RESTAURANT TECHNOLOGIES®

Automate Your Oil.
Elevate Your Kitchen.

General Contractor Information

RTI Bulk Oil Installations

Contents

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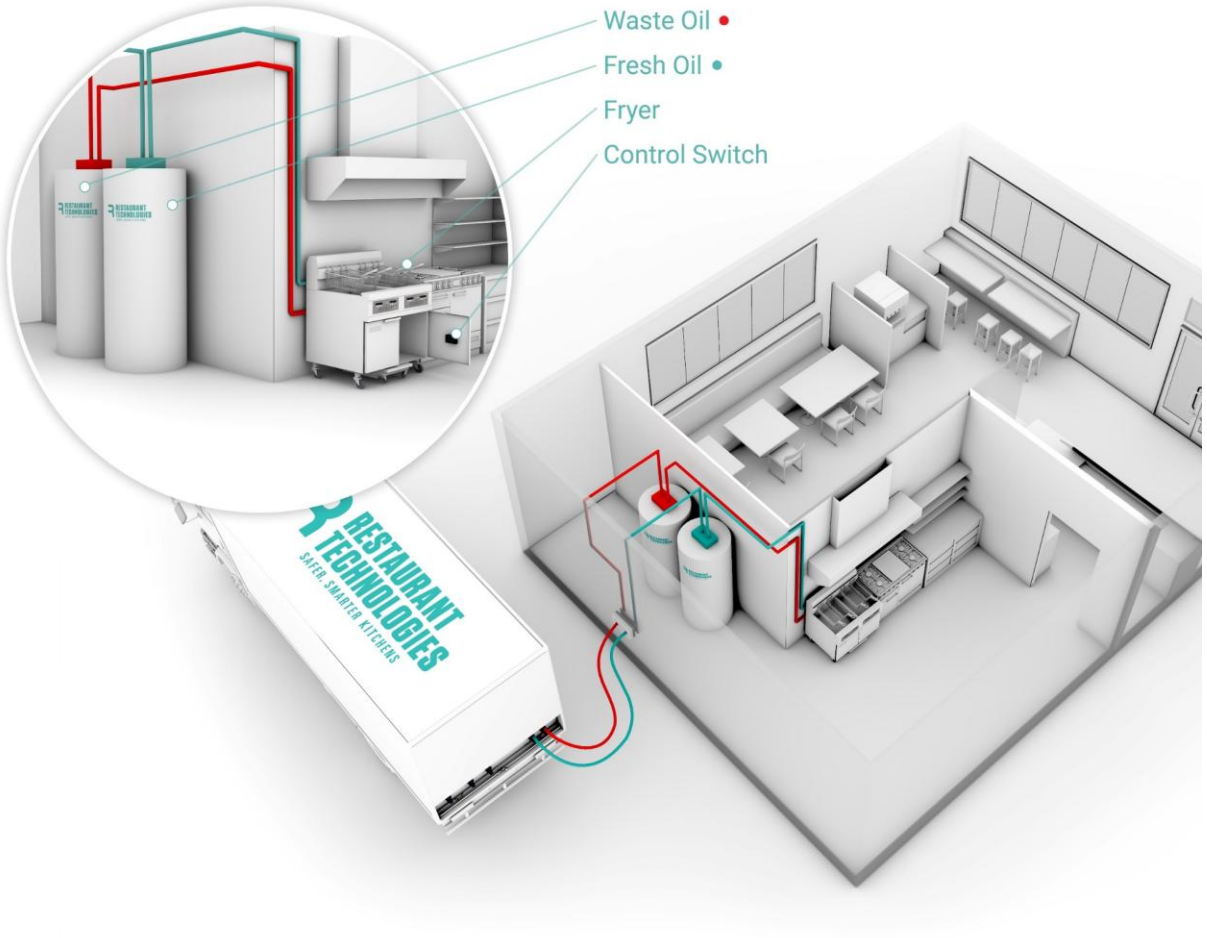
Total Oil Management System Overview



