Vibrator	Vibrator + Aeration + Reserve tankk	
Dissolving tank Standard : SUS304 Semi-standard : SS400,FRP	Effective 100 L □500 mm×600 mmH	Effective 200 L □600 mm×750 mmH	Effective 300 L □650 mm×900 mmH
Nozzle	Feed water inlet	Rc1/2	
	Solution outlet	25A — JIS10KF	20A — JIS10KF
	Air inlet	Rc3/8	
System Dimension Examples (*2)	□1500mm×4300mmH	□1700mm×4900mmH	□1850mm×5700mmH
Approx. product weight (*2)	Approx. 700kg	Approx. 800kg	Approx. 1,000kg
Installation	Indoor (Please contact us if it is outdoor)		
Utility	Water supply (*3)	8L/min×0.1 ~ 0.4MPa	20L/min×0.1 ~ 0.4MPa
	Feed air	60NL/min×0.5 ~ 0.85MPa	
Power source	AC 200/200/220 V 50/60 Hz 3 phase		
Power consumption	4,000VA	6,600VA	8,600VA
Standard accessories	Common base, Control panel, Water feed piping, Agitator, Level switch, Powder level gauge, Vibrator, Dust collector (bug filter) *4 Gate valve, Dry air unit, Temperature sensor, Heater for dissolving *5		
Option	Load cell (For residual powder management in the hopper) / Dosing pump		

*1 A guide for feeder capacity. It varies depending on powder property and state.

*2 It varies with or without pulse jet type dust collector or handrail etc.

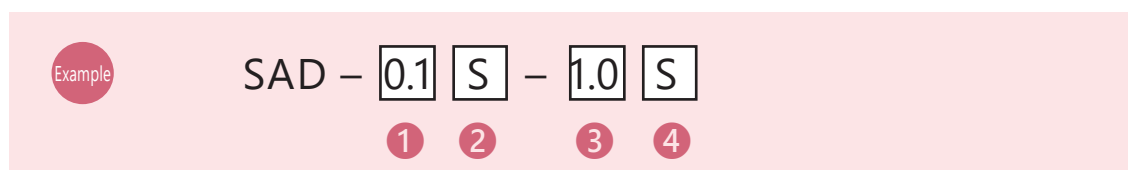
*3 If the hardness is high, calcium carbonate may be formed. Please supply dilution water to guide the hardness below 70.

*4 It prevents powder from swirling up when powder is filled to the hopper.

*5 It keeps the temperature of water constant to prevent sodium carbonate from undissolving.

*6 Please use Na₂CO₃ (Dense) for sodium carbonate powder.

Model explanation



① Dissolving tank capacity

Model	Capacity
0.1	100L
0.2	200L
0.3	300L
0.5	500L
1.0	1,000L

② Dissolving tank material

Model	Material
S	SUS304
SS	SS400

③ Hopper capacity

Model	Capacity
1.0	1,000L
2.0	2,000L
3.0	3,000L

④ Hopper material

Model	Material
V	PVC
F	FRP
S	SUS304

Powder auto dissolver (Screw feeder type)

PAD-L Series

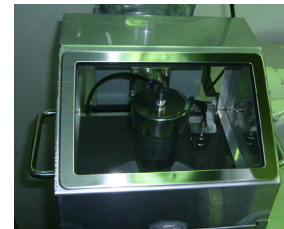


Features

- Not only for polymer powder but also various powder.
- Dissolving accuracy (+/-5%)
- Dissolving tank is more compact than a conventional type.
- Less scattering powder by the ejector
- Improved operability with the touch screen.

