

# **Vibratory Box Feeder**

Model VBF-1

Part 106 539B

Previous Generation



NORDSON CORPORATION • AMHERST, OHIO • USA

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## VIBRATORY BOX FEEDER Model VBF-1

### Description

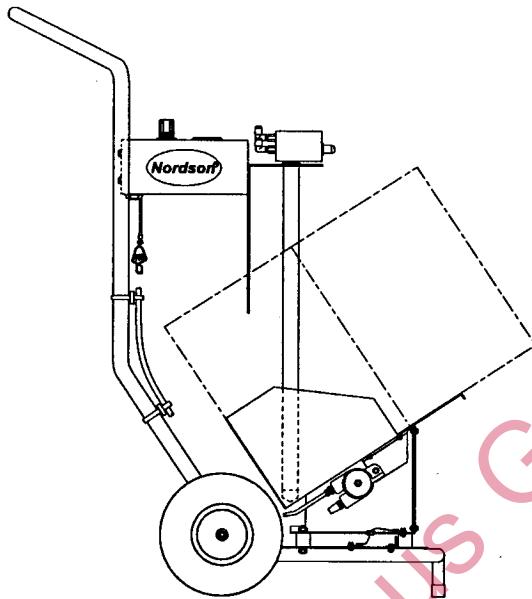


Figure 1 — Model VBF-1

The Nordson® Vibratory Box Feeder fluidizes and pumps powder coatings directly from shipping boxes. It can handle boxes of powder in sizes ranging from 25 to 55 pounds. It is mounted on a two wheeled cart.

The Box Feeder includes an air-powered vibratory turbine mounted on the underside of the box holder, air regulator and gauge, Nordson 100 Plus® low-flow powder pump, and two-piece suction tube. The box holder is isolated from the cart by rubber isolators.

An optional Dual Pump Conversion Kit can be installed to add an additional powder pump to the unit. Refer to pages 8 and 9 for more information.

### Operation

1. Lift the powder pump and bracket clear of the regulator enclosure and set aside.



**CAUTION! Wear approved respiratory protection when handling powders. Breathing powdered coatings can be hazardous to your health. Minimize skin contact when possible, wash thoroughly with soap and water after contact, do not use solvents or high pressure air to clean powder off skin.**

2. Fold back the cardboard box flaps and open the plastic bag containing the powder coating. Fold the bag over the box flaps to help hold them out of the way. Place the box in the box holder.

3. Slide the vertical leg of the powder pump bracket back into the guide on the front of the regulator enclosure and insert the pick-up tube part way into the powder.

DO NOT force the tube into the powder. During operation, vibration and gravity will cause the tube to sink into the powder to the proper level. The plastic bag can be tied around the suction tube, provided you do not block the vent hole near the top of the tube.

4. Back the regulator all the way out (zero psi). Install a 1/4" NPT quick disconnect in the bulkhead fitting on the underside of the gauge enclosure and connect an air supply hose. The air supply should be clean and dry, at a maximum pressure of 100 psi.
5. Connect 1/4" atomizing air (A) and flow rate air tubing (F) to the fittings marked "A" and "F" on the powder pump. Connect low-flow (3/8" I.D.) feed tubing from the pump to the gun.
6. Clamp the ground wire to a true earth ground.



**CAUTION! All conductive objects in the spray area must be connected to a true earth ground. Ungrounded conductive objects will store an electrical charge which, when discharged, could generate a spark hot enough to cause a fire or explosion.**

7. Increase air pressure to the vibratory turbine until it starts, then increase until powder starts to flow towards the suction tube. The recommended operating pressure is 40 to 50 psi.
8. Start atomizing and flow rate air flow to the powder pump (air to the pump is regulated by the gun controller), test spray and increase air pressure to the turbine if necessary.

The pump and bracket assembly will gravity-feed into the box as the powder level falls. The suction tube has a vented inner passage to prevent powder from clogging the intake, but damp powder will cause clogging problems. If you do not use all the powder in the box, reseal it to prevent contamination.

For more information on the pump, including disassembly and repair information, and part numbers, refer to Manual No. 32-8.

## PARTS LISTS

### Using The Parts Lists

#### Reference Numbers

The number in the REF. column indicates the number assigned to the part in the illustration preceding the list. The code NS means the part is Not Shown in the illustration.

#### Notes

A letter in the NOTE column refers to a note below the parts list. *Special attention should be given to noted parts.*

#### Part Numbers

Part numbers are given only for saleable parts or kits. Parts that are not sold separately are sometimes shown for clarity.

