

LPT-03 NATURAL GAS TO LP GAS CONVERSION KIT(S) INSTALLATION INSTRUCTIONS

Goodman Manufacturing Company, L.P. © 2009-2010
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Description

This Natural Gas to L.P. Gas conversion kit allows the 36G22 (B1282628) and VR-8215 (0151M00013) Series gas valves to be used on L.P. gas applications. This conversion kit is for use on all single stage maximum regulation valves.


Prior to performing this conversion refer to the National Fuel Gas Code (ANSI Z223.1) or in Canada, CAN/CGA-B149.2-M91 to ensure that the installation is in compliance with those and all local codes.

PLEASE READ AND FOLLOW THESE INSTRUCTIONS CAREFULLY.

| Required Tools for Kit Installation | |
|-------------------------------------|---|
| 2 | Pipe Wrenches, properly sized to accommodate the gas piping and connectors |
| 1 | 7/16" box wrench or socket wrench |
| 1 | 5/16" Nut driver |
| 1 | 1/4" regular (flatblade) screwdriver |
| 1 | 3/32" Allen wrench |
| 2 | Manometers to read inlet & outlet pressure of the gas valve (Minimum range: 0" - 15" W.C.) |
| 1 | 3/16" Allen wrench |
| 2 | 1/8" NPT hose barb |
| | Pipe joint compound or pipe thread tape |
| | Gas leak detection solution, like a soap and water solution. Always wipe the solution from the joints when testing is complete. |

 **WARNING**

TO AVOID THE POSSIBILITY OF EXPLOSION OR FIRE, NEVER USE A MATCH OR OPEN FLAME TO TEST FOR LEAKS.

 **WARNING**

GOODMAN WILL NOT BE RESPONSIBLE FOR ANY INJURY OR PROPERTY DAMAGE ARISING FROM IMPROPER SERVICE OR SERVICE PROCEDURES. THIS L.P. (LIQUID PETROLEUM) CONVERSION KIT **MUST** BE INSTALLED BY A QUALIFIED SERVICE PERSON OR AGENCY IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND ALL APPLICABLE CODES AND REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. FAILURE TO FOLLOW THESE INSTRUCTIONS EXPLICITLY MAY CAUSE A FIRE, EXPLOSION OR THE PRODUCTION OF CARBON MONOXIDE, WHICH CAN CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH. IF YOU INSTALL OR PERFORM SERVICE ON THIS UNIT, YOU ASSUME RESPONSIBILITY FOR ANY PERSONAL INJURY OR PROPERTY DAMAGE WHICH MAY RESULT. MANY JURISDICTIONS REQUIRE A LICENSE TO INSTALL OR SERVICE HEATING AND AIR CONDITIONING EQUIPMENT.

 **WARNING**

TO AVOID THE POSSIBILITY OF EXPLOSION OR FIRE, NEVER USE A MATCH OR OPEN FLAME TO TEST FOR LEAKS.

 **RECOGNIZE THIS SYMBOL AS A SAFETY PRECAUTION**

ATTENTION INSTALLING PERSONNEL

As a professional installer, you have an obligation to know the product better than the customer.
This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair, it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is **your** responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense... a matter of thinking before acting.
Most dealers have a list of specific, good safety practices... follow them.


The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.




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IMPORTANT INFORMATION


DANGER
PELIGRO



CARBON MONOXIDE POISONING HAZARD

Special Warning for Installation of Furnaces or Air Handling Units in Enclosed Areas such as Garages, Utility Rooms or Parking Areas


Carbon monoxide producing devices (such as an automobile, space heater, gas water heater, etc.) should not be operated in enclosed areas such as unventilated garages, utility rooms or parking areas because of the danger of carbon monoxide (CO) poisoning resulting from the exhaust emissions. If a furnace or air handler is installed in an enclosed area such as a garage, utility room or parking area and a carbon monoxide producing device is operated therein, there must be adequate, direct outside ventilation.

