TENNANT INSTRUCTION BULLETIN

No. 3659 Machines: 800, 810 Published: 6-96/02 SYSTEM: SWEEPING

NOTE: DO NOT DISCARD Parts List from Instruction Bulletin. Place Parts List in the appropriate place in your machine manual for future reference. Retaining the Parts List will make it easier to reorder individual parts and will save you the cost of ordering an entire kit.

NOTE: Numbers in parenthesis () are reference numbers for parts listed in Bill of Materials.

Installation Instructions for Regenerative Filter System Kit 79174.

If severe dusting of the machine occurs, check all the brush seals and skirts for damage. Check seal from vacuum fan to the rear of the hopper. Check the brush recirculation flap for proper position. Check hopper filters for damage or a plugged condition. Damaged filters or seals in the shaker panels or hopper lid are often indicated by excessive accumulation of dust inside bottom of the filters. Accumulation of dust at the bottom of the filters will prevent the diaphragm valve from functioning, and contribute to plugging condition.

This kit contains parts needed to install a regenerative filter system on the machines listed above so filter and shaker assembly for each side of hopper function independent of each other. Please follow step-by-step instructions.

TOOLS REQUIRED:

Hand drill, 1/8" bit, 7/32" bit, 11/32" bit Ratchet wrench - 3/8" drive with 1/2" and 17 mm sockets Ratchet wrench - 1/4" drive with 10 mm socket Nutdriver - 10 mm Box wrench - 10 mm Philips screwdriver Pop rivet gun for 1/8" diameter pop rivets Allen wrench - 3/32 Gasket scraper, Propane torch, Mineral spirits, Degreasing fluid

PREPARATION:

1. Roll the hopper out. Open the cover and prop safely in the full open position.

FOR SAFETY: Before leaving or servicing machine, stop on level surface and set parking brake (if equipped on machine). Then turn off machine and remove key.

2. Disconnect battery cables from machine.



WARNING: Always disconnect battery cables from machine before working on electrical components.

INSTALLING NEW SHAKER PANEL SEALS:

(Refer to Fig. 1 and 2)

- 1. Unplug both filter shaker motors from the hopper harness.
- 2. Remove the four M10 hex screws holding each filter shaker assembly to the hopper.

Remove the filter shaker assemblies from the hopper. (Refer to Fig. 1)

- 3. Loosen the four M10 hex screws holding each filter retaining ring to the shaker panels. Rotate the filter retaining rings and remove them from the shaker panels. (Refer to Fig. 1)
- 4. Remove the filters from the shaker panels and clean thoroughly with compressed air, blowing through the filters from the inside out. **DO NOT WASH.**
- NOTE: The removable screens may be washed in a mild detergent solution, but must be dry before replacing on the filters. If the filters appear damaged, show signs of leakage, have bunched pleats, or show any signs of water logging they must be replaced. If the disk valve at the base is damaged the filter should be replaced.



FIG. 1 - Filter Shaker Assembly And Seal

- 5. Reinstall the screens on the filters. Make sure the screens are tight.
- 6. Remove the old seals from the shaker panels using a gasket scraper.

NOTE: Take care to avoid nicking or gouging the seal surface.

- 7. Remove the old adhesive from the shaker panels using mineral spirits or a propane torch to soften the adhesive.
- NOTE: If using a propane torch, remove the four rubber isolators located at the corners of both shaker panels. Heat the old adhesive just enough to soften, and avoid charring the painted surfaces. Reinstall the isolators when all of the adhesive has been removed.
 - 8. Use the isopropyl alcohol to remove any residue of cleaning solvents, oils, etc.