#### Descriptions

Descriptions are indented to show the relationship between parts for ordering purposes. A part indented once is a component of the top level assembly, a part indented twice is a component of both the first one level indented item above it and the top level assembly. For example:

| Ref. | Note | Part No. | Description            | Qty. |
|------|------|----------|------------------------|------|
| -    |      | 000 000  | Top Level Assembly     | 1    |
| 1    | A    | 000 000  | • Assembly or Part     | 2    |
| 2    |      | 000 000  | •• Subassembly or Part | 1    |

If you order item 1, items 2 & 3 will be included.

If you order item 2, item 3 will be included.

If you order item 3, you will receive item 3 only.

#### Quantities

Quantities given in all parts lists except recommended spares lists are the quantities needed to assemble the next level assembly. The code "ASR" (As Required) is used for bulk items such as tubing, which is ordered in increments of one foot.

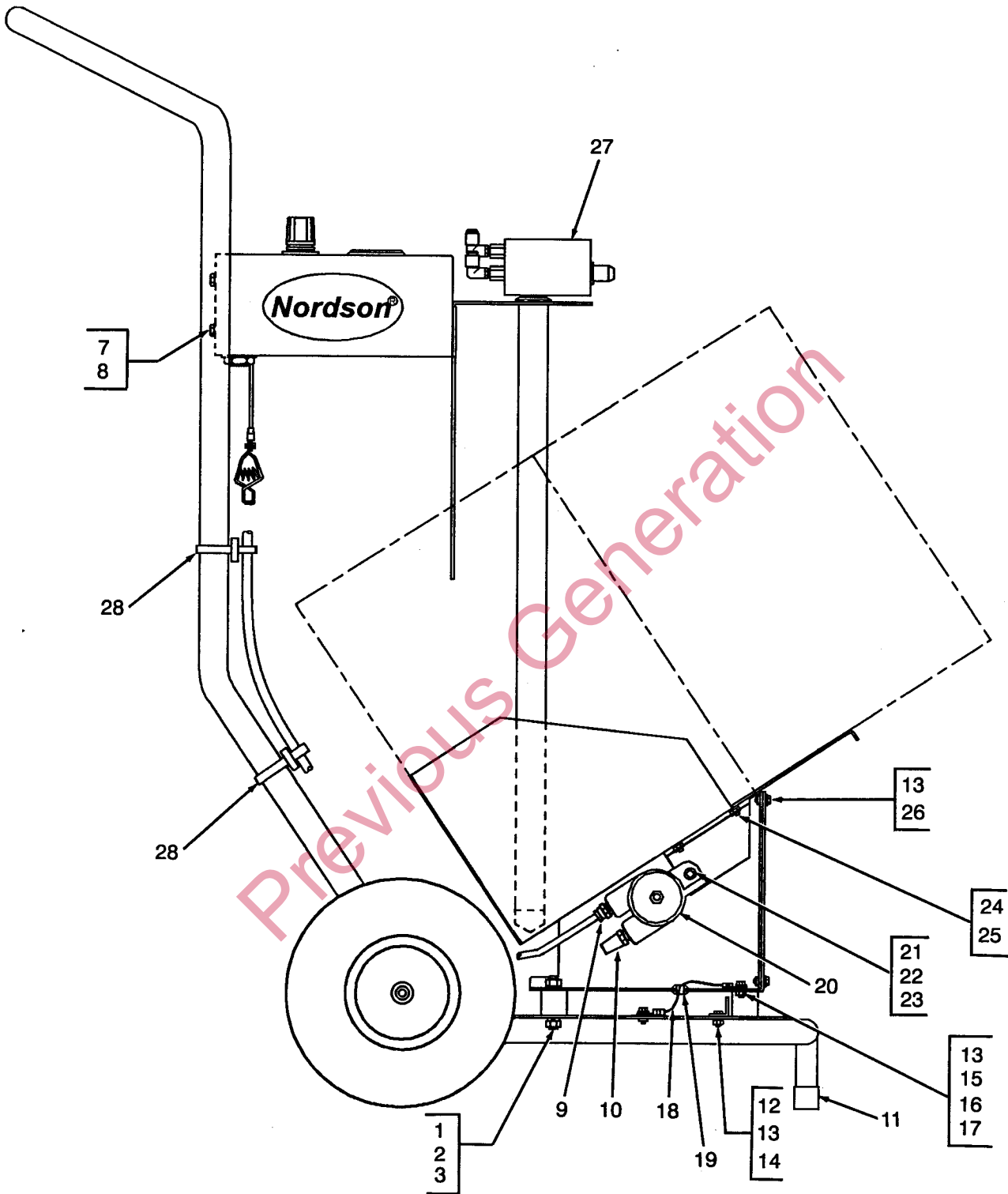


Figure 2 — Vibratory Box Feeder Parts

**Vibratory Box Feeder Parts List****Figure 2 - Side View**

| Ref. | Note | Part No. | Description                                      | Qty. |
|------|------|----------|--|------|
| -    |      | 152 225  | Box Feeder, Vibratory                            | 1    |
| 1    |      | 984 140  | • Nut, Hex, 5/16-18                              | 6    |
| 2    |      | 983 150  | • Washer, Lock, 5/16"                            | 6    |
| 3    |      | 152 237  | • Isolator, Vibration, 5/16-18 x .56"            | 3    |
| 4    |      | 901 601  | • Wheel, 10" x 2.75"                             | 2    |
| 5    |      | 986 111  | • Ring, Retainer, Ext, 62, Invert                | 2    |
| 6    |      | 983 090  | • Washer, Flat                                   | 4    |
| 7    |      | 982 134  | • Screw, Hex Hd, Cap, M6 x 14                    | 4    |