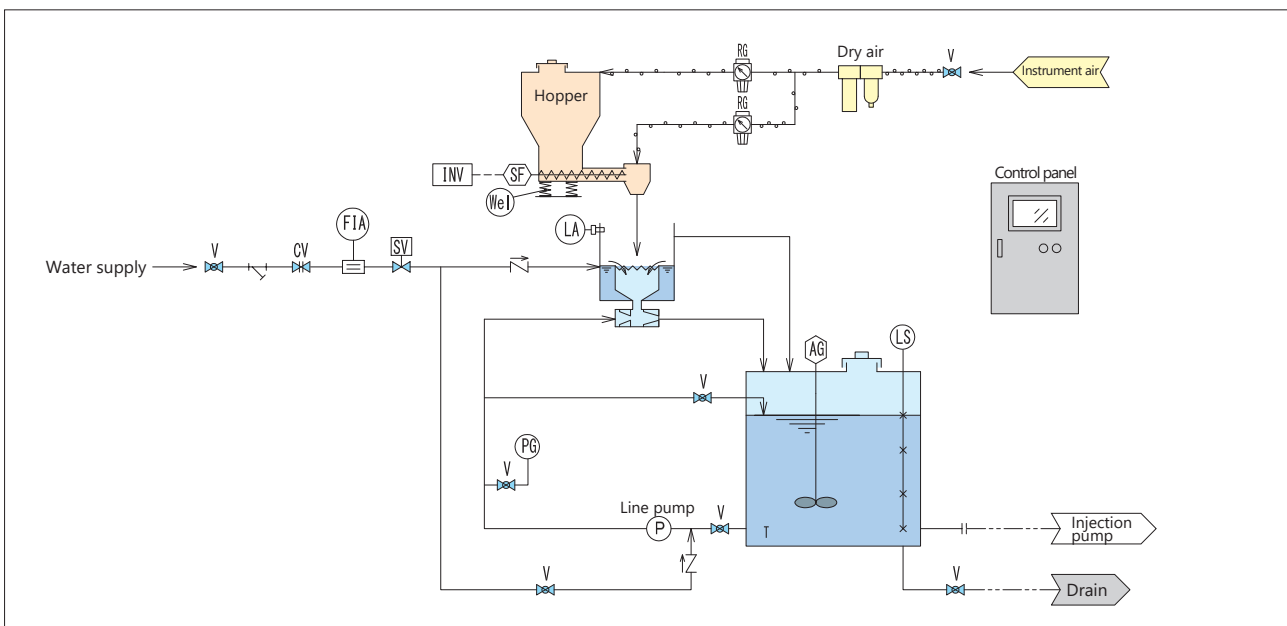


Screw feeder



Water film disperser

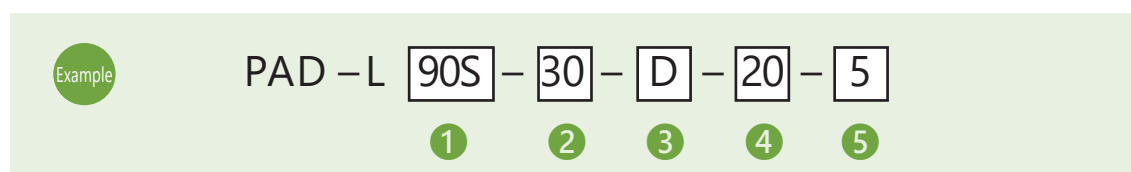
Flow sheet



Standard specification table

Items		Specifications
Dissolving capacity		900 [L/h] (In dissolving time 20 minutes)
Dissolving tank capacity • material		Effective 300[L] SUS304
Hopper capacity		Effective 30 • 60[L] Transparent PVC or SUS304
Screw feeder	Capacity	Maximum 1,200[g/min]
	Motor	90W (variable speed control by inverter)
Agitator	Revolution	200/240 [rpm] 50 / 60 [Hz]
	Motor	0.2 [kW]
Line pump	Capacity	75 [L/min]×25 [m]
	Motor	0.75 [kW]
Weight	Product weight	Approx 250[kg] (except for control panel)
	Operating weight	Approx 600[kg] (except for control panel)
Utility	Power source	AC 200/220V 50/60 Hz 3 phase
	Feed water	40 [L/min] x 0.2 [Mpa] or over
	Instrument air	5 [L/min]×0.49 [MPa]
Control method		PLC + touch panel