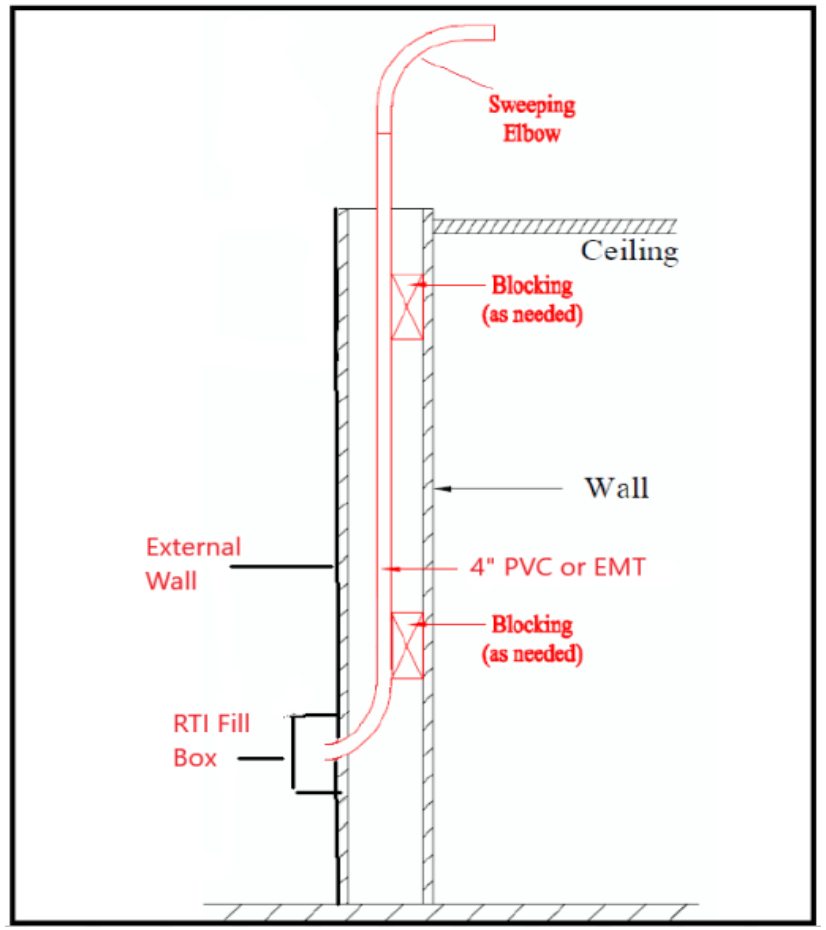
Line Bundles

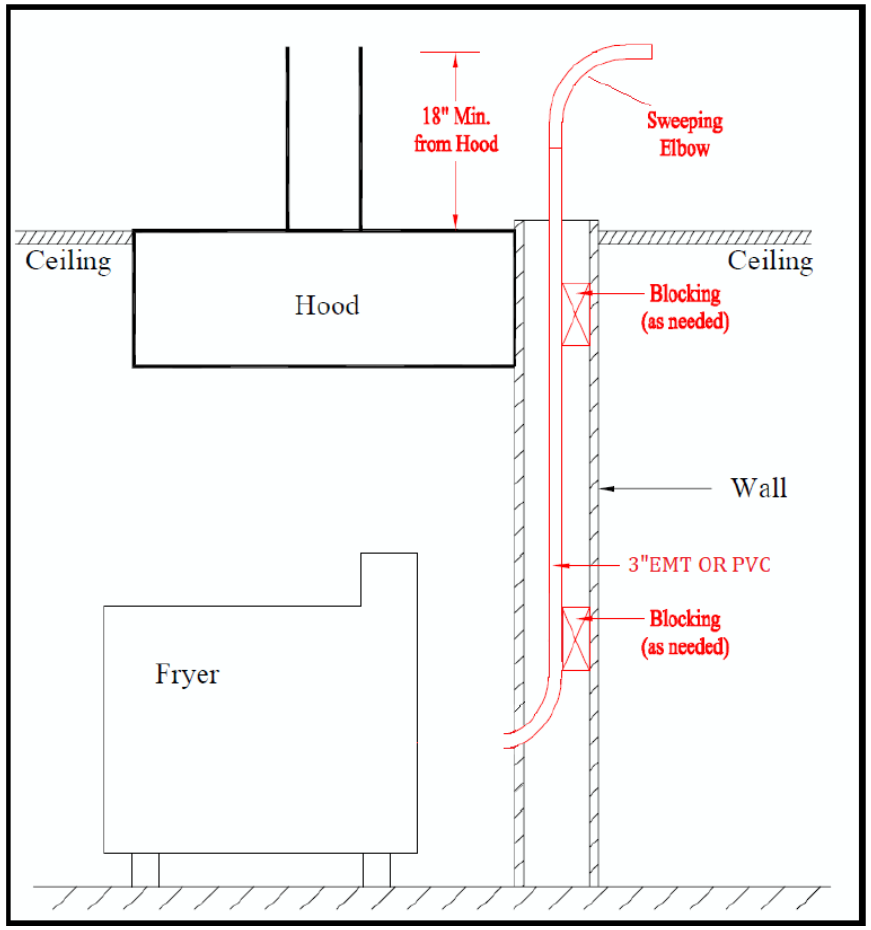
We run flex oil lines for all locations. This encompasses from the external Fill Box to Tanks and from the Tanks to Fryers. We do not run hard pipe.

