Installation, Operation and Maintenance Manual

Lync Storage Tank

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Engineered Solutions

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L- OMM-018F • 05/14/26

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1. SAFETY CONSIDERATIONS

⚠WARNING!

It takes only 5 seconds of skin contact with 140°F water to cause a second-degree burn. You must protect against high water temperatures in all lavatories, tubs, showers, and other points of hot water contact. Potable hot water should be tempered to no more than 110°F when used for bathing or other personal use. Thermostatically controlled mixing valves must be set at 120°F or less to keep the delivered water temperature below scalding temperatures.

The Lync Storage Tank contains water stored under pressure. Fluids under pressure may cause significant person injury or damage to equipment when released. Be sure to shut off all incoming and outgoing water shutoff valves and carefully decrease all trapped pressures to zero ***before*** performing maintenance.

Installation and service must be performed by a qualified installer, or service agency who must read and follow the supplied instructions before installing, servicing, or removing the unit.

Accidental scalding from hot water is a greater risk in any installation where the response to contact with hot water may be slower or where the danger of hot water contact is greater.

Some examples are:

- Hospitals
- Homes For Those With Disabilities
- Elder Care and Child Care Facilities

⚠WARNING!

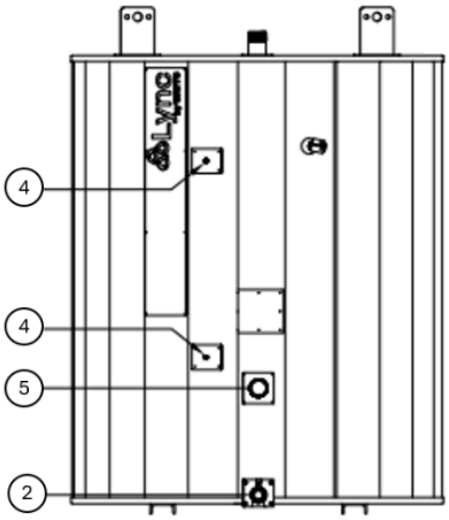
You are required to consult the local building and plumbing codes prior to installation. If the information in this manual is not consistent with local building or plumbing codes, the local codes should be followed. Inquire with governing authorities for additional local requirements.

Thermostatically controlled mixing valves must be used in the design of the potable hot water system to keep delivered water below scalding temperatures.

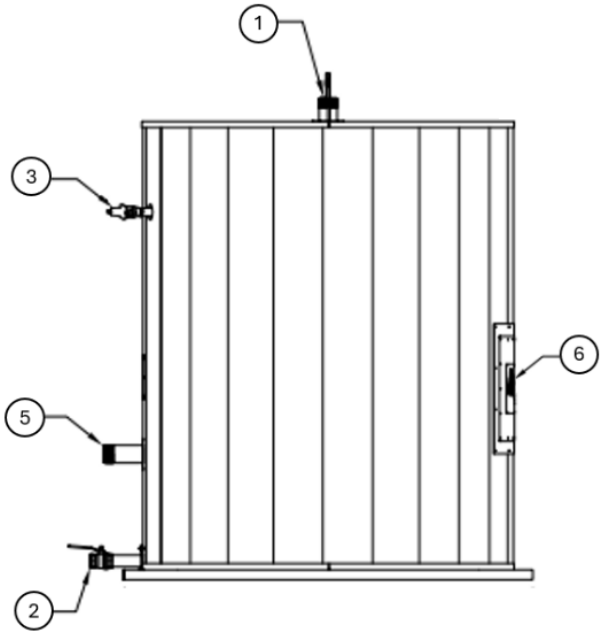
IMPORTANT

Read this Manual ***before*** using this equipment. Failure to read and follow all safety and use information can result in death, serious personal injury, property damage, or damage to the equipment. Keep this Manual for future reference.

2. PRODUCT DESCRIPTION



FRONT VIEW



SIDE VIEW

1. 2-½” NPT Hot Water Outlet
2. Drain Valve (250gal = 1” NPT; 500-1000gal = 1-½” NPT)
3. 1” NPT T&P Valve
4. 1/4" Thermowell (allows for a 1/4" or 6mm probe, 1/4" NPT)
5. 2-½” NPT Cold Water Inlet
6. Manway Access

Lync Storage Tanks are ASME certified pressure vessels designed for domestic hot water use with heat pump water heaters. The Lync Storage Tank is made of duplex stainless-steel alloy combined with a highly specialized proprietary manufacturing process to deliver long-lasting, reliable storage with superior corrosion-resistance.