This ventilation is necessary to avoid the danger of CO poisoning which can occur if a carbon monoxide producing device continues to operate in the enclosed area. Carbon monoxide emissions can be (re)circulated throughout the structure if the furnace or air handler is operating in any mode.

CO can cause serious illness including permanent brain damage or death.

B10259-216

! **WARNING**



HIGH VOLTAGE
DISCONNECT ALL ELECTRICAL POWER AND SHUT OFF GAS SUPPLY BEFORE SERVICING OR INSTALLING.
MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

! **WARNING**

IF THE GAS FURNACE IS INSTALLED IN A BASEMENT, AN EXCAVATED AREA OR A CONFINED SPACE, IT IS STRONGLY RECOMMENDED TO CONTACT A PROPANE SUPPLIER TO INSTALL A GAS DETECTING WARNING DEVICE IN CASE OF A GAS LEAK.

- **SINCE PROPANE GAS IS HEAVIER THAN AIR, ANY LEAKING GAS CAN SETTLE IN ANY LOW AREAS OR CONFINED SPACES.**
- **PROPANE GAS ODORANT MAY FADE, MAKING THE GAS UNDETECTABLE EXCEPT WITH A WARNING DEVICE.**

! **WARNING**

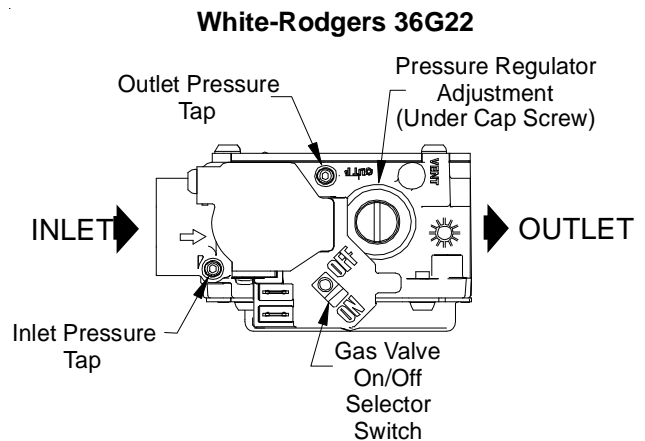
TO AVOID PERSONAL INJURY, PROPERTY DAMAGE OR DEATH, DUE TO LEAKING GAS, CONTACT YOUR PROPANE SUPPLIES ABOUT INSTALLING A GAS DETECTING WARNING DEVICE. IRON OXIDE (RUST) CAN REDUCE THE LEVEL OF ODORANT IN PROPANE GAS. A GAS DETECTING DEVICE IS THE ONLY RELIABLE METHOD TO DETECT A PROPANE GAS LEAK.

! **CAUTION**

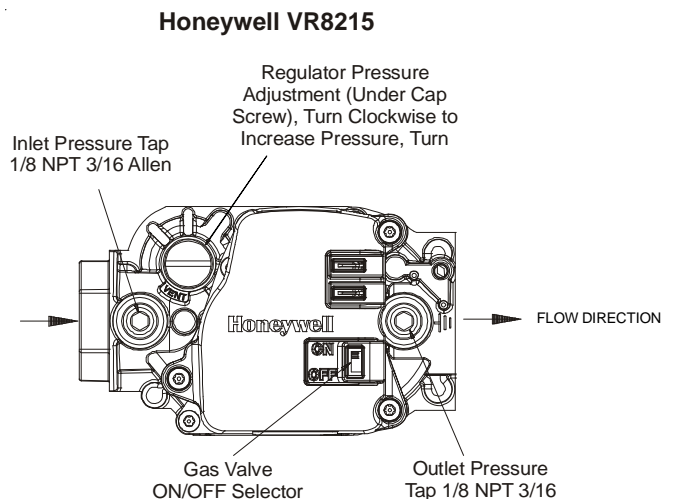
TO AVOID THE RISK OF PROPERTY DAMAGE, PERSONAL INJURY OR FIRE, SHUT OFF GAS SUPPLY FIRST, THEN DISCONNECT THE ELECTRICAL SUPPLY BEFORE PROCEEDING WITH CONVERSION.