We provide Stainless-Steel chases for an aesthetically pleasing look to cover our lines at the fryer location and fill box location, if necessary

Line Bundles Walls, PVC or EMT specs option (If not using RTI Chases)

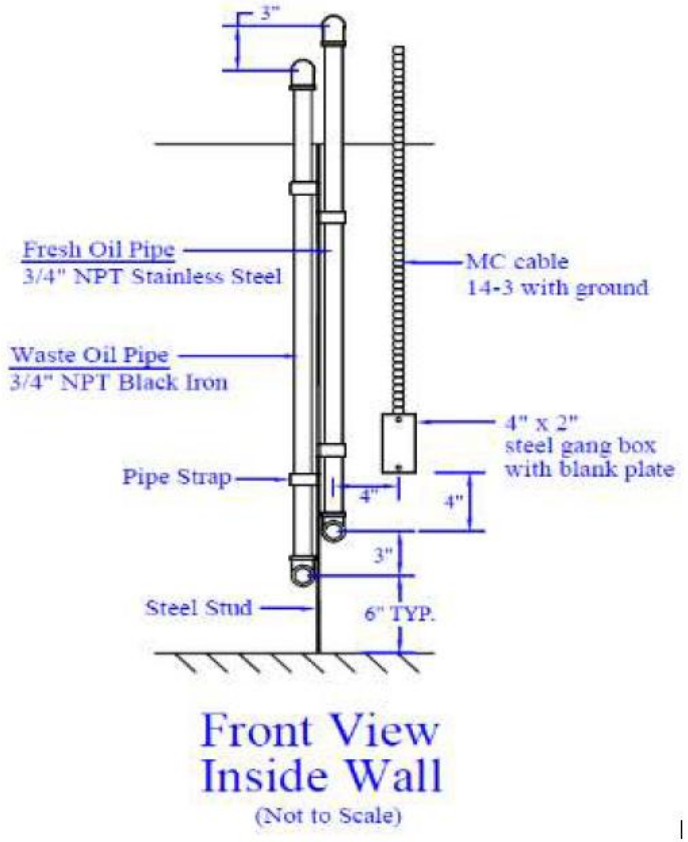
If it is determined that there is no room for an external chase on the wall or that our lines need to be in the wall, the GC will need to install either hard pipe with Mc-cable or a PVC sleeve (some cities may require EMT) for our lines.





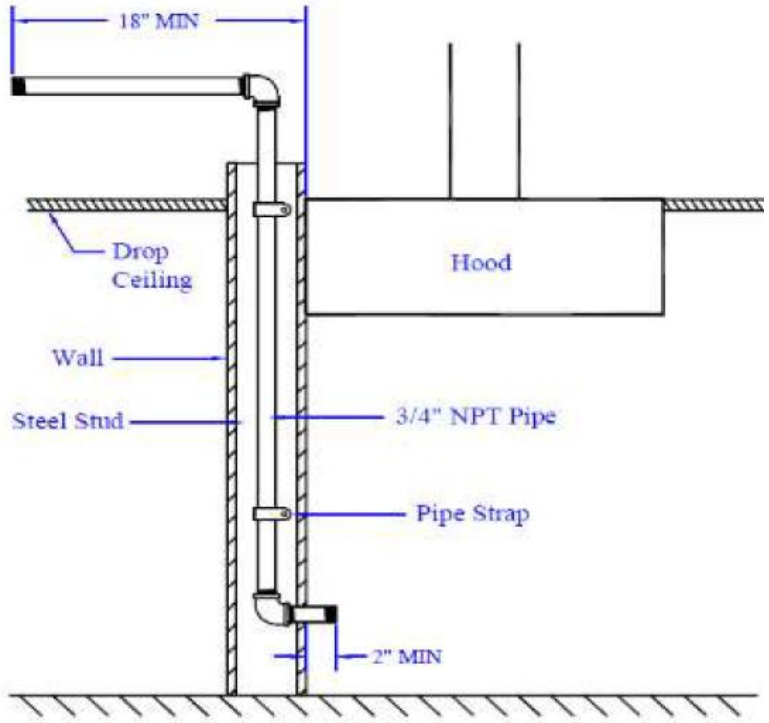
Line Bundles Walls, Fryer line locations. Piping/MC-Cable specs option. (If not using RTI Chases)