LC Model tanks offer the following features:

- Lifting lugs for tank placement
- Steel skidded base for securing it to the ground
- R-22 fiberglass insulation for improved energy and acoustic efficiency, minimal standby losses, and high resistance to fire and mildew
- Bottom drain valve for easy tank flushing and cleaning
- No anode – no associated failure and no added maintenance
- Inlet diffuser to encourage stratification and reduce heater cycling
- Optional durable Rhino Linings® outer coating to withstand harsh outdoor conditions

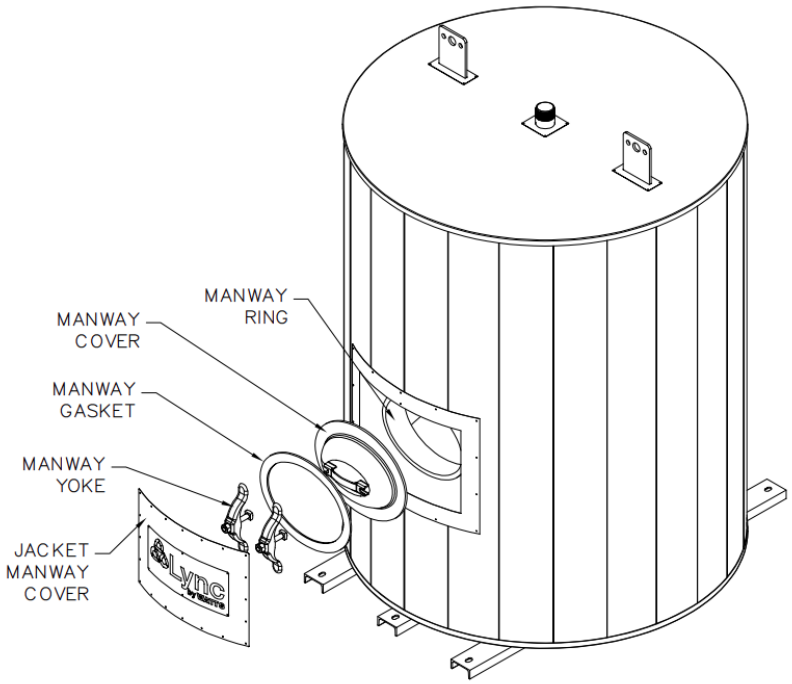
Other sizes are available upon request. See **Appendices A and B** for information on A-TR model storage tanks. A-TR tanks are indoor-only and are available only with Lync Aegis heat pump water heaters. They have the above features but have different lift points and R-12.5 insulation.

3. INLET DIFFUSER

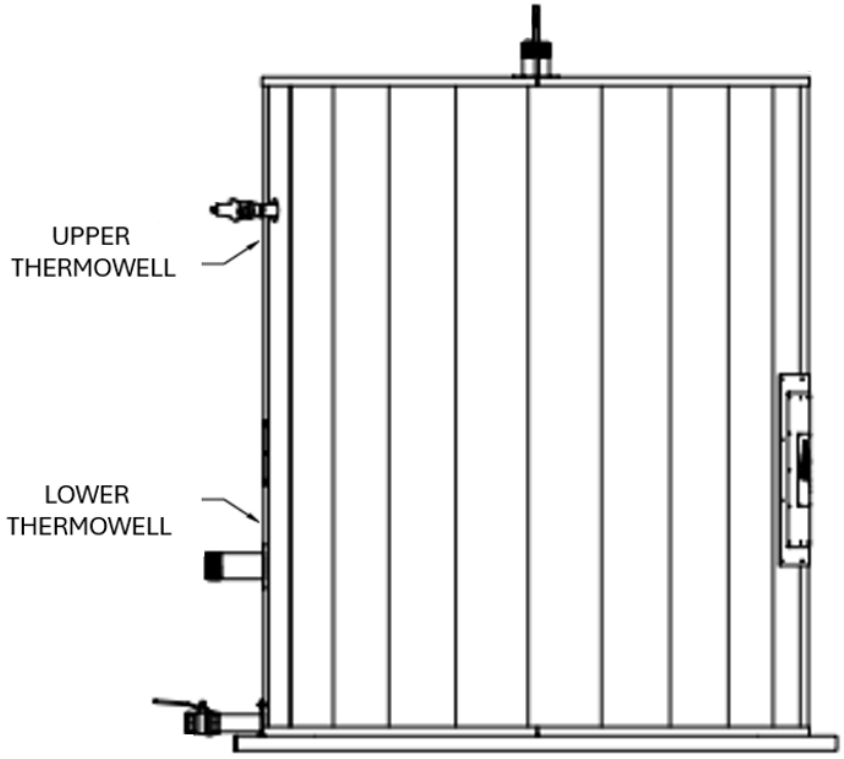
The Lync Storage Tank includes an integral inlet diffuser connected from the interior to the inlet connection to encourage proper stratification of hot water. This component is critical for heat pump water heater systems, for which stratified storage reduces heater cycling and improves performance.