BEFORE BEGINNING CONVERSION: **VALVE IDENTIFICATION**

Before beginning conversion, the type valve you have must be identified. Compare the gas valve presently on the equipment to the drawing below to identify the correct valve you are working with. Page numbers for the instructions for that valve are below each drawing.



Instructions for this valve start on page 3.



Instructions for this valve start on page 5.

WHITE-RODGERS 36G22 CONVERSION INSTRUCTIONS

CAUTION

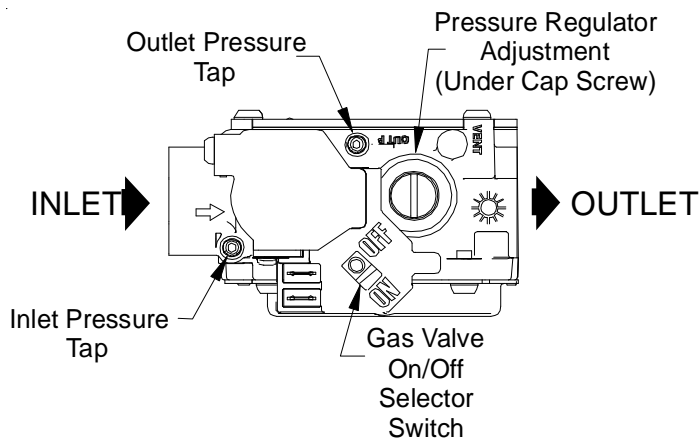
TO PREVENT UNSATISFACTORY FURNACE OPERATION, THE PROPER GAS CONVERSION KIT MUST BE USED FOR THE GAS VALVE. USE THE WHITE-RODGERS SPRING KIT ONLY WITH THE WHITE-RODGERS GAS VALVE.

NOTE: For low NO_x models, see page 6 for NO_x screens.

1. Turn off gas supply to the furnace.
2. Turn off the electrical power to the furnace.
3. Remove the furnace control access panel.
4. Separate the gas supply union and remove associated downstream piping.

NOTE: Always use a backup wrench when removing or replacing piping to avoid any undue strains or rotation of controls.

5. Remove the wires from the gas valve.
6. Remove the 4 sheet metal screws that fasten the manifold/gas valve assembly to the burner box.
7. Using the 7/16" wrench, remove all existing natural gas orifices and replace with the appropriate L.P. gas orifices contained in this kit. Tighten the orifices to prevent gas leaks, but do not overtighten. Retain the natural gas orifices for future reconversion.
8. Reinstall the manifold/gas valve assembly into the appliance. Rewire the gas valve.
9. Using a 3/32" Allen wrench, loosen the inlet and outlet pressure tap screw one (1) turn only (DO NOT REMOVE). Attach a length of 5/16" hose to each of the pressure tap bosses. Connect the 5/16" hose to two (2) separate manometers or other adequate gauges having a scale range of at least 0" to 15" of water column.



White-Rodgers 36G22

10. Using a flat blade screwdriver, remove the regulator cover screw.
11. Using a flat blade screwdriver, remove plastic regulator adjustment screw located beneath the cover screw.
12. Remove the natural gas regulator spring from the regulator sleeve.
13. Insert the kit (Goodman P/N B1880007, WR F92-0999) provided L.P. regulator spring into the regulator sleeve.
14. Replace the regulator adjustment screw.
15. Apply a liberal amount of pipe joint compound or pipe thread tape to the threads and reassemble the piping previously removed. Note: the pipe joint compound must be resistant to L.P. gas.
16. Turn on the gas supply and check for leaks.

WARNING

TO AVOID THE POSSIBILITY OF EXPLOSION OR FIRE, NEVER USE A MATCH OR OPEN FLAME TO TEST FOR LEAKS.