| 8    |      | 983 525  | • Washer, Lock, Ext, M6                          | 4    |
| 9    |      | 971 265  | • Connector, 1/4" NPT x 1/4" Tube                | 1    |
| 10   |      | 972 615  | • Muffler, Filter, 1/4" NPT                      | 1    |
| 11   |      | 152 235  | • Cap, Tube, Load-bearing, 1.00"                 | 1    |
| 12   |      | 982 193  | • Screw, Pan Hd, M5 x 16                         | 3    |
| 13   |      | 983 401  | • Washer, Lock, M5                               | 13   |
| 14   |      | 984 706  | • Nut, Hex, M5                                   | 3    |
| 15   |      | 240 674  | • Tag, Ground                                    | 3    |
| 16   |      | 982 136  | • Screw, Pan Hd, M5 x 16, Brass                  | 2    |
| 17   |      | 983 021  | • Washer, Flat, .203 x .406"                     | 3    |
| 18   |      | 152 233  | • Jumper, Ground                                 | 2    |
| 19   |      | 900 728  | • Grommet, Rubber, 5/16 x 5/8 x 3/32"            | 2    |
| 20   |      | 246 656  | • Vibrator, Turbine                              | 1    |
| 21   |      | 984 711  | • Nut, Hex, M10                                  | 1    |
| 22   |      | 983 405  | • Washer, Lock, M10                              | 1    |
| 23   |      | 982 177  | • Screw, Socket Hd, M10 x 30                     | 1    |
| 24   |      | 984 707  | • Nut, Hex, M8                                   | 2    |
| 25   |      | 983 404  | • Washer, Lock, M8                               | 2    |
| 26   |      | 982 000  | • Screw, Pan Hd, M5 x 10                         | 5    |
| 27   | A    | 142 062  | • Pump, Powder, 100 Plus <sup>®</sup> ; Low-flow | 1    |
| 28   |      | 156 207  | • Clip, Tube                                     | 2    |

Note (A) - Refer to Manual No. 32-8 for parts breakdown.

Parts list continued on following page.

