



Manual 3

RESIDENTIAL

TECHNICIANS'

OPERATING

MANUAL

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RD	Residential Dispatcher
RT	Residential Technician
ROM	Residential Operation Manager
RSM	Residential Sales Manager
RSR	Residential Sales Rep
RTT:	Residential Technician Training

1. THE PURPOSE OF THIS MANUAL

“French Fries, its best-selling menu item, always has 19 ingredients. It has implemented Global Brand Standards for all its restaurants. Franchised restaurants could be inspected more than once a month with consequences.” - **McDonald’s**

“I am a paper pusher, I have no imagination, I write everything literally and apply them integrally.” - **Dan Zhou**

- 1.1 This manual outlines in detail what the RTs are expected to accomplish in the course of his/her workday. These are not recommendations, suggestions or opinions. They are operating procedures that all RTs are required to follow to the letter. The wisdom of these procedures comes from years of practice. We have no time to reinvent the wheel but are always open to improving it.
- 1.2 While the Company understands that some of the instructions may be missed in the daily grind, any omission should be exceptional rather than chronic. We are a dynamic company in a dynamic industry. This OM is a live document that should evolve on a timely base. If anything in this OM is obsolete, wrong, irrelevant or redundant, it should be brought to the ROM’s attention. If the ROM does not respond or overrules the RT, the RT may escalate to the next level of authority. Until the OM is updated, RTs should follow it as it is.
- 1.3 It is understood that not all houses require the RT to follow all the steps listed in this OM. Some of the procedures just do not apply to a given house at a given time. The Company is making it clear that steps may be skipped because they do not apply to a given job, NOT because the RT deems them unnecessary. For instance, the RT does not need to explain the add-ons to a builder. However, it is not for the RT to decide whether a magnet cover is necessary. It always is. In any circumstance, ask the ROM for permission, not forgiveness.
- 1.4 This OM is created to ensure a safe workplace for the RTs and consistent quality service for the customers. Regular quality inspections will be based on the provisions of this OM. Serious transgression or repeated violations may lead to termination with cause and without notice or compensation per sections ***II-G-1***

and **III-E-28.2** of the Employee Handbook.

2. THE START OF THE WORK SHIFT

- 2.1 Punch-in for the scheduled shift upon arrival at the shop/satellite location.
- 2.2 Perform daily vehicle/equipment inspection and fill Form 13A or 13B for the assigned vehicle.
- 2.3 Open the Servicebox App and ensure that all required equipment for all tasks are accounted for.
- 2.4 Click “ On-route “ and proceed directly to the first service call.

3. THE ARRIVAL AT A JOB SITE

- 3.1 Email the homeowner to announce our impending arrival and remind him/her of our “Add-on” services before every appointment.
- 3.2 Back into the driveway with a clearance of 10 feet minimum from the house at all times. Such buffer eliminates the risk of damaging any eavestrough on top of the garage doors.
- 3.3 Park as close to the nearest access to the furnace as possible if using a Heat Seal truck-mount. The shorter the vacuum hose, the stronger the suction.
- 3.4 When there are 2 technicians in the vehicle, the 2nd Technician must get out of the vehicle and spot & direct the driver to back up. Pay extra attention to eavestroughs, parked vehicles, the lawn and tree branches.
- 3.5 Place a yard sign at the end of the driveway or at the edge of the front lawn upon arrival.
- 3.6 Retrieve the tool bag, ring the doorbell and greet the customer in a professional manner. Introduce yourself by giving your name and our brand: Power Vac or National Duct.

4. THE INSPECTION

- 4.1 Give the homeowner our menu of add-ons and let him/her know that you are available to answer any of his or her questions.
- 4.2 Ask the customer for the location of the thermostat, turn the setting to HEAT and increase the inside temperature of the house by 5 degrees.
- 4.3 Ensure that the furnace is working by visual confirmation of the flame in the furnace. For geothermal, electric, water combo, propane or oil systems, ensure that heated air is present at a floor vent.
- 4.4 Locate the furnace switch either above the furnace, by the furnace room door or at the base of the stairs to shut the furnace off. Geothermal and electric furnaces have more than one (1) shut-off function.
- 4.5 Inspect the basement for any other exposed ductwork that isn't in the main furnace room. For instance: secondary drop box, ends of heating or return main trunks.
- 4.6 Inspect the layout of the house and utilize the shortest route back to the truck for truck-mount equipment
- 4.7 Inspect the location of electrical outlets with 220 volts and plug the portable vacuum directly in.
- 4.8 If the job cannot be performed due to space restrictions or any other technical hurdles, the RT has to call his/her ROM to get guidance or the green light to cancel the job. The RT should not ask the RSM, RSR or the RD, since neither of them has the authority to cancel a job due to technical difficulties. If the office cannot locate any ROM, talk to Darwyn McDowell.

