Nikka

NIKKA K-V SPRAYER

The ultimate powder spraying system

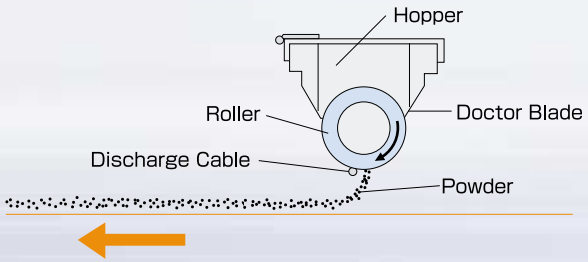
NIKKA LIMITED

The ultimate powder spraying system

Over many years NIKKA has built a solid record with our electric powder sprayer the "NIKKA K-III Sprayer" using corona discharge and our anti-blocking powder "NIKKALYCO".
The existing NIKKA K-III Sprayer provides dust collector and static charging system options for dealing with unexpected powder dropping and powder contamination in an attempt to decrease such problems. However, in reality this has not resulted in a definitive solution.
NIKKA grappled with this problem, developing the "NIKKA K-IV Sprayer System" followed by the just developed "NIKKA K-V Sprayer". With this spraying system, reductions in unexpected powder dropping and powder contamination and increases in the efficiency of powder adhesion to film have been made possible.

<NIKKA K-III Sprayer Characteristics>

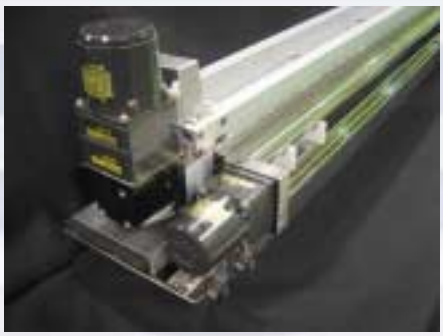
1. Minimal powder dust in the air and minimal unexpected powder dropping compared to an air sprayer due to no airflow occurring with spray from corona discharge.
2. Powder volume can be easily adjusted by the roller revolutions.
3. Simple construction resulting in easy maintenance.



NIKKA K-V Sprayer Characteristics

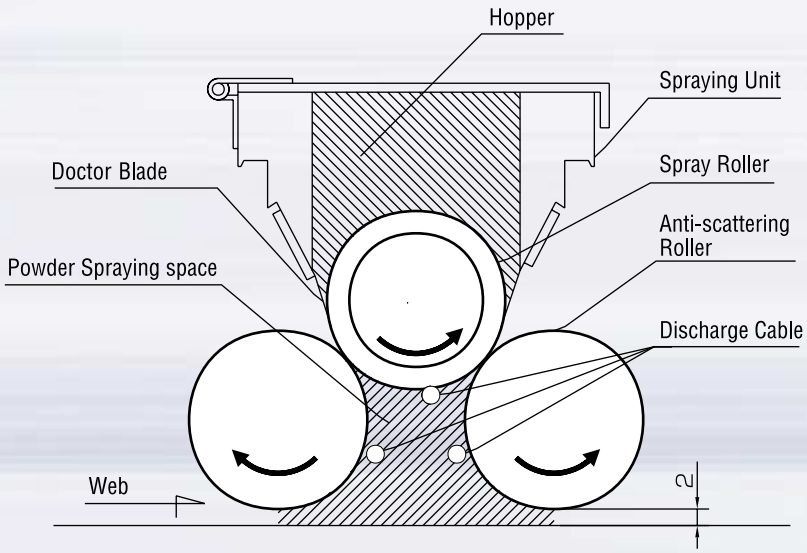
1. **Sharp reduction** in the consumption of powder
2. **Sharp reduction** of powder contamination
3. **Elimination** of unexpected powder dropping
4. Powder volume can be controlled two times as much as NIKKA K-III sprayer can be
5. Powder volume settings can be made in increments of 1% using the touch panel
6. Standard application of monitoring functions for high tension unit (High Tension Monitoring System)

NIKKA has largely eliminated the various problems related to powder contamination and unexpected powder dropping with new technology used in the NIKKA K-V Sprayer.