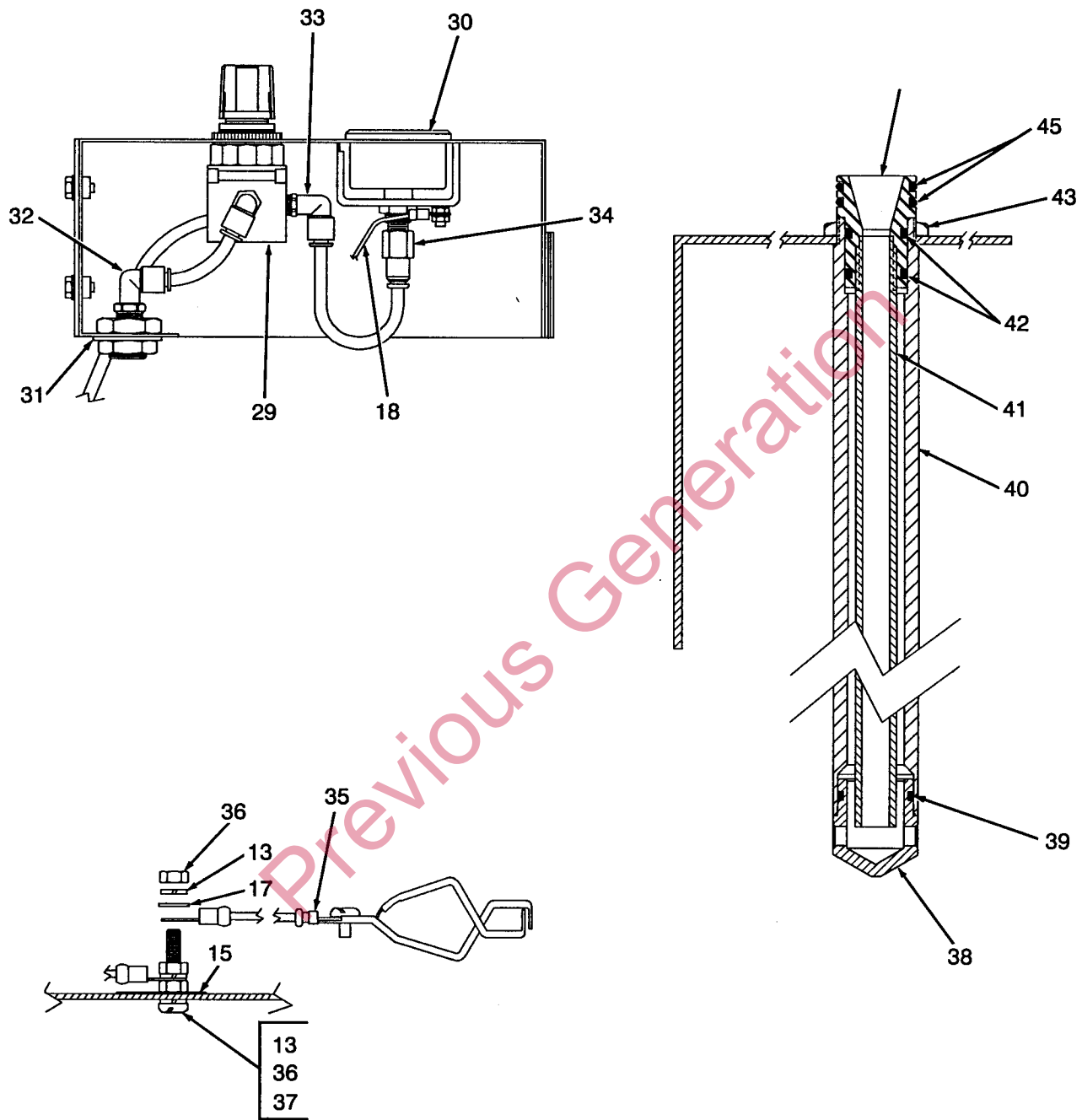


Figure 3 — Vibratory Box Feeder Parts (continued)  
(Drawings Not To Scale)

**Parts List** *(continued)***Figure 3 - Vibratory Box Feeder Parts** *(continued)*

| Ref. | Note | Part No. | Description                                    | Qty. |
|------|------|----------|--|------|
| 29   |      | 901 444  | • Regulator, Air, 5-125 psi                    | 1    |
| 30   |      | 901 228  | • Gauge, Air, 0-100 psi                        | 1    |
| 31   |      | 973 968  | • Fitting, Bulkhead, 1/4" NPT                  | 1    |
| 32   |      | 971 266  | • Elbow, Male, 1/4" NPT x 1/4" Tube            | 1    |
| 33   |      | 972 119  | • Elbow, Male, 1/8" NPT x 1/4" Tube            | 3    |
| 34   |      | 972 659  | • Connector, Female, 1/8" NPT x 1/4" Tube      | 1    |
| 35   |      | 134 575  | • Wire, Ground                                 | 1    |
| 36   |      | 984 702  | • Nut, Hex, M5, Brass                          | 3    |
| 37   |      | 982 126  | • Screw, Pan Hd, M5 x 25, Brass                | 1    |
| 38   |      | 152 230  | • Plug, End, Box Feeder, Vib.                  | 1    |
| 39   |      | 941 176  | • O-ring, Silicone, .812 x 1.00"               | 1    |
| 40   |      | 152 228  | • Tube, Pick-up, Outer                         | 1    |
| 41   |      | 152 223  | • Tube, Pick-up, Inner                         | 1    |
| 42   |      | 941 145  | • O-ring, Silicone, Conductive, .625 x .812"   | 2    |
| 43   |      | 939 613  | • Nut, Lock, Conduit, 3/4" NPS                 | 1    |
| 44   |      | 152 227  | • Adapter, Pump, Box Feeder, Vib.              | 1    |
| 45   |      | 941 185  | • O-ring, Silicone, Conductive, .875 x 1.0625" | 2    |
| -    |      | 900 730  | • Tubing, Polyurethane, 1/4", Blue             | ASR  |