Fryer Locations:



Front View
Inside Wall
(Not to Scale)

Fryer Locations:



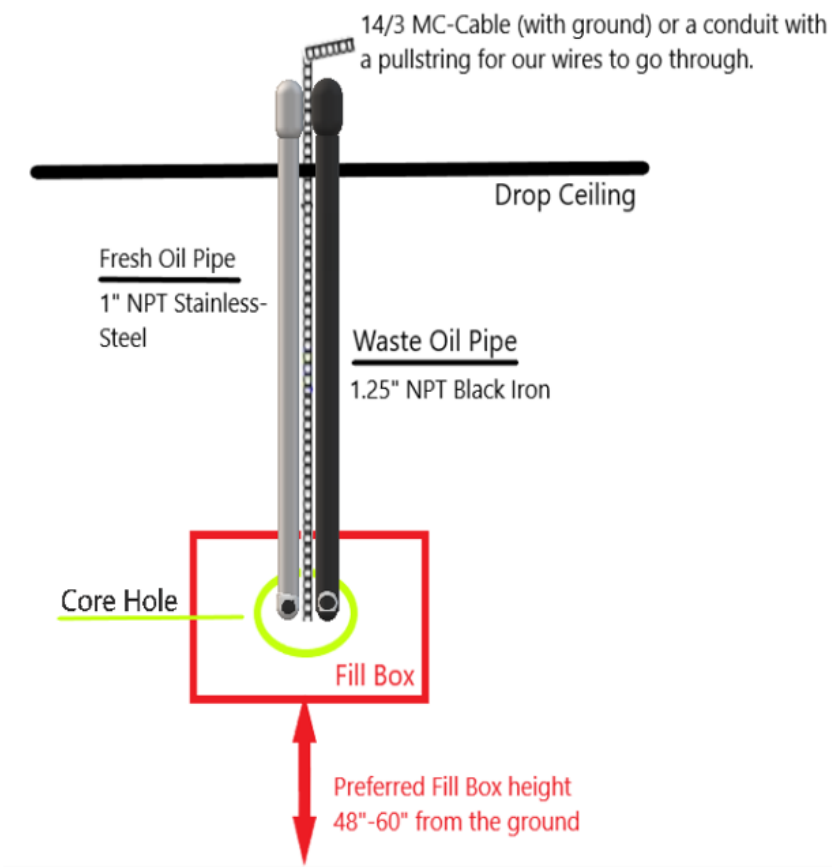
Cut-away View
Left side
(Not to Scale)

Line Bundles Walls, Fill line locations. Piping/MC-Cable specs (If not using RTI Chases)