17. Turn on the electrical supply.
18. Adjust the room thermostat to allow for constant operation.
19. **If you have the correct manifold pressure and the burners do not light, there may be air trapped in the lines. Follow these instructions:**

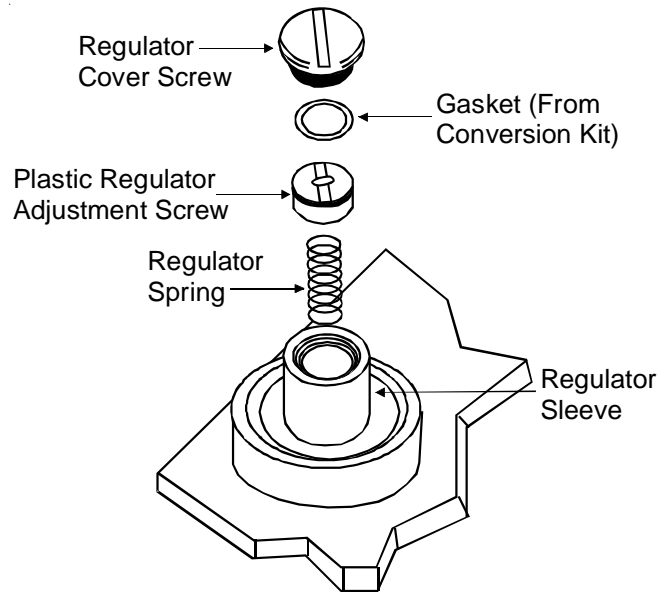
To check for air trapped in the supply line: Verify line pressure is in the correct range. If manifold pressure is indicated during the ignition trial, the valve is opening and air may be in the line.

Units with hot surface ignitors: The valve will not open until the ignitor is at the proper temperature (glowing brightly).

Units with spark ignition: The valve will open as soon as the spark starts. If no manifold pressure is indicated during the trial for ignition, please return to step 13 to ensure the correct spring was used and to ensure the regulator adjustment is near the bottom of the adjustment range.
20. If gas inlet pressure falls outside the range of 11" and 13" W.C. after the unit has been in operation for 15 minutes, adjust the gas supply pressure (not manifold pressure), check piping size, etc., and/or consult with local utility.

NOTE: Any other gas-fired equipment should be ON before any adjustments are made.
21. Check manifold pressure. For propane gas, the manifold pressure must be between 9.5" and 10" W.C.

22. Turn adjustment screw out (counterclockwise) to decrease pressure, turn in (clockwise) to increase pressure. Only small variations in gas flow should be made by means of the pressure regulator adjustment. In no case should the final manifold pressure vary more than plus or minus 0.3" water column from the specified nominal pressure. Any major changes in flow should be made by changing the size of the burner orifices. The measured input rate to the furnace must not exceed the rating specified on the unit rating plate.
23. Reset all other appliances so they function normally.
24. Turn off gas and electrical supply to the furnace, remove the manometer hose from the pressure tap bosses, and tighten the inlet and outlet pressure tap screws using the 3/32" Allen wrench.
25. If regulator adjustment screw (removed in step 11) is white, the gasket supplied with the kit must be installed on the regulator cover screw. The gasket is not required if the regulator adjustment screw is black.
26. Replace the regulator cover screw on the regulator sleeve.
27. Attach the kit provided WARNING label to the gas valve where it can be readily seen. Also attach the small round L.P. label to the top of the regulator cover screw.
28. Turn on the gas and electrical supply, energize the appliance and recheck for leaks.
29. Observe at least 3 ignition cycles to assure quick and smooth ignition and burner operation.
30. Reinstall the access panels.



36G22 MODEL

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| CAUTION |
| TO AVOID THE RISK OF PROPERTY DAMAGE, PERSONAL INJURY OR FIRE, SHUT OFF GAS SUPPLY FIRST, THEN DISCONNECT THE ELECTRICAL SUPPLY BEFORE PROCEEDING WITH CONVERSION. |

Note: Conversion instructions for the Honeywell VR8215 gas valve begin on the following page.