Model explanation



1 Dissolving capacity

90S	900L/h
-----	--------

2 Hopper capacity

30	30L
60	60L

3 Feed air system

D	Compressed air feed (w/ dry air)
P	Dry air feed (w/o dry air)
R	Dry air feed (w/ regulator)

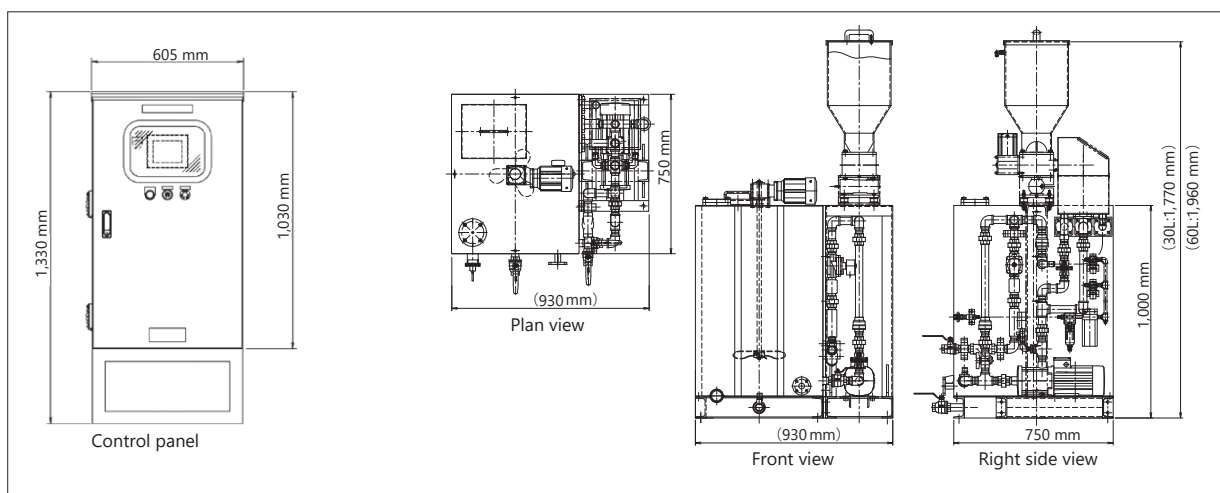
4 Voltage

20	200V	40	400V
22	220V	44	440V

5 Frequency

5	50Hz
6	60Hz

Dimensional outline drawing



Powder auto dissolver (Volumetric table feeder type)

Y/PAD Series



Features

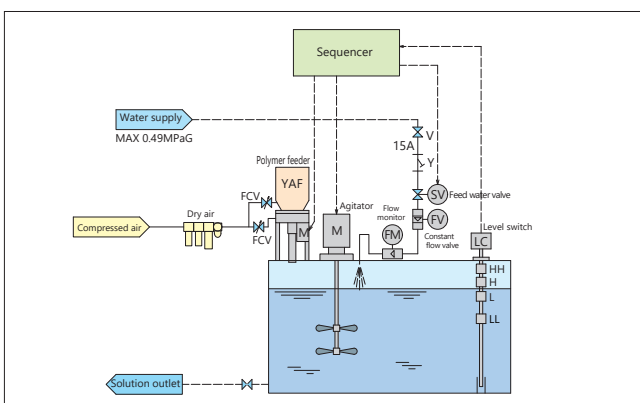
- Dissolver equipped with compact constant feeder (YAF) mainly for inorganic flocculant.
- Stable feeding by volumetric table feeder method.
- Compact design with only one dissolving tank.
- Economical 60W motor for feeder
- Safe and easy operation by stable control system developed by PAD for many years
- Automatic operation just after installation.

