DWOT Fuel Oil Storage Tanks

LICENSED INSTALLER INSTRUCTIONS
For Single Tank Installations

IMPORTANT INFORMATION – FOLLOW ALL INSTRUCTIONS

LISTED UL 2258

LISTED ULC-S670

ABOVEGROUND NONMETALLIC TANK FOR FUEL OIL AND OTHER COMBUSTIBLE LIQUIDS

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1. Scope

These guidelines cover nonmetallic CLOSED SECONDARY CONTAINMENT TANKS WITH SUPPORT (CANADA) AND DIKED TANKS WITH SUPPORT (USA) of rectangular shape, with a capacity ranging from 720 to 1000 Liters (158 Imp. Gal.to 220 Imp. Gal.) (190 USG to 264 USG).

2. General Warnings

Please read and observe these warnings! Failure to comply may void the tank warranty!

- DWOT Oil Storage Tanks must be installed by a licensed installer and the tank(s) must be installed according to these instructions. Otherwise, the manufacturer's warranty will be Null and Void.
- Do not move or alter the installation. The tank is intended for stationary use only.
- The tank shall not be structurally modified.
- Outdoor use requires, for warranty support, the installation of rain cover model DWOT RC permanently attached to the tank.
- For outdoor use: The tank cover must be secured after each fill or inspection. Do not remove the cover.
- Do not load, stand on top of the tank or the cover or use the top of the tank or cover to store or place any items.
- *All DWOT tanks are pressure tested at the factory according to UL®/ULC Standards and do not require additional field-testing*. If local codes require pressure testing of the piping, it should be done with the pipes disconnected from the tank. Further information is available in this manual.
- Do not install this tank if there is physical damage, which may affect the integrity of either the inner tank or outer containment tank. Further information is available in this manual.
- Do not remove the Leak Detector from the tank.
- All tanks must be installed with an approved vent alarm (#DWOT VA) in order to maintain warranty requirements.
- At least once annually, inspect the tank and the tank system for proper operation, including:
    - Blockage of vent by visual check of pipe and cap outside the building;
    - Leakage of tank by visual check of the leak detector alarm and pipe and fittings to detect any oil on their surface;
    - Physical damage to the tank or the tank system as described below, or other suspected damage :
        - Any exposure to fire;
        - Any cuts or holes in the steel shell;
        - Any bending of the connecting pipe;
        - Any loosening of the fittings;
        - Any dents on the seam of the shell;
        - Any bending or leaning of the tank support;
        - "Major" dents or scratches in the shell;
        - Excessive corrosion of the galvanized steel shell;
        - Improper fit of the tank cover (Outdoor Tanks).

CAUTION !

If any of the above or any other hazardous conditions are found, please contact your installer immediately.

3. Technical Installation Instructions

3.1 General Information

CAUTION!
These tanks must be installed in accordance with these instructions and in accordance with CAN/CSA-B139, Installation Code for Oil-Burning Equipment (Canada) or NFPA-31, Standard for the Installation of Oil-Burner Fuels and Other combustible Liquids (USA) and in compliance with any applicable local codes or regulations.

Do not transfer oil from the old tank into this tank.

3.2 Handling instructions

In order to avoid damage to the tank, it shall be protected from impact, fall or abrasion during loading, transporting, unloading and intermediate storage.