HONEYWELL VR8215 CONVERSION INSTRUCTIONS



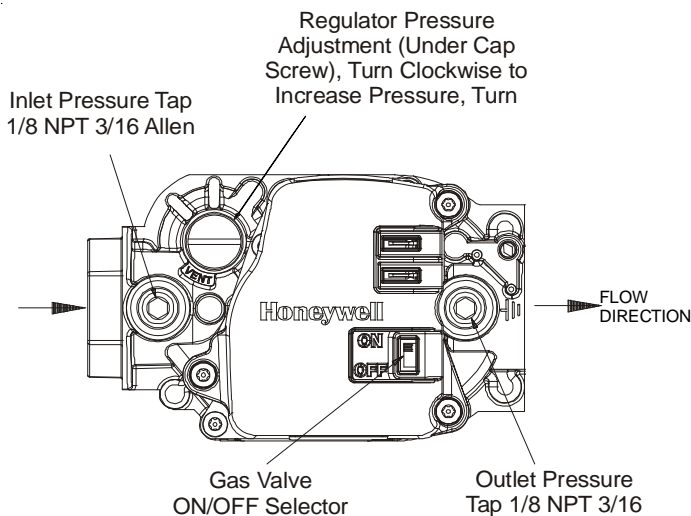
CAUTION

TO PREVENT UNSATISFACTORY FURNACE OPERATION, THE PROPER GAS CONVERSION KIT MUST BE USED FOR THE GAS VALVE. USE THE HONEYWELL SPRING KIT ONLY WITH THE HONEYWELL GAS VALVE.

NOTE: For low NOx models, see page 6 for NOx screens.

1. Turn off gas supply to the furnace.
2. Turn off the electrical power to the furnace.
3. Remove the furnace control access panel.
4. Separate the gas supply union and remove associated downstream piping.

NOTE: Always use a backup wrench when removing or replacing piping to avoid any undue strains or rotation of controls.



Honeywell VR8215

5. Remove the wires from the gas valve.
6. Remove the 4 sheet metal screws that fasten the manifold/gas valve assembly to the burner box.
7. Using the 7/16" wrench, remove all existing natural gas orifices and replace with the appropriate L.P. gas orifices contained in this kit. Tighten the orifices to prevent gas leaks, but do not overtighten. Retain the natural gas orifices for future reconversion.
8. Reinstall the manifold/gas valve assembly into the appliance. Rewire the gas valve.
9. Remove both the inlet and outlet plugs on the gas valve, using the 3/16" Allen wrench. Install the fittings which accompany the manometers into the 1/8" taped holes of the gas valve. Connect the manometers to the barbed fittings.

10. Using a flat blade screwdriver, remove the regulator cover screw.
11. Using a flat blade screwdriver, remove plastic regulator adjustment screw located beneath the cover screw.
12. Remove the natural gas regulator spring from the regulator sleeve.
13. Insert the kit (Goodman P/N 0163M00078, Honeywell P/N 396221) provided L.P. regulator spring into the regulator sleeve.
14. Replace the natural gas regulator adjustment screw with the L.P. regulator adjustment screw included in the kit.

NOTE: The LP regulator should be adjusted near the bottom of the adjustment range. DO NOT OVER-TIGHTEN.
15. Apply a liberal amount of pipe joint compound or pipe thread tape to the threads and reassemble the piping previously removed.

NOTE: the pipe joint compound must be resistant to L.P. gas.
16. Turn on the gas supply and check for leaks.



WARNING

TO AVOID THE POSSIBILITY OF EXPLOSION OR FIRE, NEVER USE A MATCH OR OPEN FLAME TO TEST FOR LEAKS.

17. Turn on the electrical supply.
18. Adjust the room thermostat to allow for constant operation.
19. **To check for air trapped in the supply line:** Verify line pressure is in the correct range. If manifold pressure is indicated during the ignition trial, the valve is opening and air may be in the line.

Units with hot surface ignitors: The valve will not open until the ignitor is at the proper temperature (glowing brightly).

Units with spark ignition: The valve will open as soon as the spark starts. If no manifold pressure is indicated during the trial for ignition, please return to step 13 to ensure the correct spring was used and to ensure the regulator adjustment is near the bottom of the adjustment range.
20. If gas inlet pressure falls outside the range of 11" and 13" W.C. after the unit has been in operation for 15 minutes, adjust the gas supply pressure (not manifold pressure), check piping size, etc., and/or consult with local utility.