- 9. Peel the backing paper back approximately six inches at a time. This will prevent the seal from picking up any dirt or becoming tangled. Leave the last six inches until step #13.
- 10. Apply the new seal (44) to the shaker panel. **DO NOT STRETCH THE SEAL MATERIAL.** Be sure to make the butt splice in the center of the straight area of the shaker panel, not the corners. (Refer to Fig. 1 and 2)
- 11. Seal the butt splice with the contact adhesive 3M #1357 (43) or something equal. (Refer to Fig. 1 and 2)
- NOTE: Before butting the ends together, cut the seal so it is approximately 1/8 inch longer than the opposite end to allow some compression at the joint.
- 12. Apply contact adhesive to both ends of the seal and allow to cure for about ten minutes before joining. (Refer to Fig. 2)
- 13. Butt the seal together, remove the remaining backing paper, press the seal into place. (Refer to Fig. 2)
- 14. Reassemble the filters to the shaker panels. (Refer to Fig. 1)
- NOTE: Make sure the filter retaining rings are properly seated inside the mounting flange and not pinching or riding up on the flange edge.



FIG. 2 - Gluing Butt Splice

INSTALLING A NEW CENTER SEAL IN THE HOPPER COVER: (Refer to Fig. 3)

- 1. Clean the underside of the hopper cover and the entire filter shaker area thoroughly.
- 2. For machines prior to serial number 800-1242 and 810-2084, a new center seal for the hopper lid may be required. Use the new seal (41).
- 3. Make sure the existing foam seals in the hopper cover are clean and dry. The new seal is attached from rear to front on the center reinforcing tube under the hopper lid.

- 4. Insure that the seal mounting surface is clean and free from dirt, oil, or any solvent film.
- Remove several inches of protective backing from the seal (41) and butt one end of the seal against the existing seal at the rear of the hopper lid. Carefully peel off the backing while applying the new seal to the center of the hopper cover.
 DO NOT STRETCH THE SEAL MATERIAL. (Refer to Fig. 3)



FIG. 3 - Hopper Cover and Seal Assembly

(800 Machines with S/N below 1242) (810 Machines with S/N below 2084 ONLY)

- 6. Carefully trim the end of the seal material so it will butt against the next existing seal that runs right to left at the front of the hopper cover. (Refer to Fig. 3)
- 7. Apply a light coat of RTV sealant in each butt joint at the ends of the new seal. Wipe off any excess RTV sealant from the face of the seal. Allow the seal to cure for 6-8 hours before closing the hopper cover. (Refer to Fig. 3)
- NOTE: Contact adhesive can be used in place of the RTV sealant if quicker cure time is needed.

PREPARING HOPPER FOR R.F.S. OPTION:

(Refer to Fig. 4 and 5)

- 1. Remove the existing hopper harness. Note all the clamp locations and the routing of the harness, especially at the lower hopper pivot area and along the lift arms. Diagram and/or photograph as necessary to insure proper reinstallation of the new harness in a later step.
- NOTE: On early production 800 and 810 sweepers, there is a mercury switch mounted on the right hand side of the hopper. This switch utilizes an independent wire harness that must **NOT** be removed. Clip any cable ties that may attach this harness to the old hopper harness and leave in place.
 - 2. Drill six 1/8" diameter holes in the rear of the hopper. (Refer to Fig. 4)
- NOTE: Later machine versions have these holes in place, and are plugged with removable plastic plugs.



FIG. 4 - RFS Mounting Holes

DRILLING HOPPER HOLES CONTINUED:

(Refer to Fig. 4 and 5)

- 3. Drill **one** 11/32" diameter hole in the rear panel of the hopper. (Refer to Fig. 5) Install the barbed fitting (45) and nylon washer (46) into this hole.
- NOTE: Later machine versions may have this hole in place, and is plugged with a screw and nut.
 - 4. Drill **six** 7/32" diameter holes in the rear panel of the hopper from the inside. (Refer to Fig. 5)
- NOTE: Later machine versions have these holes in place as either a 7/32" or a 9/32" hole.