4. MANWAY ACCESS PANEL

Lync Storage Tanks require fastener removal around the perimeter of the manway panel cover to access the tank. Lync storage tanks MAY have one or more removable heads used to access the tank. Do not remove the manway jacket ring for manway access.



5. TEMPERATURE PROBE THERMOWELLS

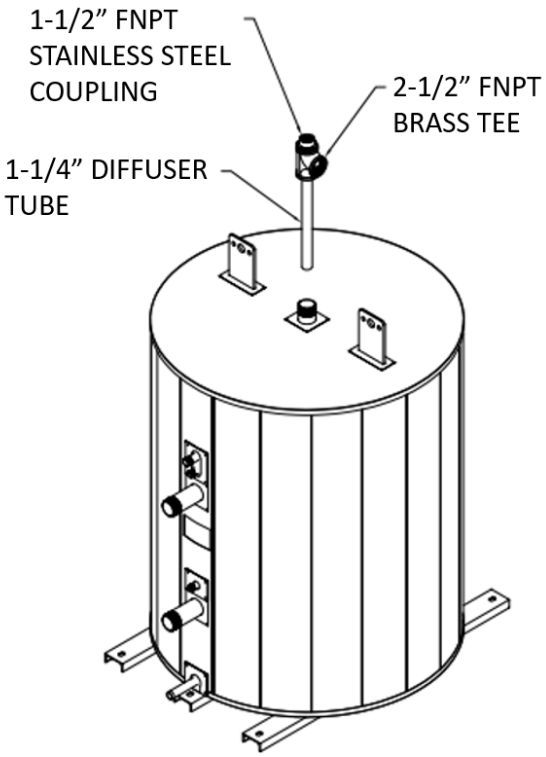


Lync LC Storage Tanks have two ¼" thermowells located towards the top and bottom of the tank. Both thermowells allow for a single ¼" or 6mm temperature probe. It is recommended to apply conductive thermal paste when installing temperature probes in these wells, so that the probes can optimally read tank water temperatures. The 750-gallon and 1000-gallon storage tanks have an additional 1 and 2 thermowells, respectively, between the top and bottom thermowells to provide additional temperature measurement locations for more system monitoring and control accuracy.

For Aegis heat pump water heating systems, the BT1 sensor (cold side probe) is placed in the bottom thermowell of the first storage tank, near the cold return water connection. The BT2 sensor (hot side probe) is placed in the top thermowell of the last storage tank in the series, near the hot water supply outlet. Refer to the **Lync Aegis Installation, Operation, and Maintenance Manual** (L-OMM-012) as well as Aegis Installation and Piping Drawings for additional probe locations and heat pump hot water system details.

NOTE: Installation of provided temperature sensors, or other sensors meeting requirements of the user hot water system, must be done by the installer prior to operation. Sensor installation locations may vary, depending on the number of storage tanks, as well as the tank configuration for the system. Refer to the Lync Aegis Installation, Operation, and Maintenance Manual for probe installation locations, temperature setpoints, and operations in a heat pump hot water system.

6. DIFFUSER TEE (AEGIS ACCESSORY ONLY)



The Diffuser Tee separates the flow coming from the hot water source into the tank, such that the hot water can flow both into the tank and out to the system from the top of the tank, ensuring a constant water temperature for the output, independent of hot-water source operation. Flow from the hot water source is injected below the top of the tank where the hot water is drawn from the tank. The Diffuser Tee or an equivalent configuration is required for all Aegis installations.