NOTE: Any other gas-fired equipment should be ON before any adjustments are made.
21. Check manifold pressure. For propane gas, the manifold pressure must be between 9.5" and 10" W.C.

22. Turn adjustment screw out (counterclockwise) to decrease pressure, turn in (clockwise) to increase pressure. Only small variations in gas flow should be made by means of the pressure regulator adjustment. In no case should the final manifold pressure vary more than plus or minus 0.3" water column from the specified nominal pressure. Any major changes in flow should be made by changing the size of the burner orifices. The measured input rate to the furnace must not exceed the rating specified on the unit rating plate.
23. Reset all other appliances so they function normally.
24. Turn off the gas and electrical supply to the appliance, remove the pressure taps at the gas valve, reinstall the plugs using pipe joint compound or tape.

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|---|
|  WARNING |
| <p>TO AVOID THE POSSIBILITY OF EXPLOSION OR FIRE, NEVER USE A MATCH OR OPEN FLAME TO TEST FOR LEAKS.</p> |

25. Replace the regulator cover screw on the regulator sleeve.
26. Attach the kit provided ATTENTION label to the gas valve where it can be readily seen.
27. Turn on the gas and electrical supply, energize the appliance and recheck for leaks.
28. Observe at least 3 ignition cycles to assure quick and smooth ignition and burner operation.
29. Reinstall the access panels.

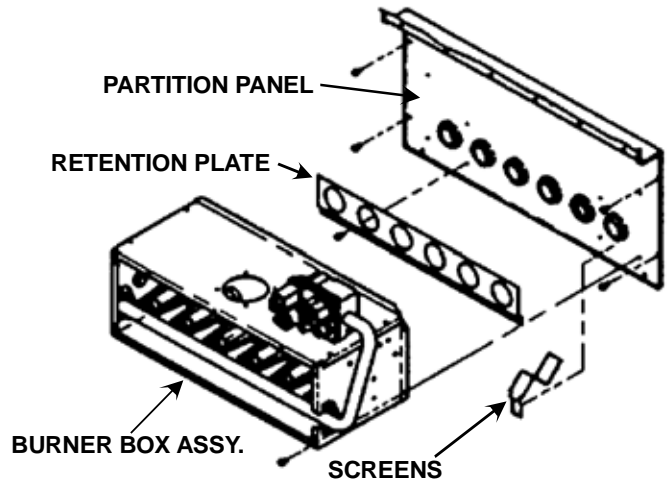
NOx SCREEN REMOVAL

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|---|
|  WARNING |
| <p>REMOVE ALL METAL SCREENS FROM THE HEAT EXCHANGER TUBES WHEN USING PROPANE GAS. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH AND <u>WILL VOID WARRANTY COVERAGE.</u></p> |

NOTE: To prevent premature heat exchanger failure, follow the instructions in the NON-CONDENSING FURNACES AND PACKAGE GAS-ELECTRIC section to remove all metal screen inserts from the entrance of heat exchanger tubes during propane conversions. Not all models will have metal screen inserts.

NON-CONDENSING FURNACES AND PACKAGE GAS-ELECTRIC

1. Remove the screws securing the burner box to the partition panel. Separate burner box from unit.
2. Remove the screw(s) securing the NOx screen retention plate and remove the plate.
3. Remove and discard NOx screens.
4. Reinstall the NOx screen retention plate and burner box.



Typical Nox Screen Removal

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NOTE: SPECIFICATIONS AND PERFORMANCE DATA LISTED HEREIN ARE SUBJECT TO CHANGE WITHOUT NOTICE

Quality Makes the Difference!

All of our systems are designed and manufactured with the same high quality standards regardless of size or efficiency. We have designed these units to significantly reduce the most frequent causes of product failure. They are simple to service and forgiving to operate. We use quality materials and components. Finally, every unit is run tested before it leaves the factory. That's why we know. . . **There's No Better Quality.**

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- Contractor Programs and Training
- Financing Options

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