VIEW - INSIDE OF HOPPER

TO ASSEMBLE THE CONTROL ASSEMBLY:

(Refer to Fig. 6 and 12)

- 1. Install four relays (26), One pressure switch (27) and one RFS control assembly (25) on control mounting plate (23) with nine hex screws (18). Hand tighten hex screws with 10 mm nutdriver. (Refer to Fig. 6)
- 2. Install control mounting plate (23) assembled in step one, on rear panel of hopper with six 1/8" pop rivets (24). (Refer to Fig. 6)
- 3. Attach one end of vacuum hose (31) to the barbed fitting installed in the rear of the hopper earlier. (Refer to Fig. 12) Clamp the hose in place along the upper edge of the plastic vacuum duct at the rear of the hopper. Use three clamps (32) and attach using the existing M6 hex screws that hold the vacuum duct to the back of the hopper. The other end of the vacuum hose will be connected in a later step. (Refer to Fig. 6)
- NOTE: If the M6 hex screws removed are 1/2" long, discard and replace with 3/4" long screw (21).



FIG. 6 - Control Assembly

TO ASSEMBLE DUCT ASSEMBLIES:

(Refer to Fig. 7 and 8)

- 1. Insert four nylon bearings (6) in two duct weldments (1). The flanges must be on the inside of the duct. (Refer to Fig. 7)
- 2. Insert four pivot shafts (3) through the nylon bearings (6) from the inside of the duct weldments. (Refer to Fig. 7)
- 3. Insert two shutter plates (2) into duct weldments and align holes with threads in the pivot shafts. (Refer to Fig. 7)
- NOTE: The shutter plates must be able to rotate 90 degrees without interference. The plate are correctly installed if they are able to rotate to a totally vertical orientation as viewed looking down at the top of the duct assembly. (Refer to Fig. 7 and 8)



FIG. 7 - Duct Assembly

- 4. Attach the shutter plates (2) to the shafts (3) using eight hex screws (4). Use loctite (5) on the threads. Check the operation of the shutters for any interference. (Refer to Fig. 7 and 8)
- 5. Attach the seals (19) to the bottom of the duct weldments. (Refer to Fig. 7)
- NOTE: The seal (19) must butt end to end, and provide a complete seal of the duct assembly to the slot in the vacuum duct of the hopper. Verify seal before proceeding to next step.

- 6. Place the duct assemblies over the vacuum air inlet slots in the rear of the hopper and note existing hardware that is used to hold the plastic duct on the rear of the hopper. Align the duct assemblies on this hardware and the holes drilled earlier. Note the six screws on each side of the hopper that will be used to help hold the duct in place. These require the twelve M6 nyloc nuts (22). (Refer to Fig. 7)
- NOTE: Later machine versions use a short thread forming screw to secure the plastic vacuum duct in place. These screws are not long enough to secure the RFS duct assemblies in place. Note which screws are used to mount the duct assemblies and replace with the longer M6 screws (21). Use care not to strip the threads in the hopper.
 - 7. Fasten the duct assemblies to the hopper using twelve M6 hex nuts (22) and six M6 hex screws (18). (Refer to Fig. 7)
- NOTE: On machines with 9/32" diameter mounting holes, use the six .31 hex screws (20).



FIG. 8 - Duct Assembly Cross Section

TO ASSEMBLE MOTOR ASSEMBLIES:

(Refer to Fig. 9)

- 1. Place an O-ring seal (13) over the output shaft of each motor (12) and locate around the output shaft boss. (Refer to Fig. 9)
- Insert the motor output shaft through the hole in the motor mounting bracket (9). The flanges of the brackets should face away from the motor. Attach the motors with eight #8-32 pan head screws (14) and lock washers (15). (Refer to Fig. 9)
- 3. Apply seal (16) to each motor mounting bracket (9). (Refer to Fig. 9)
- NOTE: Prior to installation of seal, place the motor cover (17) on the mounting bracket (9) and align mounting holes. Trace around the cover with a pencil to aid positioning of the seal. The seal should be applied as one piece, and should not cover the mounting holes. Butt the ends of the seal together.