5. THE SET-UP

- 5.1 Cut two (2) 8-inch access holes in the supply and the return main trunk lines. If an 8-inch hole isn't obtainable, reduce the size and create an access hole.
- 5.2 When A/C coils are present, cut a vacuum access hole closest to the top of the coil without hitting it. Cut another access hole under the coil for inspection/cleaning where applicable.
- 5.3 When A/C coils are not present, cut a vacuum access point just above the furnace and insert 4-6 metal plates to "Zone Off" the system. This step protects against any debris falling into the heat exchanger.
- 5.4 Attach the vacuum flange hose to the supply access point and continue to add additional vacuum hose sections going back to the truck. Place magnet covers on wall corners to protect the hose from damaging the walls and baseboard.
- 5.5 Bring in the Hyper Vac vacuum unit and place it close to the furnace. Find two separate circuits of 110 volts or a 220 volts outlet from a dryer/stove. Plug on and turn on.
- 5.6 Start the side engine on a Heat Seal unit and increase the vacuum to 2000 RPM. The reciprocating compressor will build up air pressure while you complete the set-up.
- 5.7 Start the air compressor on the side of the Transit van to build up air pressure while the set-up is being completed.
- 5.8 Run the air hose from the vehicle to the furthest register in the house, usually on the top floor.
- 5.9 If there is a hardwood floor, use a clean rag from the truck to wrap the coupler (connection joint) to make sure it does not damage the floor.
- 5.10 Put a magnetic register cover on each register in the house. If the register is too large for one magnet to cover, use as many as you have to provide a full sealing. This step must never be skipped.

6. THE CLEANING

- 6.1 When pressure has built up in the compressor to 250 PSI, take the magnet cover off the register furthest from the furnace, usually at the end of the duct run, and blow any dust in it down into the duct.
- 6.2 Remove the register cover.
- 6.3 If the register is on a wall, be careful not to chip any paint or tear any wallpaper when you remove the cover. If you need to cut around the cover with a utility knife first to protect the paint or wallpaper from chipping or ripping, ask the customer before proceeding so that the Company is not held responsible for chipped paint or damaged walls in doing so. If the customer declines, then, only clean the access given. Make a note in Servicebox.
- 6.4 If there are two registers back to back in two different rooms separated by a common wall, be careful not to blow the magnet cover off of the register in the other room. If this happens, dirt will be blown back into the other room creating a “ blow-back / blow-out “ situation instead of blowing it down the duct.
- 6.5 Push any dirt that may have fallen from the cover back into the duct.
- 6.6 Use the compressed air to blow the dirt down into the duct to be collected by the vacuum.
- 6.7 When you have finished with each register, recover with the magnet and move on to the next one. Repeating steps 6.1 to 6.6 until all supply vents are completed on the upper and lower floors.
- 6.8 Switch the vacuum hose to the return side of the system and repeat steps 6.1 to 6.6 on the upper and main floors of the house. Add step 6.9 on any floor-level return vent to help push dirt and debris to the basement level.
- 6.9 Attach the scorpion head onto the scorpion rods and insert it into the return vent. Then, squeeze the thumb valve to push everything down towards the vacuum.
- 6.10 Attach the air wand and blow all loose debris and dirt towards the vacuum.