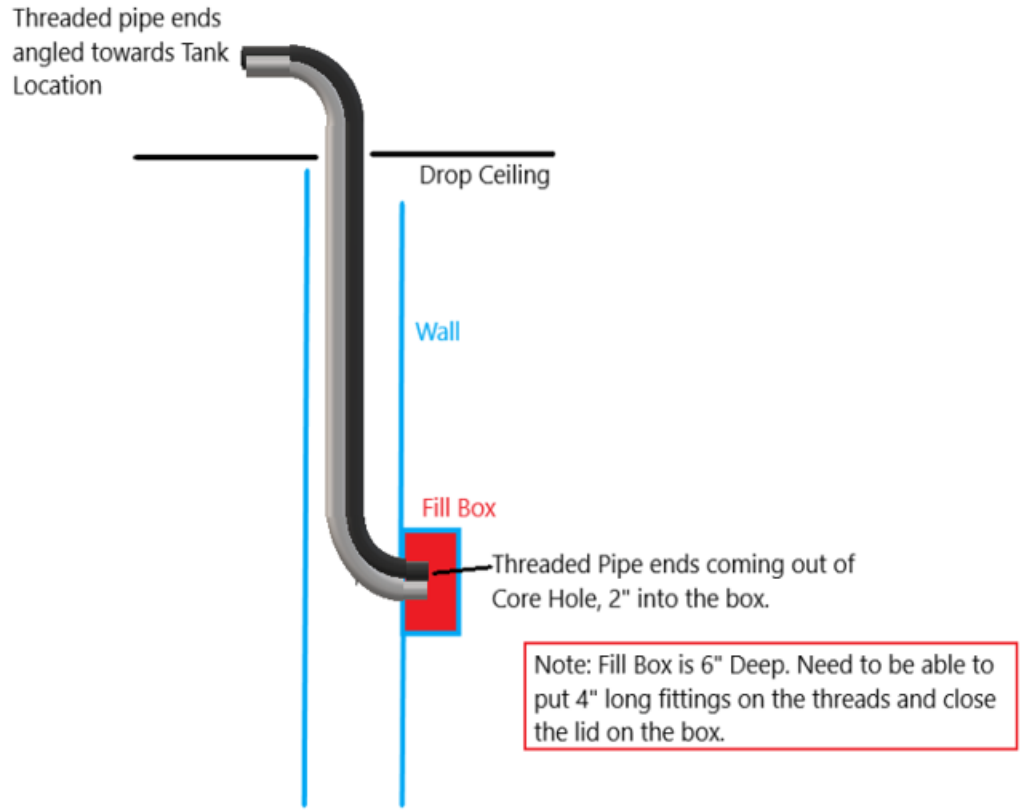
Fill Line piping in the walls.

Note: Core Hole needs to be 4" in Diameter.

Front View:

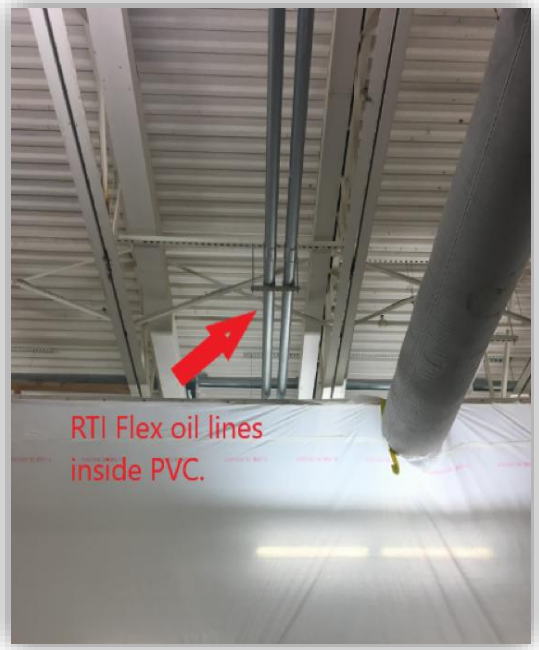


Side View:



Line Bundles Ceilings.

If the survey shows our lines running through an exposed ceiling, it is up to the customer to decide if our exposed line bundle will suffice. If it is determined that the lines are visible to the customer and not aesthetically pleasing, the customer would need to have the GC run PVC (4”) for our line bundle, with a pull string. ***Note:*** *Some cities will require EMT instead of PVC.*



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Note: RTI Flex hoses have a lifespan of 8-10 years and are replaced at no cost to the customer. These lines will harden over time and *cannot* be placed inside PVC 90° angled pipes.

Line Bundles Ceilings (continued).

If our lines are within customer view and it is determined that 90° angles are necessary, the GC will need to install hard pipe with MC-Cable as a substitute for our lines. Hard pipe specifications below.