NOTE: The Diffuser Tee should only be installed on the last storage tank relative to the cold-water inlet of the tanks (this is the first tank filled with hot water in a series of tanks).

7. INSTALLATION

Checking Equipment Before You Install

Inspect the unit completely upon receipt from the freight carrier before signing the bill of lading. Inspect the appliance and all accompanying parts for signs of impact or mishandling. Contact the freight carrier immediately if any damage or shortage is detected.

Water Quality Requirements

It is critical to ensure the chemical composition is not harmful to the heater. Lync requires feedwater to be within EPA limits for potable water. Potable water is defined as complying with the U.S. EPA primary drinking water regulations and secondary drinking water standards.

⚠ WARNING!

Use industry standard safe rigging methods when attempting to lift or move this product. Failure to follow these instructions could result in property damage, serious injury, or death.

1. Locate the unit in a clean and dry area.
2. Install the unit on a firm, level foundation.
3. Locate the foundation on a pitched floor near a suitable drain or make other provisions to prevent contact to areas of the building subject to water damage should the tank or a water connection leak. The drain must be sufficient to contain water in excess of 210°F.
4. Carefully remove all shipping supports and bracing.
5. Install shut-off valves and unions on the inlet and outlet water piping for servicing. Use caution when threading pipe nipples into tank connections to prevent cross threading, or over-tightening. Always use a back-up wrench on tank nipples when tightening unions, valves, etc.
6. Insulate hot water and return circulation lines. Also, if subject to freezing during shutdown or during operation, insulate all water piping and take whatever steps are necessary to keep the appliance and all water containing pipes and components from freezing, such as heat tracing where appropriate.
7. The storage tank is equipped with a temperature and pressure relief valve. Pipe the relief valve discharge to a suitable open drain. The drainpipe may not be smaller than the relief valve opening and must be secured to prevent it from lifting out of the drain under discharge pressure. Do not install valves or restrictions in the discharge line.
8. Pipe the drain valve to a suitable open drain.

IMPORTANT

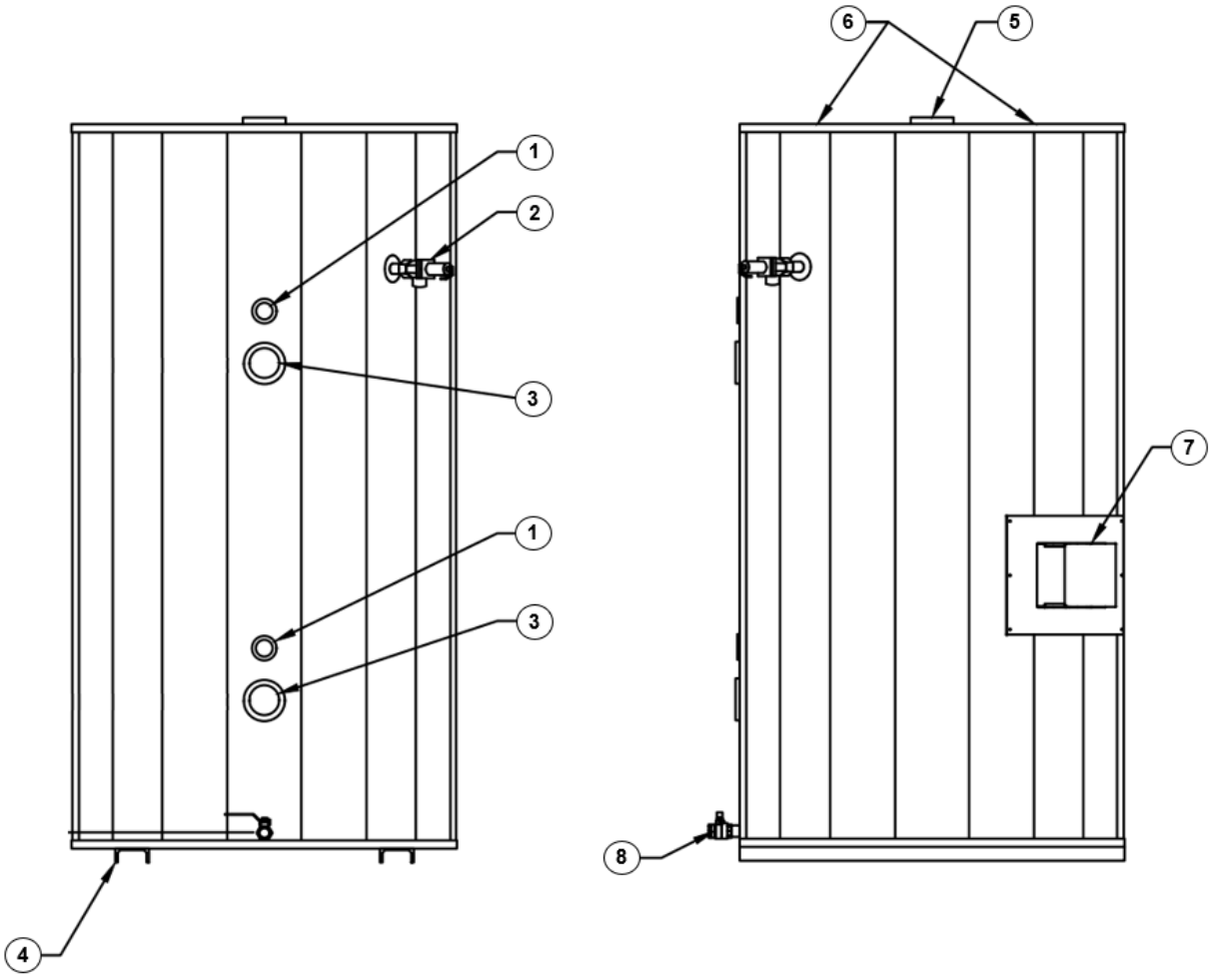
Do not use standard galvanized, plain steel, or dielectric pipe nipples when making connections to the tank. Use only non-ferrous nipples.