3.3 Inspection of Tank and Contents

3.3.1 Unpacking and Damage Evaluation

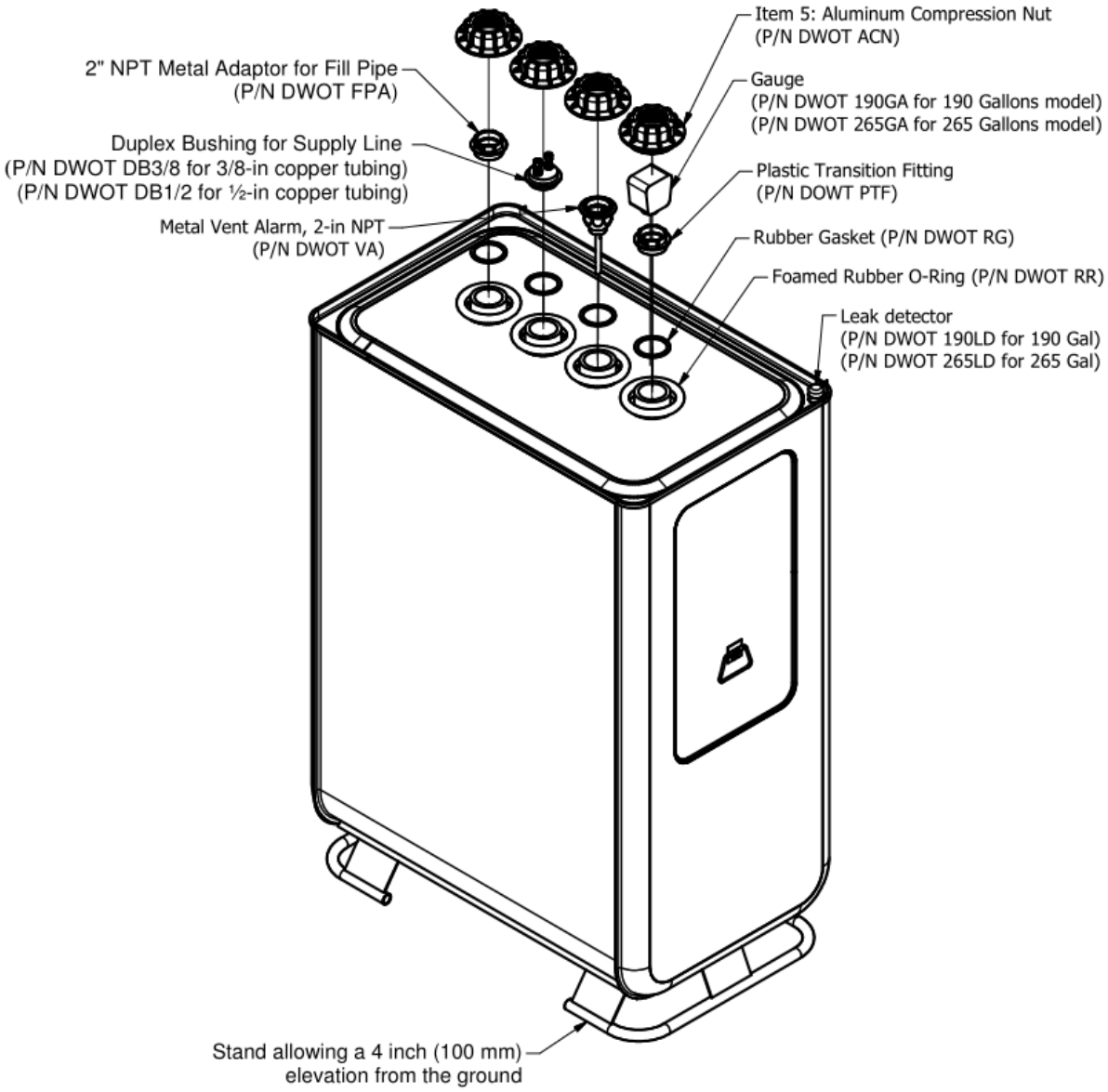
- Any protective packaging supplied by the manufacturer shall not be removed prior to delivery at the installation location.
- After unpacking, each tank shall be visually inspected for “unacceptable” damage of the support, closed secondary containment/dike, primary tank, fittings and accessories included with the tank. “Unacceptable” is defined as any material, component or product defects such as cuts, holes or permanent deformation of structural or fluid confining parts which could cause leakage, excessive corrosion, or other mechanical and fire safety hazards. Minor deformation and dents are acceptable except at the closed secondary containment/dike seam.

If damage is found and the damage could result in leakage or could reduce the stability of the tank on the ground, **IT SHALL NOT BE INSTALLED**.

Be sure to use care when you cut the shrink-wrap and remove the packing material. All packing materials should be disposed of properly.

3.3.2 Package Components

All DWOT tanks are supplied with the following components:



Notes

PLEASE ENSURE THAT ALL ITEMS INDICATED ABOVE HAVE BEEN INCLUDED WITH THE TANK BEFORE STARTING THE INSTALLATION.