The powder spray principles are the same as the original NIKKA K-III Sprayer making maintenance easy.

Structure



Process

1)The powder is poured into the hopper.
2)The powder is dispensed according to the spray roller revolutions.
3)The spray roller surface is uniformly powder coated by pressure from the doctor blade.
4)The powder is separated and dispersed from the spray roller surface by corona discharge generated from the discharge-cable.
5)The powder in 4) is sprayed into the powder spraying space-shown in the above figure and adheres to the film surface. By setting the anti-scattering roller and web at a distance of no more than 2mm we have succeeded in suppressing the powder contamination as much as possible.
6)In the powder spray space in 5) the powder adheres to the-surface of the anti-scattering roller, it is then normally separated and dispersed by the discharge cable, preventing unexpected powder dropping.

Advantage

NIKKA K-V Sprayer

- Less unexpected powder dropping
- Discharge cable monitoring function
- Digital control
- Less powder contamination
- More efficient powder spraying
- Less cleaning requirements

Quality increase | **Factory environment improvement** | **Cost reduction**

Powder Spraying Comparison

You can clearly see high performance of the NIKKA K-V Sprayer in the following photo comparison(sprayed under identical conditions).
In comparison with the existing static charging system method of improvement, powder contamination has been greatly improved.
This has resulted in the potential for the unexpected powder dropping being greatly reduced.
Until now, the airflow around the web has impeded powder adhesion and facilitated powder contamination however, it is now possible to dramatically increase the effective adhesion of the powder by limiting as much as possible the space where powder dust fly in the air.
Basically, the faster the line speed is the more apparent the true value of the NIKKA K-V Sprayer becomes.

Spraying Conditions

1. Roller revolutions:	1.87 rpm
2. Line speed:	110m/min
3. Powder:	"NIKKALYCO AS-100S"

With the NIKKA K-V Sprayer it is almost impossible to detect powder dust in the air by visual inspection. By setting the anti-scattering roller and film at a distance of 2mm, the space where powder dust fly in the air is limited as much as possible.