8. MAINTENANCE

1. A preventative maintenance program must be established to assure long, and trouble-free use of the water heater.
2. A scale of limestone will normally form and accumulate in the storage tank during operation. The limescale is formed from the natural chemicals in the water that precipitate out during the heating cycles. Some water supplies contain more of these chemicals than others, and the scale buildup will occur more rapidly. Other factors affecting the scale buildup are the amount of hot water used and the temperature of the water. As more hot water is used, more fresh water containing the scale-forming chemicals is brought into the tank. As the temperature of the water increases, the rate of scale deposited will be increased.
3. To control sediment and scale buildup in the water heater, the tank should be flushed at three-month intervals; increase frequency if the water conditions in your location cause high scale buildup. To flush the tank, open the drain valve and allow water to flow through the tank until it runs clear. Close the drain valve afterwards.
4. If the tank has a manway access for inspection and cleaning use, the tank should be inspected for scale buildup through this opening. If scale is present, it can be loosened with a high-pressure stream of water. The smaller pieces can be flushed through the drain and the larger pieces removed by hand. The frequency of inspections will be determined by the rate of scale buildup. Lync recommends 30–60-day intervals for inspection.
5. The temperature and pressure relief valve should be checked at regular intervals to maintain safe operation, per the specific instructions on the tag attached to the valve. The openings inside the valve may become inoperative or the valve may become unable to open or close due to being stuck. If the valve does not open and close properly when tested, it must be replaced.

IMPORTANT
The relief valve is a primary safety device. A relief valve functions in an emergency by discharging water. Therefore, it is essential that a discharge line be piped from the valve in order to carry the overflow to a safe place of disposal. The discharge line must be the same size as the valve outlet and must pitch downward from the valve and terminate at least 6” (152mm), but no more than 18” (457mm), above the floor drain where any discharge will be clearly visible.

