

CLAIMS

- 1 1. A toner cartridge for use with a developer unit of an image forming device,
2 comprising:
- 3 a housing having a front, a rear, a top, a bottom and a pair of sides, the housing having
4 a reservoir for holding toner;
5 an outlet port on the front of the housing for transferring toner from the reservoir to
6 the developer unit through an inlet port on the developer unit;
7 a first engagement member projecting from the front of the housing positioned to
8 provide an initial force to begin to open a shutter on the inlet port of the developer
9 unit as the toner cartridge is inserted in the image forming device; and
10 a second engagement member projecting from the front of the housing spaced toward
11 one of the sides of the housing from the first engagement member and positioned to
12 provide a force to continue to open the shutter on the inlet port of the developer unit
13 as the toner cartridge is inserted further in the image forming device.
- 1 2. The toner cartridge of claim 1, wherein the first engagement member is aligned
2 horizontally on the front of the housing with the outlet port.
- 1 3. The toner cartridge of claim 1, wherein each of the first engagement member and the
2 second engagement member includes a leading ramped front surface that projects further
3 forward as it travels up the front of the housing.
- 1 4. The toner cartridge of claim 3, wherein the ramped front surface of the second
2 engagement member leads to a vertical front surface of the second engagement member
3 positioned above the ramped front surface of the second engagement member.
- 1 5. The toner cartridge of claim 4, wherein the second engagement member includes a
2 forward projecting bump separating the ramped front surface of the second engagement
3 member and the vertical front surface of the second engagement member.
- 1 6. The toner cartridge of claim 4, wherein an edge of the second engagement member
2 formed between the ramped front surface of the second engagement member and a side
3 surface of the second engagement member facing the first engagement member is rounded.

- 1 7. The toner cartridge of claim 4, wherein the vertical front surface of the second
2 engagement member and at least a portion of the ramped front surface of the second
3 engagement member project further forward than the first engagement member.
- 1 8. The toner cartridge of claim 3, wherein the ramped front surface of the first
2 engagement member leads to a vertical front surface of the first engagement member
3 positioned above the ramped front surface of the first engagement member.
- 1 9. The toner cartridge of claim 1, further comprising an alignment member on the front
2 of the housing for positioning the developer unit as the toner cartridge is inserted in the image
3 forming device, the alignment member having a first ramped side surface that projects further
4 sideways as the first ramped side surface travels up the front of the housing, the first ramped
5 side surface leading to a second ramped side surface positioned above the first ramped side
6 surface, the projection of the second ramped side surface decreasing as the second ramped
7 side surface travels up the front of the housing.
- 1 10. The toner cartridge of claim 9, wherein the alignment member projects from a side
2 surface of the first engagement member.
- 1 11. The toner cartridge of claim 10, wherein the alignment member projects from the side
2 surface of the first engagement member away from the second engagement member.
- 1 12. A toner cartridge for use with a developer unit of an image forming device,
2 comprising:
- 3 a housing having a front, a rear, a top, a bottom and a pair of sides, the housing having
4 a reservoir for holding toner;
5 an outlet port on the front of the housing and facing toward the bottom of the housing
6 for transferring toner from the reservoir to the developer unit through an inlet port
7 on the developer unit, the outlet port being positioned on the front of the housing
8 nearer a first side of the pair of sides; and
9 a ramped engagement member projecting from the front of the housing, the ramped
10 engagement member being spaced toward the bottom of the housing from the outlet
11 port and spaced toward a second side of the pair of sides from the outlet port, the

- 12 ramped engagement member having a front surface that projects further forward as
13 said front surface travels up the front of the housing.

CLAIMS

1. A toner cartridge for use with a developer unit of an image forming device, comprising:

a housing having a front, a rear, a top, a bottom and a pair of sides, the housing having a reservoir for holding toner;

an outlet port on the front of the housing for transferring toner from the reservoir to the developer unit through an inlet port on the developer unit;

a first engagement member projecting from the front of the housing positioned to provide an initial force to begin to open a shutter on the inlet port of the developer unit as the toner cartridge is inserted in the image forming device; and

a second engagement member projecting from the front of the housing spaced toward one of the sides of the housing from the first engagement member and positioned to provide a force to continue to open the shutter on the inlet port of the developer unit as the toner cartridge is inserted further in the image forming device.

2. The toner cartridge of claim 1, wherein the first engagement member is aligned horizontally on the front of the housing with the outlet port.