- 6.11 Inspect the return vent with a flashlight and mirror or take a picture with your phone to ensure the return run is clean. If it is, put the return grille and magnet cover back in place, and move on to the next return.
- 6.12 If the basement is unfinished:
 - 6.12.1 Attach the scorpion head onto the scorpion rods and insert it into the 1 inch drilled hole closest to the far end of the run. Squeeze the thumb valve and push everything in the ductwork toward the vacuum.
 - 6.12.2 Insert the air wand into the 1-inch hole and blow all debris towards the vacuum. Bang on the ductwork with your fist to check if you can hear any debris remaining. If there is no indication of debris, plug the hole with a black 1 inch plug and move on to the next hole and repeat the process.
- 6.13 If the basement is finished, insert the reverse skipping ball into the ductwork at the furthest accessible point and send it down all the way to the end. Pull the ball back to the hole and send it back down again. Do this several times until you no longer see or hear any dust coming out.
- 6.14 When both runs are done, vacuum up any loose dirt from inside the fan compartment and then clean the fan by holding the fan on one side and blowing air from the other side. Release the thumb valve, rotate the fan and blow air across the fan blades. Repeat this process until the entire fan is cleaned.
- 6.15 Clean the filters by holding them in front of the vacuum hose and blowing the dirt off them into the vacuum hose.
- 6.16 Inspect the top of the A/C Coil for loose debris. If there is debris, use a shop vac and crevice tool to clean the top of the coil.
- 6.17 If the A/C coil is elevated by
 - 6.17.1 more than 5 inches off the top of the furnace, cut an access hole in the plenum to inspect the bottom of the coil. Clean if necessary.
 - 6.17.2 Less than 5 inches, drill two 1-inch holes and inspect the bottom of the coil. Plug with black plugs afterward. If there is no clearance, underneath coil inspections can't be done.
- 6.18 Place the filter back into the filter housing with the filter arrow pointing towards the furnace. Put the bottom furnace door back on. The cleaning is now complete.

6.19 Sanitize the ductwork if the homeowner asks it to be cleaned as an add-on.

7. THE TEARDOWN

- 7.1 Turn the furnace switch back on to re-start the furnace and start the burn-off process
- 7.2 Ensure proper re-activation of the furnace by witnessing the burner flame lit and the system running. If there is no burner flame, check for heated airflow coming from a vent.
- 7.3 If it doesn't start, the pilot light may have blown out. Re-light it and start the furnace again. Make sure the bottom furnace door is on properly, the furnace switch is on, and the thermostat is set to heat. If the system still doesn't restart, contact your ROM for assistance.
- 7.4 Check for any burning smells. Dust may have settled on the heat exchanger, but it will burn off quickly.
- 7.5 If the burning smell continues, run the vacuum for another 5-10 minutes. If the smell persists, shut the system off and re-inspect the system.
- 7.6 If everything is fine, shut off the side engine of the truck.
- 7.7 Collect the vacuum and air hoses, and place them all back in the truck
- 7.8 Clean up any mess you made such as sheet metal scraps, dropped screws, 1-inch drilled hole pieces. Wipe off any fingerprints on walls, vent covers, etc. This is the most common cause of customer complaints leading to callbacks because it is so easy to spot.
- 7.9 Collect all the magnets. Count the registers as you collect the magnets because the final invoice depends on accurate vent count. We don't want to leave money on the table and we don't want to overcharge the homeowner by even one vent.
- 7.10 Leave three or four plastic skipping line hole plugs on top of the water heater in case you left any oven holes on the duct line. Place a Power Vac/National Duct sticker on the furnace.
- 7.11 Clean the dryer vent if the homeowner asks it to be cleaned as an add-on.

8. THE PAYMENT

- 8.1 Make sure the price is correct based on the number of registers. If there are more or less vents than originally reported by the homeowner, make the change in the quote. If the customer is paying by credit card, add the 2.5% bank charges. Create the invoice and process the payment on-site.
- 8.2 Payment options are debit or credit Card.
- 8.3 If the homeowner insists on paying by credit card, charge the 2.5 %, no exceptions since all customers have been notified of the charge.
- 8.4 If the payment process cannot be completed, DO NOT leave. Call the office while still in the house, and have the office resolve the issue with the homeowner.
Although it may delay your next job by 10-15 minutes, once you leave, it will take weeks for us to collect the money. This is a retail business, you don't leave a food truck without paying.
- 8.5 Email the customer a copy of the invoice showing the payment.
- 8.6 Thank the customer and ask for a Google Review.
- 8.7 Change the status of the invoice to "Invoiced". Change the status of the work order to "Closed".

9. THE COMING BACK

- 9.1 RTs are expected to go back to the shop at the end of the day using the fastest route. Driving on the 407 ETR is forbidden. It is not time to have dinner or run personal errands while on the clock. These activities should be done after signing out using the RTs' personal vehicles.
- 9.2 The RT should fill up the vehicle and side engine tanks at the end of every shift.
- 9.3 The RT is expected to leave the vehicle with everything he/she brought with him/her at the start of the shift. That means he/she should not leave behind any personal items such as food wrappings, drink containers, unfinished food,

napkins, utensils, etc. It is an issue of personal respect, Company image, peer courtesy and health & safety.