Standard specification table

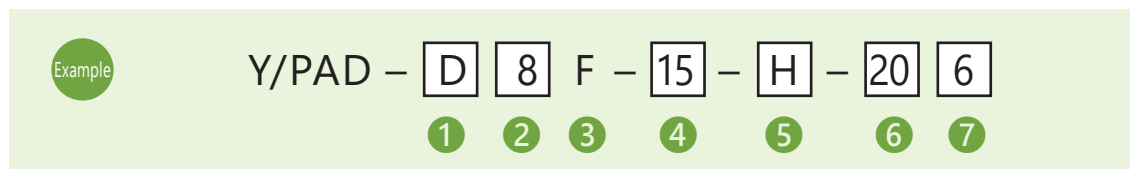
Specification	Model	Y/PAD-8F type	Y/PAD-20F type	Y/PAD-40F type
Dissolving capacity		Normal 80L/h Maximum 160L/h	Normal 200L/h Maximum 400L/h	Normal 400L/h Maximum 800L/h
Dissolving tank capacity		Nominal 200L Effective 160L	Nominal 500L Effective 400L	Nominal 1,000L Effective 800L
Hopper capacity		8, 15L	15, 30L	30, 60L
Dissolving tank material		FRP		
Agitator		0.2kW	0.4kW	0.75kW
Feeder model		YAF type		
Feeder capacity		Concentration 0.05~0.3% / Powder feed rate 525~3.150g/h		
Feed air	D	Compressed air 20NL/min × 0.49MPaG		
	P	Dry air 10NL/min × 0.05MPaG		
Feed water pressure		0.1 ~ 0.49MPaG		
Feed water rate		1,050L / h		
Water supply inlet diameter		15A		
Solution outlet diameter		20A	25A	32A
Power source		AC200/200/220V 50/60Hz		
Power consumption		300VA	650VA	1,100VA

* Dissolving capacity (L/h) shows 2 hours (Standard dissolving time) and 1 hour (Minimum dissolving time).

Flow sheet



Model explanation



1 Dissolving capacity

D	Compressed air feed type (w/ dry air)
P	Dry air feed type (w/o dry air) r

2 Dissolving tank capacity

Model	Capacity
8	160 L
20	400 L
40	800 L

3 Dissolving tank material

Model	Material
F	Molded FRP

4 Hopper capacity

Model	Capacity	8	20	40
15	15L	○		
30	30L	○	○	○
60	60L		○	○

5 Option

Blank	Nil
A	Individual output
F	Powder level sensor
H	w/ HH
N	Nozzle change
O	Orientation change
Z	Others!