Fill Line: From Fill Box to Tanks

- 1” NPT Stainless Steel Pipe for the Fresh Oil.
- 1.25” NPT Black Iron Pipe for the Waste Oil.
- 14/4 MC-Cable

Fryer Line: From Tanks to Fryers

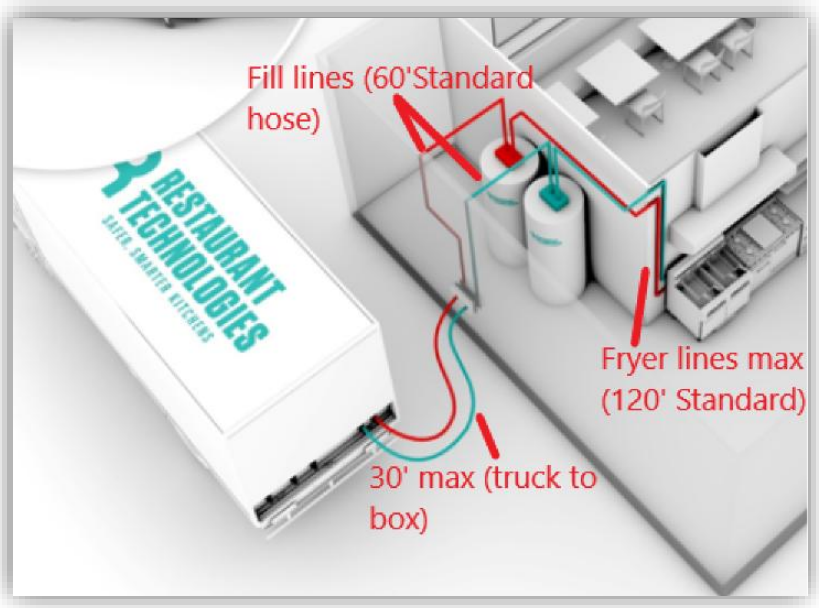
- ¾” NPT Stainless-Steel Pipe for the Fresh Oil.
- ¾” NPT Black Iron Pipe for the Waste Oil.
- 14/4 MC-Cable

Note: Some other situations that may call for hard pipe:

- Our lines being ran behind hard ceiling or drywall.
- Lines that are not accessible for replacement.

Line Bundles Distances and parameters.

Oil is pumped through spur gear pumps. We have specific limitations and parameters. Refer to the chart to determine if your location meets our specifications.
If the tanks are not located on the main floor, please reach out to your RTI Project Manager or Install Coordinator for elevation specifications.
We have the option to increase hose sizes to meet building requirements, however, this may result in additional costs for the customer.



Recommended Maximum Distances:

The following distances are for installations where tanks, fill box and fryers are located on the same floor.

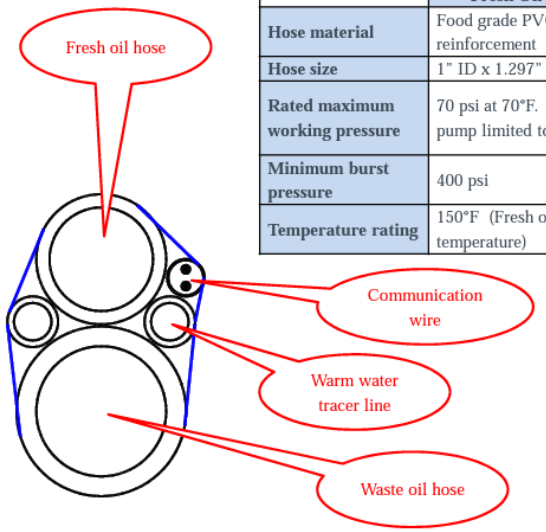
Indoor Tanks	Max (ft) Standard Hose	Max (ft) Upsized Hose
Distance from fill box to delivery truck back panel	30’	30”
Length of hose from fill box to fresh oil tank	60’	120’
Length of fresh oil hose from fresh oil pump located on the tank to the fryer	120’	300’
Length of waste oil hose from fryer to waste oil tank	120’	300’

Line Bundle Specifications

RTI Equipment Spec: Fill Box Bundle

Standard Size Hose – for lengths up to 60 ft.

	Fresh Oil Transfer Hose	Waste Oil Transfer Hose
Hose material	Food grade PVC with steel wire reinforcement	Food grade PVC with steel wire reinforcement
Hose size	1" ID x 1.297" OD	1-1/4" ID x 1.609" OD
Rated maximum working pressure	70 psi at 70°F. (RTI delivery truck pump limited to 50 psi.)	70 psi at 70°F, and full vacuum at 70°F. (Hose used under vacuum conditions only in this application.)
Minimum burst pressure	400 psi	280 psi
Temperature rating	150°F (Fresh oil is always at room temperature)	150°F (Waste tank temperature typically 100°F)