THE LEAK ALARM MUST NOT INDICATE AN ALARM CONDITION UPON RECEIPT OF THE TANK. If an alarm condition is present, contact the licensed installer.

The shipping caps located in the adaptors (not shown above) prevent dirt from getting inside the tank and should not be removed until the tank is delivered to the installation site.

3.4 General Installation Instructions

The applicable Authority Having Jurisdiction (AHJ) should be consulted prior to the tank installation.

The installer shall ensure that the applicable Federal, Provincial, State and Local Codes are met prior to installation.

In most jurisdictions, installation by a technician recognized by the AHJ is mandated. Do-it-yourself installations are prohibited and will void warranty. All tank installations must be inspected by the applicable AHJ prior to placing the tank in service.

Only labelled tanks bearing the ULC listing mark for Canada and UL listing mark for USA with a serial number are eligible for warranty and installation. Under no circumstances shall a used tank of any design be installed.

Contact the burner pump manufacturer for minimum and maximum height differences between the tank and burner to ensure consistent delivery of oil to the burner. This is very important because the oil storage tank draws oil from the top of the tank and care should be taken to respect the burner manufacturer instructions concerning distances and elevations.

3.5 Location Selection of the tank

The tank shall be placed in service in accordance with local codes and the Listed tank use rating (indoor or outdoor). The tank shall be placed on a flat, level and stable surface away from heat sources, corrosive atmosphere or fluids, potential sources of mechanical damage or rapid temperature changes. The final location must have the tank label visible after installation. A minimum clearance of 2 in (50 mm) from walls or other obstructions is recommended for normal tank expansion and visual inspection. The integral supports shall not be removed. Raising the tank height is not allowed except on continuous concrete platforms at least 6 in (150 mm) wider than the tank bottom on all sides. Plastic parts shall not be exposed to direct sunlight when tanks are installed indoors.

Whenever possible, the installer should select an indoor installation.

Tanks installed outdoors should be protected from damage with proper protective barriers, including collision with motor vehicles. Tanks should not be located directly under house eaves where they may be subject to falling snow, ice, or dripping water. All outdoor installations must be equipped with a GIL-FAB Cover Assembly Model DWOT RC and installed in accordance with its installation instructions.

3.6 Piping Connections

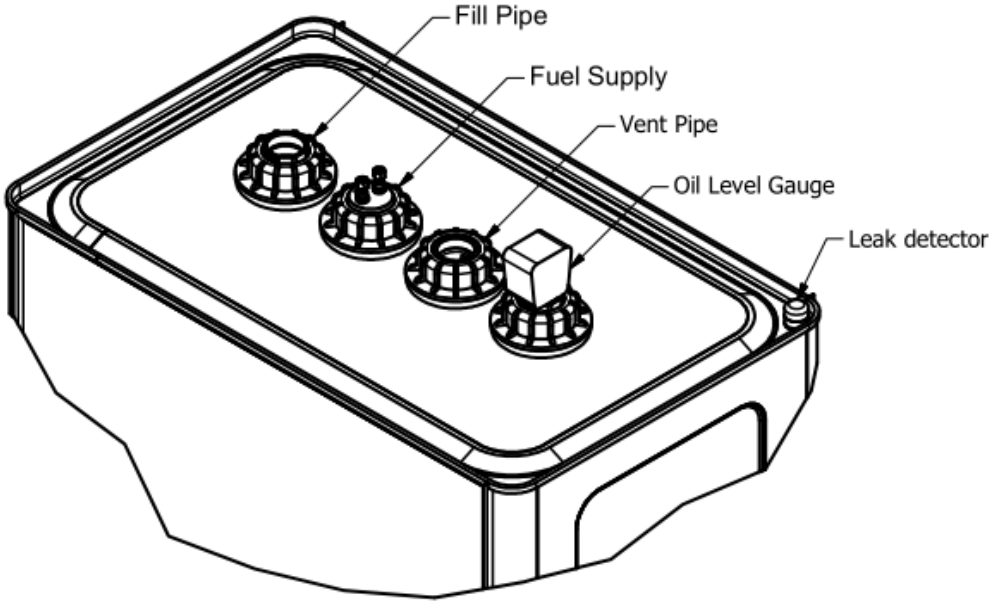
Do not put excessive stress on the tank or fittings during the installation. Bending of the pipe beyond 15° during assembly or putting excessive stress or distortion on the transition fitting is not allowed.