**Low-Flow Powder Feed Tubing (Optional)**

(Bulk, order in one foot increments)

| Part No. | Description                          |
|----------|--------------------------------------|
| 900 549  | Tubing, Powder, Low-Flow (3/8" I.D.) |

## DUAL PUMP CONVERSION KIT

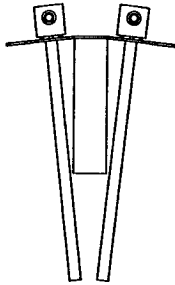


Figure 4 — Dual Pump Configuration

The vibratory box feeder is shipped with equipped with one pump. The Dual Pump Conversion Kit is optional, and allows you to add a second pump. The kit includes the following components:

- Dual-pump mounting bracket
- Inner pick-up tube
- Outer pick-up tube
- VBF-1 pump adapter with O-rings
- 100 Plus® low-flow pump
- Conduit nut

### Installation

Refer to Figure 5.

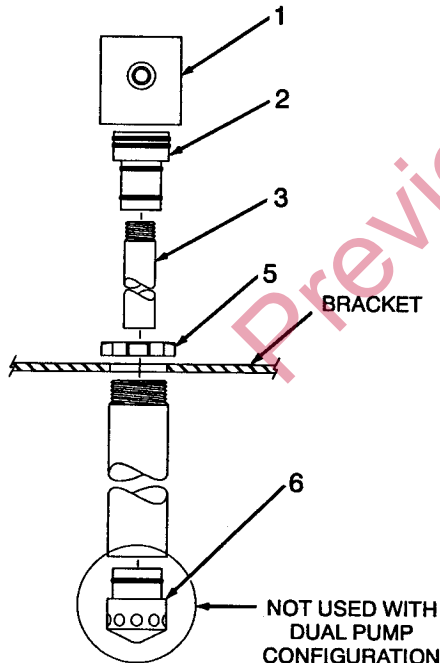


Figure 5 — Pump/Adapter/Pick-up Tube Assembly

1. Remove the pumps (1), adapters (2), and inner pick-up tubes (3) from the outer pick-up tubes (4) supplied with the box feeder and with the kit.
2. Remove the conduit nut (5) securing the outer pick-up tube to the single-pump bracket. Remove the outer pick-up tube from the bracket. Save the bracket for possible future use.
3. Remove the conduit nut from the outer pick-up tube supplied with the kit.
4. Remove the end plug (6) from the outer pick-up tube supplied with the box feeder. The end plug is not used with the dual-pump configuration. Save the end plug for possible future use.
5. Install the outer pick-up tubes on the dual-pump bracket and secure them in place with the conduit nuts.

**DUAL PUMP CONVERSION KIT** *(continued)*

6. Make sure the inner pick-up tubes are tightly threaded into the adapters. Install the adapter/inner pick-up tube assemblies into the outer pick-up tubes.
7. Install the pumps onto the adapters. Install the vertical leg of the mounting bracket into the guide on the front of the regulator enclosure and lower the pick-up tubes into the box of powder.

DO NOT force the tubes into the powder. During operation, vibration and gravity will cause the tubes to sink into the powder to the proper level.

**Dual Pump Conversion Kit Parts List**

Reference numbers refer to Figure 3.

| Ref. | Note | Part No. | Description                                      | Qty. |
|------|------|----------|--|------|
| -    |      | 156 454  | Kit, Bracket, Pump, Dual, VBF-1                  | 1    |
| 40   |      | 152 228  | • Tube, Pick-up, Outer                           | 1    |
| 41   |      | 152 223  | • Tube, Pick-up, Inner                           | 1    |
| 42   |      | 941 145  | • O-ring, Silicone, Conductive, .625 x .812"     | 2    |
| 43   |      | 939 613  | • Nut, Lock, Conduit, 3/4" NPS                   | 1    |
| 44   |      | 152 227  | • Adapter, Pump, Box Feeder, Vib.                | 1    |
| 45   |      | 941 185  | • O-ring, Silicone, Conductive, .875 x 1.0625"   | 2    |
| NS   |      | 156 453  | • Bracket, Pump, Dual, VBF-1                     | 1    |
| NS   |      | 142 062  | • Pump, Powder, 100 Plus <sup>®</sup> , Low Flow | 1    |

Previous Generation