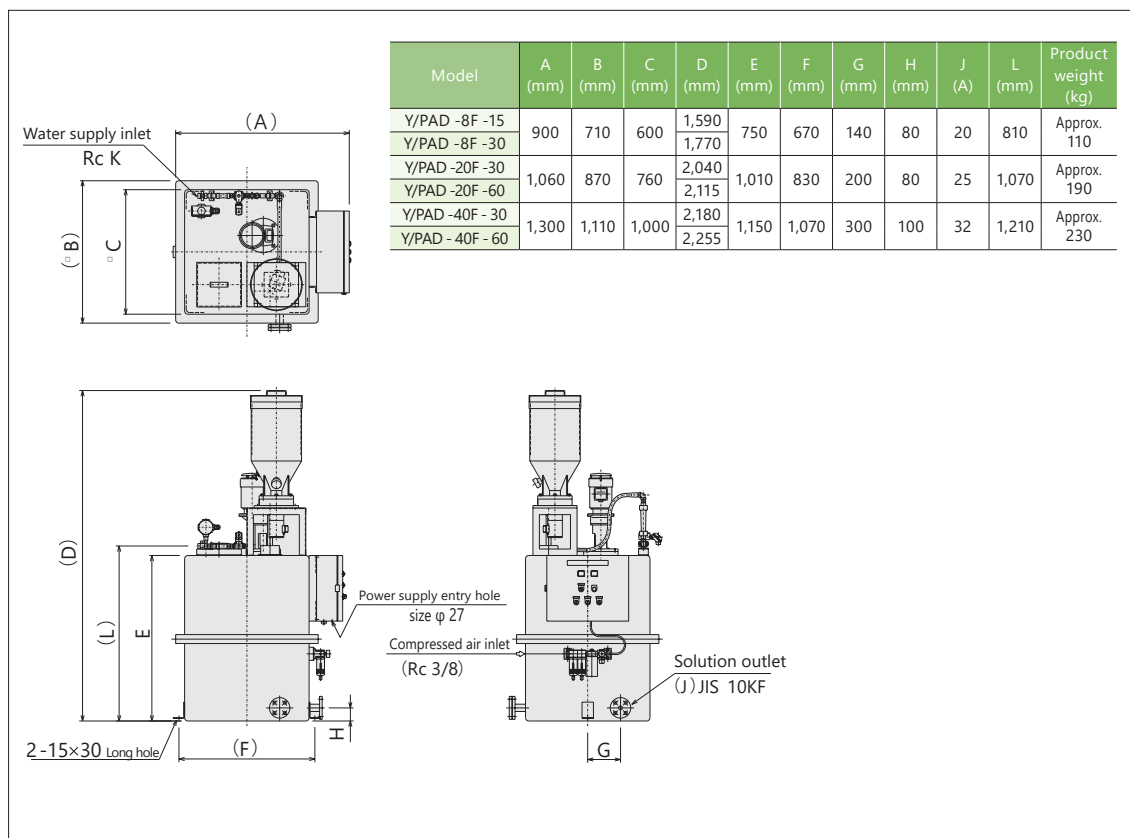
6 Voltage

	Voltage
20	AC200V
22	AC220V
38	AC380V
40	AC400V
41	AC415V
44	AC440V

7 Frequency

5	50Hz
6	60Hz

Dimensional outline drawing



Powder auto feeder (Volumetric table feeder type)