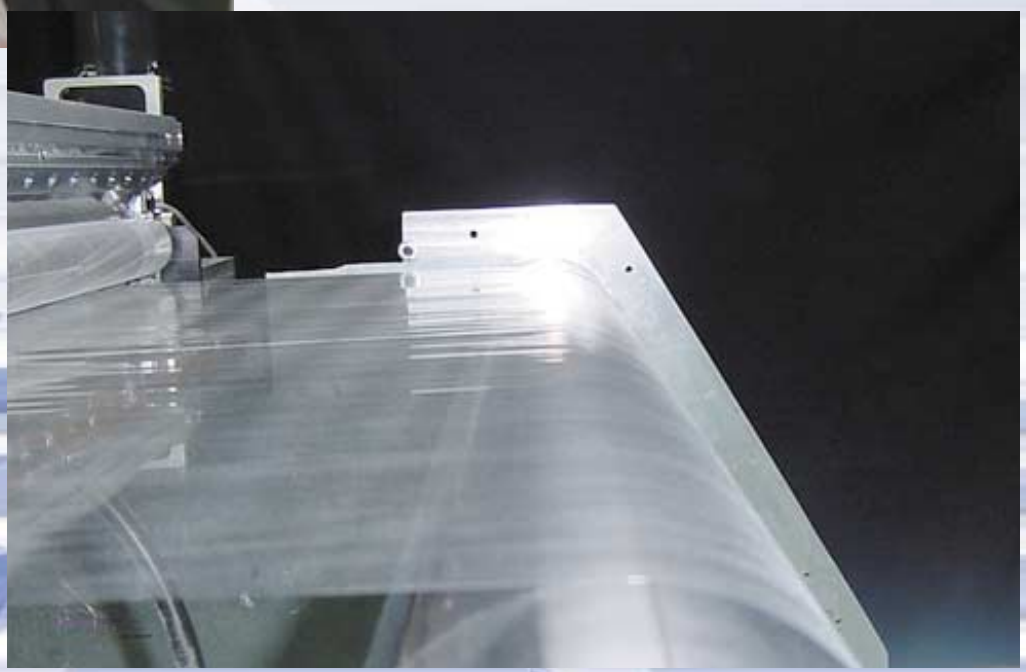
1.Spraying with the NIKKA K-III Sprayer

When operating the NIKKA K-III Sprayer , the sprayed powder is affected by the airflow around the line and spreads to the surrounding area.

2. Spraying with the NIKKA K-III Sprayer + WEKO Ionizing System and Static Charging System

When used in combination with the Static Charging System, the powder is electrically attracted to the film, increasing the effectivenes of adhesion.
Compared to spraying with the NIKKA K-III Sprayer only, there is approximately twice the volume of adhesion to film.

3. Spraying with the NIKKA K-V Sprayer + WEKO Ionizing System and Static Charging System



Other Functions

Anti-Scattering Roller

The anti-scattering roller rotates at a constant speed.
The powder adhered to the roller surface is spread continually by the neighbor discharge cable.

High Tension Monitoring System

High Tension Monitoring System always monitors the current from the high tension transformer which supplies voltage to the discharge cable.
In case that the current is higher than the setting value, it shuts down the system and sounds an alarm.