3. The toner cartridge of claim 1, wherein each of the first engagement member and the second engagement member includes a leading ramped front surface that projects further forward as it travels up the front of the housing.

4. The toner cartridge of claim 3, wherein the ramped front surface of the second engagement member leads to a vertical front surface of the second engagement member positioned above the ramped front surface of the second engagement member.

5. The toner cartridge of claim 4, wherein the second engagement member includes a forward projecting bump separating the ramped front surface of the second engagement member and the vertical front surface of the second engagement member.

6. The toner cartridge of claim 4, wherein an edge of the second engagement member formed between the ramped front surface of the second engagement member and a side surface of the second engagement member facing the first engagement member is rounded.
7. The toner cartridge of claim 4, wherein the vertical front surface of the second engagement member and at least a portion of the ramped front surface of the second engagement member project further forward than the first engagement member.
8. The toner cartridge of claim 3, wherein the ramped front surface of the first engagement member leads to a vertical front surface of the first engagement member positioned above the ramped front surface of the first engagement member.
9. The toner cartridge of claim 1, further comprising an alignment member on the front of the housing for positioning the developer unit as the toner cartridge is inserted in the image forming device, the alignment member having a first ramped side surface that projects further sideways as the first ramped side surface travels up the front of the housing, the first ramped side surface leading to a second ramped side surface positioned above the first ramped side surface, the projection of the second ramped side surface decreasing as the second ramped side surface travels up the front of the housing.
10. The toner cartridge of claim 9, wherein the alignment member projects from a side surface of the first engagement member.
11. The toner cartridge of claim 10, wherein the alignment member projects from the side surface of the first engagement member away from the second engagement member.
12. A toner cartridge for use with a developer unit of an image forming device, comprising:
 - a housing having a front, a rear, a top, a bottom and a pair of sides, the housing having a reservoir for holding toner;

an outlet port on the front of the housing for transferring toner from the reservoir to the developer unit through an inlet port on the developer unit;

a first engagement member projecting from the front of the housing, the first engagement member having a first leading ramped front surface that projects further forward as it travels up the front of the toner cartridge, the first ramped front surface leading to a first vertical front surface positioned above the first ramped front surface; and

a second engagement member projecting from the front of the housing spaced toward one of the sides of the housing from the first engagement member, the second engagement member having a second leading ramped front surface that projects further forward as it travels up the front of the toner cartridge, the second ramped front surface leading to a second vertical front surface positioned above the second ramped front surface, the second vertical front surface and at least a portion of the second ramped front surface projecting further forward than the first vertical front surface.

13. The toner cartridge of claim 12, wherein the first engagement member is aligned horizontally on the front of the housing with the outlet port.

14. The toner cartridge of claim 12, wherein the second engagement member includes a forward projecting bump separating the second ramped front surface and the second vertical front surface.

15. The toner cartridge of claim 12, wherein an edge of the second engagement member formed between the second ramped front surface and a side surface of the second engagement member facing the first engagement member is rounded.

16. The toner cartridge of claim 12, further comprising an alignment member on the front of the housing having a first ramped side surface that projects further toward one of the sides of the housing as the first ramped side surface travels up the front of the housing, the first ramped side surface leading to a second ramped side surface positioned above the first ramped side surface, the projection of the second ramped side surface toward said side of the housing decreasing as the second ramped side surface travels up the front of the housing.

17. The toner cartridge of claim 16, wherein the alignment member projects from a side surface of the first engagement member.

18. The toner cartridge of claim 17, wherein the alignment member projects from the side surface of the first engagement member away from the second engagement member.

19. The toner cartridge of claim 17, wherein the alignment member is aligned vertically with the first vertical front surface.

20. A toner cartridge for use with a developer unit of an image forming device, comprising:

a housing having a front, a rear, a top, a bottom and a pair of sides, the housing having a reservoir for holding toner;

an outlet port on the front of the housing and facing toward the bottom of the housing for transferring toner from the reservoir to the developer unit through an inlet port on the developer unit, the outlet port being positioned on the front of the housing nearer a first side of the pair of sides; and

a ramped engagement member projecting from the front of the housing, the ramped engagement member being spaced toward the bottom of the housing from the outlet port and spaced toward a second side of the pair of sides from the outlet port, the ramped engagement member having a front surface that projects further forward away from the front of the housing as said front surface travels up the front of the housing.