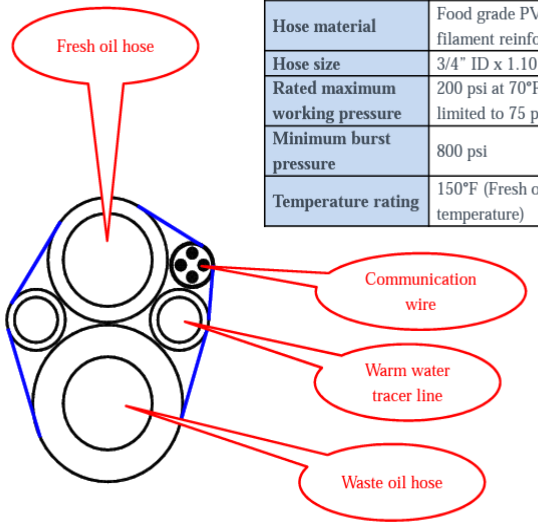


The "fill box bundle" connects the RTI oil tanks to the fill box which is installed on an exterior wall of the building. This bundle is used during deliveries, where fresh oil is added and waste oil is removed from the RTI tanks.

RTI Equipment Spec: Fryer Bundle

Standard Size Hose – for lengths up to 120 ft.

	Fresh Oil Transfer Hose	Waste Oil Transfer Hose
Hose material	Food grade PVC with polyester filament reinforcement	Nitrile rubber with braided high tensile steel wire reinforcement
Hose size	3/4" ID x 1.10" OD	3/4" ID x 1.16" OD
Rated maximum working pressure	200 psi at 70°F. (RTI pump limited to 75 psi)	250 psi. (Fryer pump typically limited to 75 psi or less)
Minimum burst pressure	800 psi	500 psi
Temperature rating	150°F (Fresh oil is always at room temperature)	275°F constant, 350°F intermittent. (Oil transferred at 200°F or less)



The "fryer bundle" connects the RTI oil tanks to the restaurant fryers. This bundle is used whenever fresh oil is added to a fryer or used cooking oil is disposed of from a fryer.

External Fill Box

Surface Mount - Existing Building

Installed by RTI on day of installation

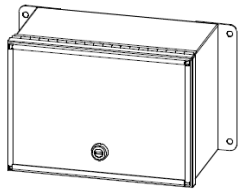
Flush Mount – New Construction

GC is responsible for installation. If you need it immediately to rough in, we can have it shipped to you. ***Please Note:*** *A 4” core hole is required to install. Preferred height 48”-60*”.

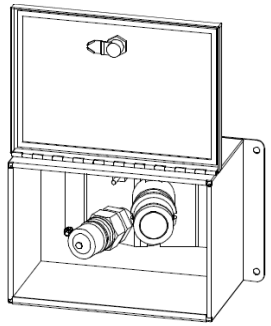
External Fill Box Specs

Surface Mount - Installed by RTI

RTI Equipment Spec: Surface Mount Fill Box



Front View
(lid closed)



Front View
(lid open)

RTI part number:	11494974
Primary purpose:	Connection point for delivery truck. Tanks filled/emptied through this point.
Where located:	On exterior wall of building.

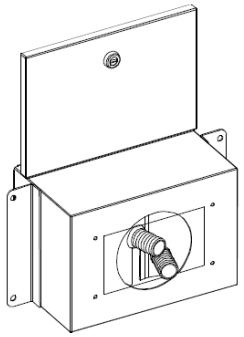
Specs:

- Dimensions: 7”H x 13”W (including flange) x 6”deep
- Features:
  - All stainless steel construction
  - Integral locking latch (key retained by RTI)
  - Food-grade new oil coupler
  - Incompatible waste oil coupler
  - Connection for overfill protection
  - Drip tray to catch residual oil
- Mounting details:
  - Surface mounted
  - 3” diameter hole through wall (sealed)
  - Locate within 15 feet of waste oil tank (longer distances possible, but delivery times increase)
  - Locate away from drive-thru (if applicable)

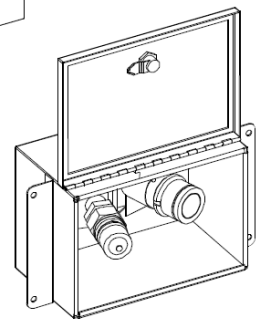
Rev. 4/12/16

Flush Mount – Installed by GC

RTI Equipment Spec: Flush Mount Fill Box



Rear View



Front View

RTI part number:	11604432
Primary purpose:	Connection point for delivery truck. Tanks filled/emptied through this point.
Where located:	On exterior wall of building.