FIG. 9 - Motor Assemblies

- 4. Attach the motor harness (33) to the motors. The white lead must be attached to the positive terminal of the motor.
- 5. Attach the motor covers (17) to the motor mounting brackets locating the small notches along one cover edge toward the angled end of the motor mounting bracket. These notches provide clearance for the motor harness wires to exit the cover. Hold the covers in place with eight M6 hex screws (18). (Refer to Fig. 9)
- 6. Remove the existing set screws from the the couplings (7) and replace with four new set screws (8). Use some loctite (5) on the threads.
- 7. Place the couplings over the motor shafts. Rotate the coupling to align the set screw with the flat on the shaft and position the coupling as close as possible to the motor without interfering with the bracket, motor shaft, or hardware (approx. 1/16" to 1/8"). Tighten the set screws securely. (Refer to Fig. 9)

- 8. Rotate the coupling and motor shaft so the coupling can align with the flat on the duct assembly pivot shaft. (Refer to Fig. 9)
- NOTE: Rotate the coupling with slow, even pressure applied to the coupling. DO NOT FORCE. If there is too much resistance, apply a 12VDC power source to the motor leads to jog the coupling into position.
 - Attach the motor assemblies to the duct assemblies using four hex screws (18), hex nuts (22), and flat washers (11). Adjust the brackets so there is clearance for the coupling to operate without interference or binding. Tighten the set screws securely against the flats on the pivot shafts. (Refer to Fig. 9)
- 10. Reinstall the filter shaker assemblies in hopper. Do not over tighten the M10 hex screws. Tighten to 18 - 24 Nm (15 - 20 ft lb).

INSTALLATION OF NEW HOPPER WIRE HARNESS :

(Refer to Fig. 10)

- 1. Locate the end of the new harness (34) with the connectors that mate with the shaker motor and duct motors. Insert the harness through the same holes in the hopper as the previous harness. Feed the harness to the far side filter shaker assembly. Connect the shaker motor and duct motor. Connect the near side shaker motor and duct motor.
- 2. The large *branch* in the harness should locate just outside the harness hole on the right hand side of the hopper (operators side of machine). Attach one strain relief (39) in the hole and on the harness with the *branch* located just outside the strain relief. (Refer to Fig. 10)
- 3. Install the cable clamp (36) on the harness inside the hopper and attach it to the duct mounting screw closest to the duct motor bracket on each side of the hopper. Use the small cable ties to group any excess wire and tie back to keep away from the filter shaker panels when they are removed for service. Attach second strain relief (39) to the harness at the hole in the center panel. (Refer to Fig. 10)
- 4. Route the new hopper harness (34) in a like manner as the previous harness was routed. Use existing clamps and cable ties provided to tie the harness where needed. Reconnect all the lights and hopper connections and route harness along the lift arms paying careful attention to the lower pivot area. Connect the harness to the existing connectors at the upper lift arm pivot area.
- NOTE: The harness should be relatively tight from these connectors down the lift arm to the pivot area. Likewise, the harness should be relatively tight from the branch located at the strain relief and down the side of the hopper and to the lower hopper pivot area. If this procedure is followed, adequate slack should exist in the harness at the hopper pivot area.

- 5. Seal the strain reliefs and the harness at both harness holes in the hopper with RTV adhesive (42). Apply the RTV liberally to both sides of the strain reliefs. (Refer to Fig. 10)
- 6. Seal the rearmost edge of the hopper divider panel at the rear of the hopper with a liberal bead of RTV adhesive applied to both sides of the panel. Insure that the screw clearance hole or pocket located along the rearmost edge of the panel is completely sealed off with RTV adhesive. (Refer to Fig. 10)



FIG. 10 - Hopper Harness Sealing

TO WIRE THE CONTROL PANEL:

(Refer to Fig. 6 and 11)