YAF Series



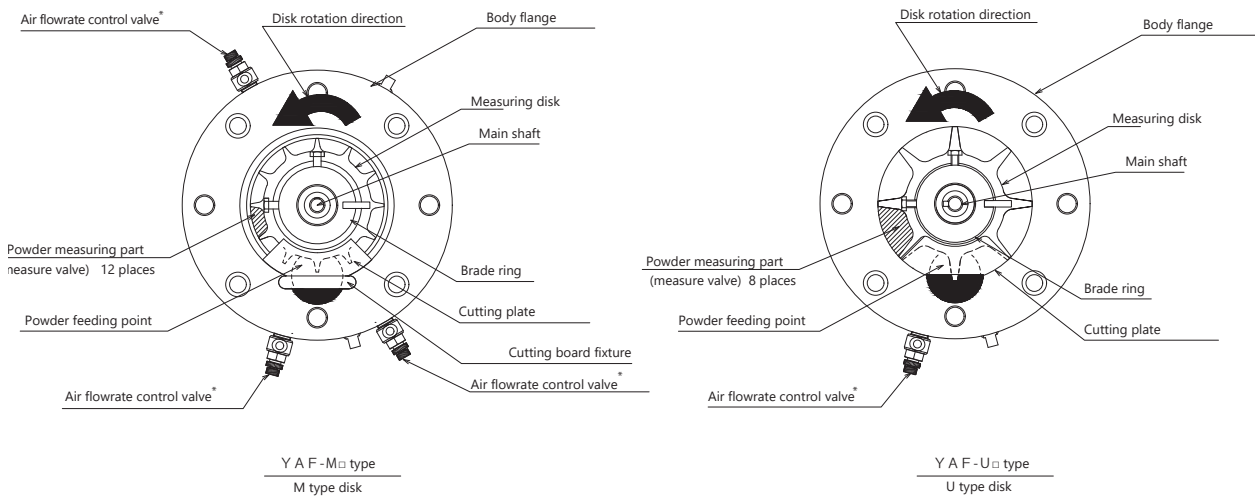
Features

- Compact constant feeder. (YAF) mainly for inorganic flocculant.
- Stable feeding by volumetric table feeder method.
- Stable feeding from fine powder to granular.
- Equipped with the rake for bridge prevention.
- Economical 60W motor.
- Further stable feeding with dry air.

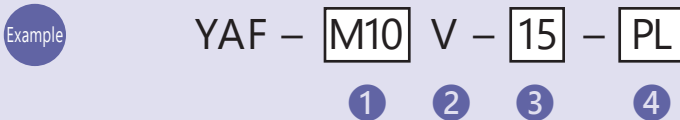
Explanation

The feeder feeds a fixed quantity of powder measured on a measuring disk by cutting and sweeping off with a cutting disk in proportion to the volume of measures and the revolving speed of measuring disk. It is wide variety of capacity types in combination of the various measuring disks (M & U type) and reducers. The below is the sectional drawing for internal structure of body for YAF-M□ type and YAF-U□ type.

* Air flowrate control valve is option.



Model explanation



① Feed capacity

Model * 1	Feed rate (g/h)
M4	90 ~ 450
M10	200 ~ 1,000
M22	450 ~ 2,250
M45	900 ~ 4,500
M100	2,000 ~ 10,000
U30	750 ~ 3,000
U75	1,875 ~ 7,500
U150	3,750 ~ 15,000
U300	7,500 ~ 30,000
U750	18,750 ~ 75,000

*1 M or U type is selected depending on the powder properties.

M type : Powder U type : Powder, Granular

*2 M type only

② Hopper capacity

Model	Capacity
15	15L
30	30L
60	60L

③ Option

Model	Capacity
P	Inner purge air * 2
L	Powder level sensor
D	Dry air unit (separate installation)

Standard specification chart

	YAF type
Control system	Inverter control
Motor	Indoor type 60W 3φ AC200V
Powder end material	SUS304, PVC
Hopper	15L, 30L, 60L, Transparent PVC