Caution! The compression nuts are factory installed to the required minimum torque of 30 ft-lb (40 N-m) to prevent leakage and shall not be removed. The 30 ft-lb (40 N-m) torque value represents good hand tightening. If the compression nuts are to be removed, please ensure that they are tightened to the torque value indicated above before completing the installation. NOTE: THE TRANSITION FITTING IS MADE LEAK-TIGHT BY COMPRESSING THE RUBBER GASKET AGAINST THE TANK WITH THE ALUMINUM COMPRESSION NUT.

Care should be taken to ensure that fill and vent pipes are properly aligned (plumbed and perpendicular to the top the tank). Proper pipe alignment will ensure that gaskets are evenly compressed, properly seated and sealed. The tank will not tolerate the torque of a misaligned pipe.

For indoor tanks, piping shall be secured or supported by fire-resistant hangers to prevent stresses or loading on the tank and fittings. The tank is not designed to support the weight of the piping. The vent and fill pipes shall be inspected for blockage and shall be terminated outside the building with a rain cap. All threaded pipes shall be connected using a metal transition fitting and only the oil-level gauge is to be installed using a plastic transition fitting. NOTE: PIPE SEALANT OR TEFLON TAPE ARE NOT REQUIRED ON PLASTIC FITTINGS TO ENSURE PROPER CONNECTION AND ARE NOT ALLOWED FOR TANK INSTALLATION.

Abuse (such as, bending, over-tightening, use of power tools, etc.) of threaded plastic fittings is not considered normal installation practice and is not covered by the tank warranty.



Suggested connection diagram

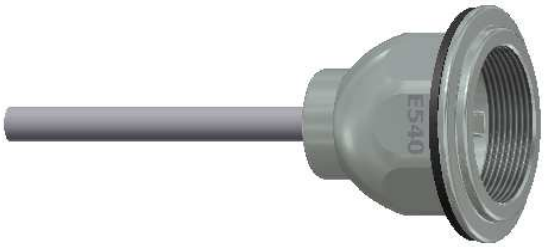
3.6.1 Fill piping

Remove the dust plug from the plastic transition fitting of the Fill Pipe opening (see suggested connection diagram). Connect fill pipe to tank in accordance with local codes using only a 2-in-1 metal adaptor as a transition fitting (P/N DWOT FPA).

Use Aluminum Compression Nut (P/N DWOT ACN) to secure the threaded metal adaptor to the tank. Make sure rubber gasket (P/N DWOT RG) is located between the threaded metal adaptor and the tank.

3.6.2 Vent piping

Remove the dust plug from the plastic transition fitting of the Vent Pipe opening (see suggested connection diagram). Connect vent pipe to tank in accordance with local codes and do not reduce vent capacity below 1-1/4 in NPS. Only vent alarms approved by the AHJ or a UL/ULC Listed whistle vent shall be used in the tank before connection to the vent piping. GIL-FAB suggests using a vent alarm (P/N DWOT VA) as a transition fitting.

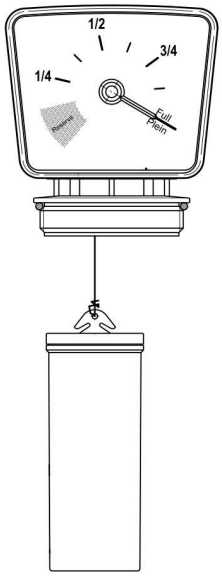


Use Aluminum Compression Nut (P/N DWOT ACN) to secure the vent alarm to the tank. Make sure rubber gasket (P/N DWOT RG) is located between the vent alarm and the tank.

3.6.3 Oil Level Gauge

Remove the dust plug from the plastic transition fitting of the Oil Level Gauge opening (see suggested connection diagram) and install gauge into one of the plastic adapters. Hand tightening is all that is required to secure the gauge because it contains an “O” ring seal for the threaded connection.