- 1. Route the harness at the rear of hopper.
- 2. Install the grommet (28) in the pressure switch (27) on the control panel. (Refer to Fig. 11)
- 3. Connect the wires from the harness to the new pressure switch (27), routing wires through the grommet. The black wire connects to the *Common* terminal, and the purple wire to the *Normally Open* terminal. (Refer to Fig. 11)
- 4. Connect all the plugs from the harness to the four relays (26). The relays are all identical, and the order of connection is not important
- 5. Connect the two plugs to the RFS control box (25). (Refer to Fig. 11)
- 6. Connect the harness to the existing pressure switch mounted on the rear of the hopper. The black wire connects to the *Common* terminal, and the purple wire to the *Normally Open* terminal.
- NOTE: On hoppers with a mercury switch on the right hand side of the hopper--be sure to reattach any wire connection from the mercury switch harness that was disturbed by removal of the old hopper harness. This switch supplied a ground connection for the mercury switch on machines so equipped.



FIG. 11 - Control Panel Wiring

- 7. Route the loose end of vacuum hose (31) along the wire harness to the pressure switch (27) mounted to the RFS control panel. This hose must enter the control panel area at the bottom to clear the notch in the panel cover (35). Use short ties to tie hose to the wire harness. AVOID pinching the hose shut. Trim off excess length of hose if necessary. (Refer to Fig. 11)
- 8. Install breather fitting (29) on the "HI" port of the pressure switch. The ports are labeled on the switch. (Refer to Fig. 6)
- 9. Install brass straight fitting (30) on the "LOW" port of the pressure switch. The ports are labeled on the switch. (Refer to Fig. 6)
- 10. Attach the cover (35) to the RFS control panel using five hex screws (18). Mount the cover with the slot at the bottom. Route the wires and vacuum hose through this slot. The heavy wrapped portion of the harness may lay on the hopper rear ledge--however, insure the harness does not route too close to the edge of the rear ledge where it may become damaged during raising and lowering of the hopper.
- 11. Secure the harness to the hopper with cable ties and existing clamps.
- 12. Temporarily reconnect the machine battery at this point. Raise the hopper fully and observe the harness bundle at the lower lift arm pivot. Insure the harness does not bind or pinch and has adequate clearance not to catch on any structure during the raising of the hopper.
- 13. Engage the hopper safety arm and lower the hopper until it is locked in place.
- 14. Disconnect the machine battery.



FIG. 12 - RFS Assembly And Vacuum Hose

TO WIRE MACHINE:

(Refer to Fig. 13)

- 1. Complete the harness routing from the upper lift arm pivot to the circuit breaker panel: Follow the hydraulic hose bundle from the upper lift arm pivot area to the area forward of the operator compartment foot well. Locate the wires that connect to the circuit breaker panel.
- Remove the circuit breaker panel from the foot well area of the operator compartment and pull it out far enough to access the wiring at the rear of the circuit breakers. (Refer to Fig. 13)
- 3. Find circuit breakers CB-2 and CB-4. These are both 15 amp circuit breakers. Note and diagram the position and color code of the wires. The new harness is designed to "jumper in" to the existing connections while supplying power to the RFS option. (Refer to Fig. 13)
- NOTE: Two new circuit breakers (40) are supplied in this kit. It is recommended that CB-2 and CB-4 be replaced with these new parts if the machine has been operated in a severe dust environment.



FIG. 13 - Main Machine Wiring

- 4. Remove the orange wire on CB-4 and plug on to 18P/orange of the new hopper harness. Plug 18Q/orange from the new hopper harness on the empty terminal of CB-4.
- 5. Remove the 11/PUR wire on CB-2 and plug it into the 11A/purple of the new hopper harness. Plug 11B/purple from the new hopper harness on to the empty terminal of CB-2.
- 6. Reinstall the circuit breaker panel back into the operators compartment. (Refer to Fig. 13)
- 7. Using the cable ties provided, neatly bundle slack harness wires behind the breaker panel. Leave a little slack for any future removal of the circuit breaker panel. Use the cable ties to bundle the harness to the hoses forward of the operators compartment.
- 8. Replace the rubber dust flap in its correct location.
- 9. Reconnect the machine battery.