APPENDIX A. PRODUCT DESCRIPTION (A-TR MODEL TANKS)



A-TR Model Tanks Storage Tanks

1. 3/4" Thermowell (allows for a 1/4" probe and two 4mm probes)
2. 1" NPT T&P Valve
3. 3" Circulating Connections
4. Shipping skids
5. 3" Hot Water Outlet
6. Lifting lugs
7. Manway access (250 gallon and larger)
8. Drain valve

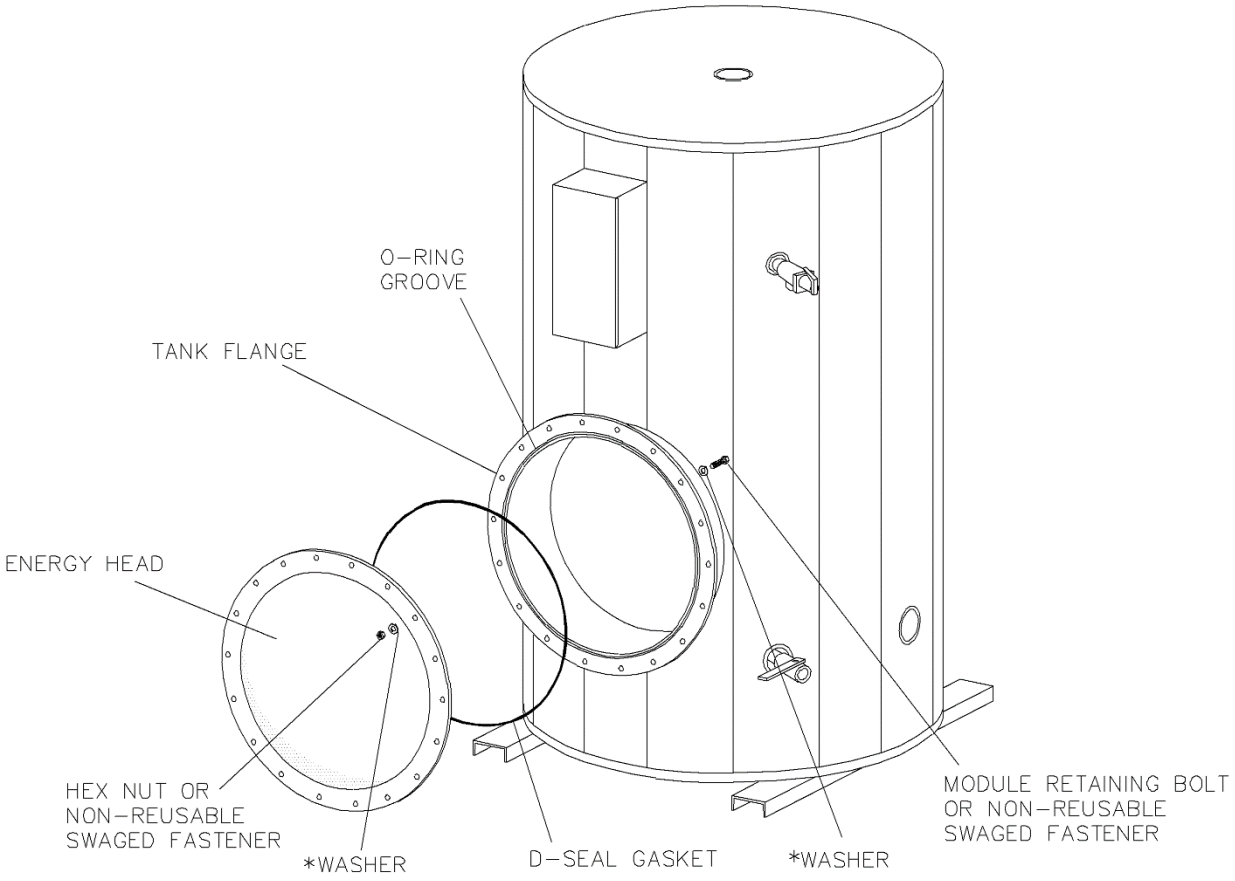
(Not shown) Horizontal shipping skids for 1000, 1500 – 3000 gallon tanks

APPENDIX B. BOLTED HEAD REMOVAL (A-TR MODEL TANKS)

Lync A-TR storage tanks MAY have one or more removable heads used to access the tank. If it is necessary to remove a head, the existing bolts and nuts should be replaced. Contact your Lync Representative or the factory at 1-800-433-5654 to order a D-Seal replacement kit:

Part Number 116816 Kit, Fastener Flange 18 Holes w/Instruction Sheet Gr 8

Part Number 116817 Kit, Fastener Flange 40 Holes w/Instruction Sheet Gr 8



*NOT USED WITH SWAGED FASTENERS

Storage Tank Warranty Forms Ship Separately with Each Product and Can Also be Found online at lyncbywatts.com