*AC400V class is applicable

Model selection

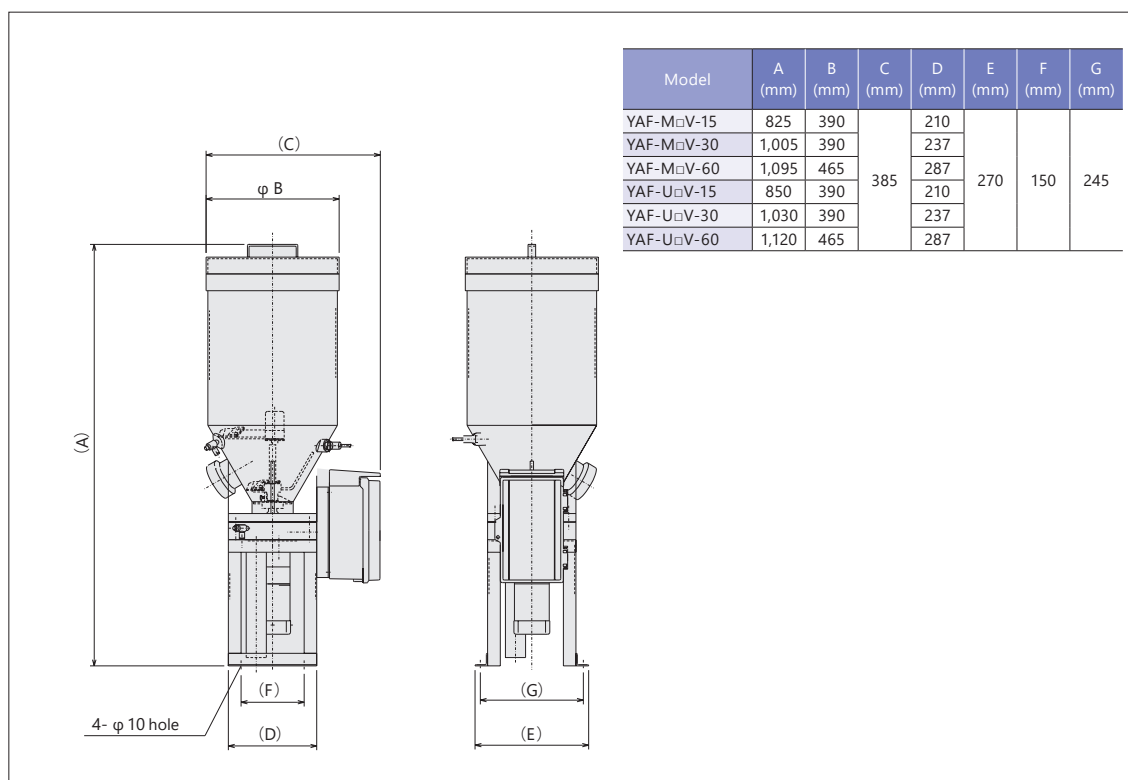
Model	Feed rate (g/h)	Revolution rate	Disk type
YAF-M4	90 ~ 450	1/1,800	M
YAF-M10	200 ~ 1,000	1/750	M
YAF-M22	450 ~ 2,250	1/360	M
YAF-M45	900 ~ 4,500	1/180	M
YAF-M100	2,000 ~ 10,000	1/75	M

Model	Feed rate (g/h)	Revolution rate	Disk type
YAF-U30	750 ~ 3,000	1/1,800	U
YAF-U75	1,875 ~ 7,500	1/750	U
YAF-U150	3,750 ~ 15,000	1/360	U
YAF-U300	7,500 ~ 30,000	1/180	U
YAF-U750	18,750 ~ 75,000	1/75	U

*Variable range is 1:5(12~60Hz) for M type, 1:4(15Hz~60Hz) for U type.

*The feed rate is theological value as the powder bulk density at 1.0. It may vary from the above feed rate depending on powder apparent specific gravity or property etc.

Dimensional outline drawing



How to select dissolving tank and hopper of PAD dissolver unit

Example 1 Case the chemical usage is given

Chemical usage : 6kg/day
 Dissolving concentration : 0.2wt%
 Operating time : 10 hours/day
 Hopper filling volume : For 3 days
 Chemical apparent specific gravity : 0.6 (kg/h)

(1) Calculation of dissolving capacity

$6 \text{ (kg/day)} \div 10 \text{ (hours)} = 0.6 \text{ (kg/h)}$
 As the specific gravity of solution at 1,
 $0.6 \text{ (kg/h)} \div 0.2/100 \text{ (wt \%)} = 300 \text{ (L/h)}$

(2) Calculation of hopper volume

$6 \text{ (kg/day)} \times 3 \text{ (days)} = 18 \text{ (kg)}$
 $18 \text{ (kg)} / 0.6 \text{ (kg/L)} = 30 \text{ (L)}$
 →30L hopper

(3) Model selection

The required dissolving tank capacity as the dissolving time for 1.5 hours.
 $300 \text{ (L/h)} \times 1.5 \text{ (hours)} = 450 \text{ (L)}$
 Therefore, the model is PAD-40 with tank effective capacity 800L.

Example 2 Case the solution discharge rate and injection rate are given.