WARNING: Check for proper routing of harness during hopper articulation.

- 10. Start the engine and disengage the hopper safety arm.
- 11. Raise and lower the the hopper slowly in short increments and observe the harness to insure it does not pinch, catch, or bind on any structure. Pay close attention to the routing from the point where the harness enters the hopper down to the hopper pivot.
- 12. Check for clearance at the clevis for the pin attaching the roll out cylinder. Observe the harness at the lower hopper pivot. Check for any possible pinching, binding, or catching in this area as the hopper is raised and lowered.
- 13. With the hopper fully raised, slowly roll out the hopper in short increments, observing the harness at the lower hopper pivot area, again checking for any binding, pinching, or catching upon structure in this area.
- 14. Lower the hopper approximately halfway in short increments and observe the lower pivot area again for any interference with the harness. At this point, roll in the hopper again slowly in short increments and observe the lower pivot area.
- 15. If any binding or interference was noted in the above steps, re-route the harness as necessary to correct the condition.
- 16. Run the hopper up and down several times and roll out the hopper in different raised positions and again recheck the harness for any signs of binding or interference.

TO TEST R.F.S. OPTION:

- 1. The RFS is set up to begin operation when the filters build up enough dust or debris to reach a vacuum pressure of approximately 20" H2o within the upper chambers of the hopper.
- 2. With the hopper cover open, start the engine and observe filter shutters. The shutter in the right hand duct assembly (operators side) should open, and the left hand shutter should close.
- 3. With the engine running, apply a vacuum source of 22–30" H2o vacuum pressure to the right vacuum port (operators side) inside the hopper. The port is attached to the vacuum hose from the pressure switch mounted on the rear of the hopper.
- 4. The RFS cycle should begin when a vacuum source is applied. The initial cycle runs in this order: **A.** The left hand shaker should run for a few seconds, and pause.

B. The right hand shutter should close, and simultaneously, the left hand shutter should open

C. The right hand shaker should run for 30–40 seconds. At this point the RFS system is waiting for another high vacuum signal from the left hand vacuum port.

5. Apply a vacuum source of 22–30" H2o vacuum pressure to the left hand vacuum port at inside of hopper. This should initiate the secondary RFS cycle which runs as follows:

A. The right hand shaker motor runs for a few seconds, and pause.

B. The left hand shutter should close, and simultaneously, the right hand shutter should open.

C. The left hand shaker should run for 30–40 seconds. At this point the RFS system is waiting for the next high vacuum signal from the right hand vacuum port, which brings the RFS back to the initial cycle step.

NOTE: Successful operation of the RFS option requires clean, undamaged filters at installation. Plugged filters may cause the RFS to cycle continuously even at start up. The option also requires good sealing of the upper lid to the hopper, as well as a good seal between the two upper filter chambers. Insure that all RTV adhesive has cured properly before closing hopper cover and operating machine.

IMPORTANT NOTES:

- : Normally, RFS does not require the operator to stop the machine to shake the filters during sweeping operation (except in extreme and severe dust environments). However, it is recommended that the filters are shaken at the operator's initiative each time the hopper is dumped. This can be accomplished during transit to a dump sight. *AVOID* shaking the filters while hopper is in a rolled out position. To initiate a shaking cycle, press the filter button on the instrument panel.
- After pushing the filter button, *both* filters will shake for approx. 40 seconds. The vacuum fan will *not* run when the operator initiated shake mode is actuated. To disengage the operator initiated shake mode before 40 second timer runs out, press the filter button on the instrument panel once again.
- In very severe dust environments, the plugged filter indicator on the instrument panel may remain lit. When this occurs, it is recommended that the operator stop the machine and initiate one or two shake cycles to clear a possible plugged filter condition. After shaking, roll the hopper out to evacuate the dust tray. Resume sweeping operation.
- : If the hopper is over full, the light may come on. Check the hopper load and dump if necessary.
- If the filter light remains on after all the above conditions are corrected, the filters may be plugged or the RFS may be inoperative. Filters may be shaken by the operator initiative by pressing the filter button on the instrument panel if there is a failure in the RFS control system.
- It is recommended that the machine be driven for some test sweeping with the RFS option at initial start up. This next step assumes the hopper cover and upper filter chamber of the hopper was cleaned thoroughly prior to installation of the RFS option. Sweep for 30 minutes and open the hopper cover to check the integrity of the seals. Look at the top of the shaker panels and the underside of the hopper cover. Check for any signs of *dust tracking* that may be caused by a bad seal or filter. Repair a necessary. Perform this check periodically while using the sweeper with the RFS option.
- If severe dusting of the machine occurs, check all the brush seals and skirts for damage. Check seal from vacuum fan to the rear of the hopper. Check the brush recirculation flap for proper position. Check hopper filters for damage or a plugged condition. Damaged filters or seals in the shaker panels or hopper lid are often indicated by excessive accumulation of dust inside bottom of the filters. Accumulation of dust at the bottom of the filters will prevent the diaphragm valve from functioning, and contribute to plugging condition.
- : Harness 83706 is only used on the following models: Model 800 (serial # 0000 thru 1699) Model 810 (serial # 0000 thru 2299)

BILL OF MATERIALS FOR KIT 79174

Ref.	TENNANT Part No.	Description	Qty.
1	79160	RFS Duct	2
2	79156	Shutter plate	2
3	79159	Pivot shaft	4
4	06932	Pan screw, M5 x 0.8	8
5	32676	Sealant, Anaerobc-0.5 ml 242blu	1
6	11747	Nylon bearing	4
7	79158	Coupling	2
8	20634	Set locknylon screw, 10 - 24 x 1/4"	4
9	79157	Gearmotor mounting bracket	2
10	11635	Hex screw, nylon loc M6 x 1.0 12 ss	4
11	32490	Flat washer, 1/4" Hard	6
12	79170	Geared electric motor, 12 vdc	2
13	79172	O-Ring seal, 25/32" Id x 7/32" Th	2
14	41181	Pan screw, 08 - 32 x 3/8"	8
15	02938	Internal lock washer, 08	8
16	79167	Seal	2
17	79155	Motor cover	2
18	74455	Hexforming screw, M6 x 1.0 12	30
19	79168	Seal	2
20	16958	Hexforming screw, .31-18x.50 Pltd	6
21	12459	Hexforming screw, M6 x 1.0 20 Pltd	12
22	08708	Hexlocknylon nut, M6 x 1.0	12
23	79177	Control mounting plate	1
24	34738	Pop rivet, 1/8" Dia x 5/16" x 1/4" Dhd St	6
25	79176	Controller assembly	1
26	56186	Shrouded relay, 12 vdc	4
27	32029	Pressure switch	1
28	10632-4	Rubber grommet, 5/8" Id, 1/16" Matl	1
29	82739	Breather fitting	1
30	40607	Brass straight fitting, Bm03/Pm02	1
31	21301	Vacuum hose, 5/32" ld x 76.0" Lg	1
32	46236	Cable clamp .25 x .56	3
33	79025	Duct motor harness	2
34	79026	Hopper harness	1
35	79169	Electrical cover	1
36	40678	Cable clamp .44 x .62	2
37	49266	Cable tie 7.5" I	12
38	44961	Cable tie, 4.0" Max x 14-1/2" Lg	14
39	34864	Strain relief	2
40	57803	15 amp circuit breaker	2

BILL OF MATERIALS FOR KIT 79174 (continued)

41	70851	Urethane seal	1
42	08317	RTV sealant, 3.0 oz.	1
43	47037	Contact adhesive #1357 5.0 oz	1
44	23935	Urethane seal	2
45	39923	Barbed fitting	1
46	43454	Nylon washer	1

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