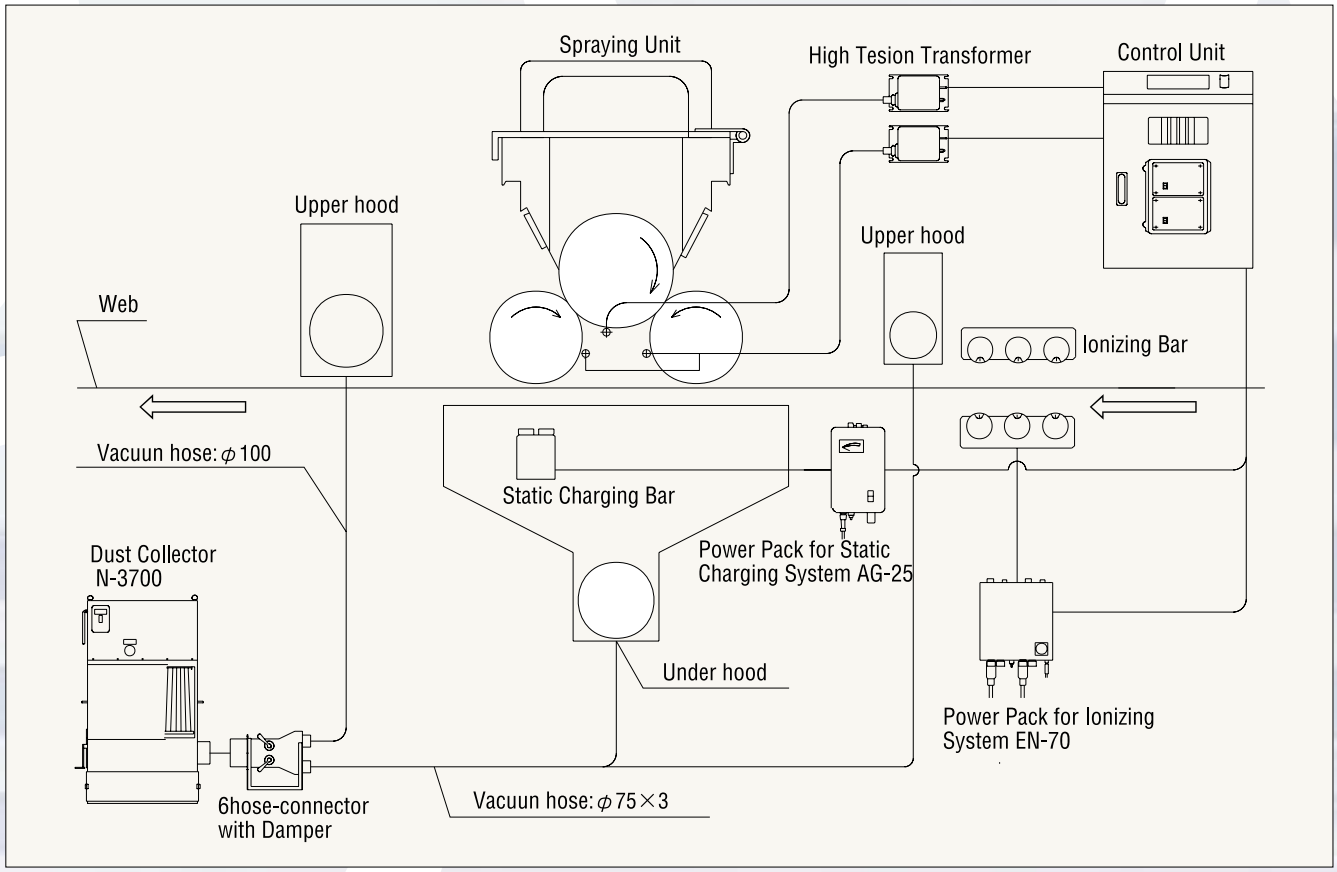
Tension detector

The tension of discharge cable is always checked by a sensor.
In case that the tension is cut or comes loose, this detector sounds an alarm.

Operation Panel

Integrated control makes it possible to control by a touch panel screen.
Additionally it enhanced alarm function.
Illumination lamp always indicates the operating conditions.

Principle Chart



Specifications

1. Power supply: 3 phase AC200V, 50/60Hz (continuous supply)
2. Roller length: 200～2000mm
   (maximum effective spray width 100～1900mm)
3. Standard roller revolutions: 0.1～2.0rpm
4. Rapid response possible (DC0～10V)
5. High tension monitoring system (standard equipment)
6. Options
   1) Increased capacity hopper
   2) WEKO Ionizing System
   3) WEKO Static Charging System
   4) NIKKA Dust Collector

Anti-blocking powder

NIKKALYCO®

NIKKALYCO has been used over many years in a wide range of fields for various industrial anti-adhesion agents, slip agents and anti-blocking agents.
These days in the food industry, the situation is such that issues such as genetically modified products, allergies, etc, even extending into soft packaging itself are being addressed.
Accordingly, Nikka has developed the new product series NIKKALYCO FDL, for soft packaging anti-blocking/slip agents, formulated from food starch and food additives.

NIKKALYCO® FDL-100SG
NIKKALYCO® FDL-300

NIKKALYCO Product Line

Powder	Type	Water Repellent	Usage	Average particle size(um)
FDL-100SG	Non-coated	No	Film lamination	10 - 20
FDL-300	Non-coated	No	Film lamination	30 - 50
AS-100SG	Coated	Yes	Film lamination	10 - 20
AS-100S	Coated	Yes	Film lamination	10 - 20
AS-100	Coated	Yes	General sheet-fed printing	15 - 25
AS-200	Coated	Yes	General sheet-fed printing	20 - 40
AS-300	Coated	Yes	General sheet-fed printing	30 - 50
AS-160	Semi-coated	No	General sheet-fed printing	20 - 30
CD-10	Non-coated	No	General sheet-fed printing	10 - 30
CD-20	Non-coated	No	General sheet-fed printing	20 - 40
CD-30	Non-coated	No	General sheet-fed printing	30 - 50

OFFICIAL WEB SITE http://www.nikka-ltd.jp

⚠ **Handling** Please refer to Material Safety Data Sheet for further information.

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