Discharge rate : 20m³/h
 Injection rate : 2mg/L
 Dissolving concentration : 0.1wt%
 Operating time : 24 hours/day
 Hopper filling volume : For 3 days
 Chemical apparent specific gravity : 0.6 (kg/L)

(1) Calculation of dissolving capacity

Chemical consumption per hour
 $20 \text{ (m}^3\text{/h)} \times 2 \text{ (mg/L)} = 40 \text{ (g/h)} \dots\dots \text{(A)}$
 Dissolving capacity in the concentration at 0.1%
 $40 \text{ (g/h)} \times 100/0.1 = 40,000 \text{ (g/h)}$
 As the specific gravity of solution at 1,
 $40,000 \text{ (g/h)} = 40,000 \text{ (mL/h)} = 40 \text{ (L/h)}$

(2) Calculation of hopper volume

From (A)
 $0.04 \text{ (kg/h)} \times 24 \text{ (hours)} \times 3 \text{ (days)} = 2.88 \text{ (kg)}$
 $2.88 \text{ (kg)} / 0.6 \text{ (kg/L)} = 4.8 \text{ (L)} \rightarrow 8 \text{ L hopper}$

(3) Model selection

The required dissolving tank capacity as the dissolving time for 2.0 hours.
 $40 \text{ (L/h)} \times 2.0 \text{ (hours)} = 80 \text{ (L)}$
 Therefore, the model is PAD-8 with tank effective capacity 160L.

L/PAD type dissolver Selection of undiluted solution transfer pump

- ① L/PAD-30 type Solution discharge rate : 320 (L/h)
- ② Solution concentration : 0.2%
- ③ Undiluted solution concentration : 40%
- ④ Dilution rate = Undiluted solution / solution concentration = 200 times
 ∴ Dilution water : Undiluted solution = 199 : 1
- ⑤ Required undiluted solution rate : $Q = 320 / 199 \approx 1.6 \text{ (L/h)}$
- ⑥ Selection of undiluted transfer pump (Safety rate is 1.5 times) : $1.6 \times 1.5 = 2.4 \text{ (L/h)} = 40 \text{ (ml/min)}$
- ⑦ For the raw liquid transfer pump, select a model with a discharge volume of around 50 (ml/min).

Delivery reference



Delivery place : Tottori pref. Waste disposal site
 Type : Powder polymer auto dissolver
 Model : PAD-Q4V-15



Delivery place : Kagoshima pref. Oil base
 Type : Powder polymer auto dissolver
 Model : PAD-Q20F-30



Delivery place : Tohoku region Waste disposal site
 Type : Powder polymer auto dissolver
 Model : PAD-D240F-250 (old model))



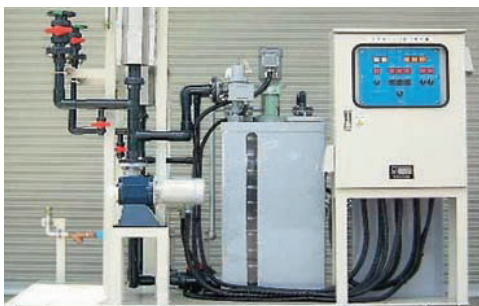
Delivery place : Okayama pref. Sludge recycling center
 Type : Organic conditioner dissolver
 Model : PAD-Q500F-400



Delivery place : Tohoku region Dairy product process factory
 Type : Powder auto dissolver (table feeder method)
 Model : Y/PAD-D40F-30



Delivery place : Wakayama pref. Final disposal site
 Type : Sodium carbonate auto dissolver
 Model : SAD-0.5S-5.0S



Delivery place : Kansai region Confectionary manufacturer
 Type : Liquid polymer auto dissolver
 Model : L/PAD-30V+MT-100V



Delivery place : Kyushu region Beer manufacturer
 Type : Liquid polymer auto dissolver
 Model : L/PAD-150V+MT2000F



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 **TOHKEMY CORPORATION**



Head Office

1-12-11 Tagawakita, Yodogawa-ku, Osaka
532-0021

Overseas Business Department

TEL +81-6-6301-6460
FAX +81-6-6308-3022