GIL-FAB strongly suggests using Tank Level Indicator P/N DWOT 190GA for Model 190 Gal and P/N DOWT 265GA for Model 265 Gal. It is also strongly suggested that the gauges be located at the opposite end of the oil supply line to prevent both device mechanisms from becoming entangled during operation.



Use Aluminum Compression Nut (P/N DWOT ACN) to secure the gauge to the tank. Make sure rubber gasket (P/N DWOT RG) is located between the gauge and the tank.

3.6.4 Oil Supply

Remove the dust plug from the plastic transition fitting of the Fuel Supply opening (see suggested connection diagram). Connect the withdrawal pipe in accordance with local codes using a duplex bushing for copper tubing.

- P/N DWOT DB3/8 for 3/8-in copper tubing
- P/N DWOT DB1/2 for ½-in copper tubing

The duplex bushings are supplied with slip-through compression fittings. Flared fittings are recommended for all joints in fuel oil lines to ensure proper vacuum seal. Install the suction line to terminate 1 in (2.5 cm) above the bottom of the tank. If a return line is also used, it should be terminated at the same level as the suction line.

Use Aluminum Compression Nut (P/N DWOT ACN) to secure the duplex bushing to the tank. Make sure rubber gasket (P/N DWOT RG) is located between the duplex bushing and the tank.

Local regulations and good piping practices may require the installation of accessory items in the supply line, such as fire valves, check valves, filters, etc. It is the installer's responsibility to comply with these regulations and practices.

3.7 Tank cover installation – Outside Installation ONLY

Tanks installed outside must be installed with GIL-FAB Cover Assembly (P/N DWOT RC) with the fill, vent and gauge located inside the cover. After unpacking, each cover shall be visually inspected for "unacceptable damage". "Unacceptable damage" is defined as cuts, dents or permanent deformation of the structure which could cause leakage, excessive corrosion, or other mechanical and safety hazards. Minor deformation and dents are acceptable.

For connection of the burner supply line, remove a knockout and replace with a UL Listed outdoor rated bushing matching the pipe size to ensure a liquid-tight connection.

3.8 Multiple Tank Installations

If multiple tanks are installed:

- Each tank must be installed and piped independently from one another as a single tank installation following these instructions;
- Cascade tank filling and combined venting are prohibited; and
- The total aggregate capacity must not exceed the limit permitted by the applicable codes and regulations.

3.9 Tank anchoring

A tank must be anchored to its foundation if one of the following conditions exists:

- It is intended for outside installation; or
- It is installed in an area subject to earthquakes or floods.

For tank anchoring, we recommend the use of GIL-FAB Tie-Down Kit (P/N DWOT 190TDK) for Model 190 Gal and (P/N DWOT 265TDK) for Model 265 Gal. We also recommend the use of multiple tie-down kits in high risk areas.

3.10 Testing

The tank has been factory-tested to detect any leaks.

The installer, or a person delegated by him, is to attend the first full filling of oil to verify the tank connections seal integrity of the entire system.

3.11 Operating instructions

During normal refilling procedure:

- **Do not overfill; and**
- **Do not fill at an excessive rate.**

Always follow all applicable codes and regulations from the applicable Authority Having Jurisdiction.

3.12 Maintenance instructions

Regularly inspect the oil tank, oil lines, fill and vent pipes for leaks and repair or replace, as required, using only the original manufacturer's parts. **A good practice is always checking for oil residue on the floor or underneath the oil tank and oil-carrying parts (fittings, lines, etc.). If oil residue is found, investigate the source immediately. Always keep the area around the oil storage tank as clean as possible.**

Inspect all accessories to ensure proper operation and replace, if required.

The leak detector should be checked quarterly for breaching of the inner cell. For outdoor installations, verify the presence of water in the interstitial space. If water is present, remove it to prevent damage to the tank due to freezing.

If obvious damage to the tank could result in leakage or results in the tank becoming unstable, **the tank shall be removed from service**.

For the recommended inspection and maintenance practices, please refer to the following:

- In Canada: Canadian Oilheat Association (COHA)'s Today's Oilheat Technician's Manual;
- In the USA: National Oilheat Research Alliance (NORA)'s Heating Oil Storage Tanks, Guide for Quality Installation and Maintenance; or
- Other industry equivalents.