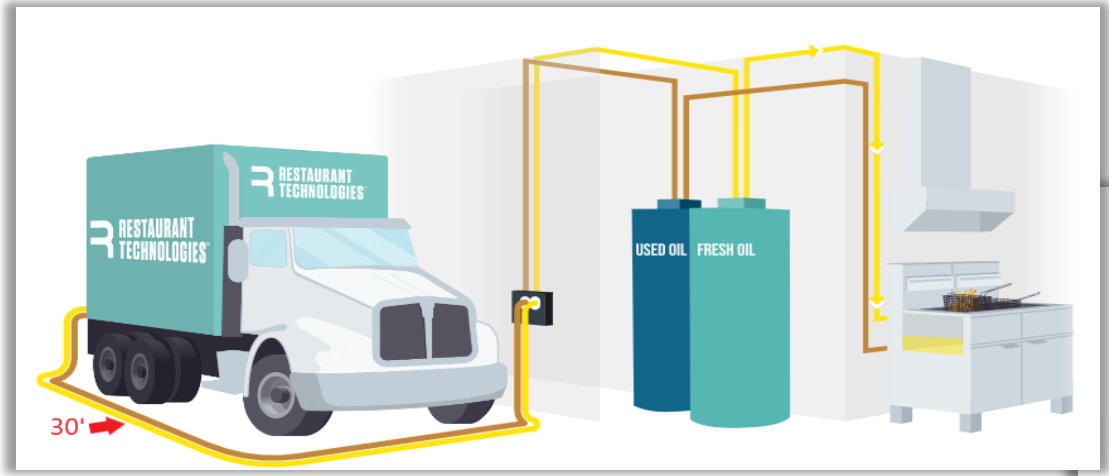
Specs:

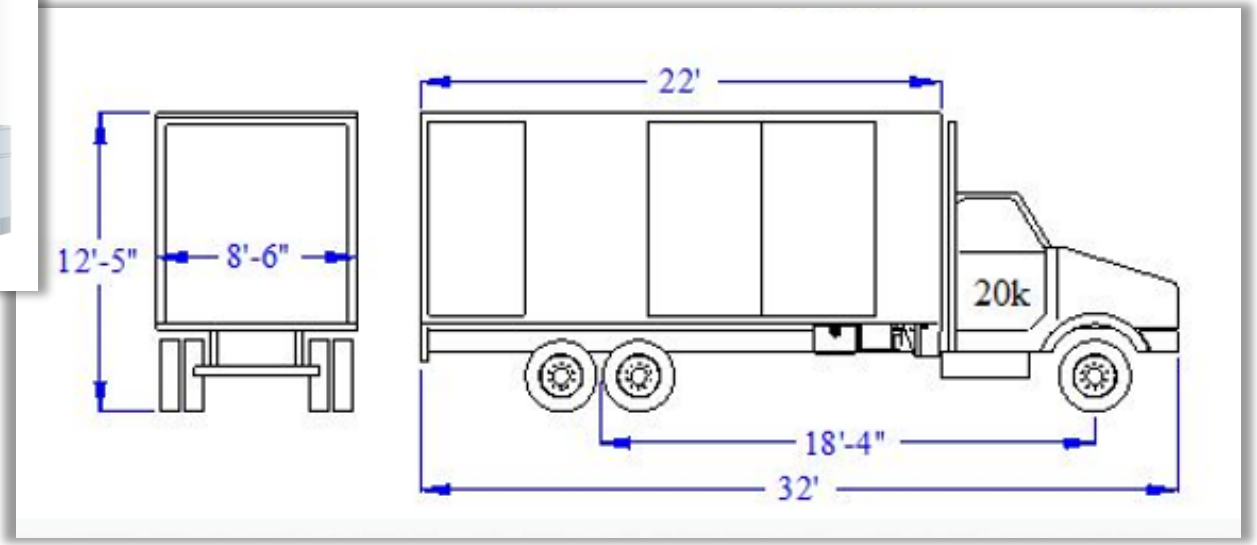
- Dimensions: 7”H x 13”W (including flange) x 6” deep
- Features:
  - All stainless steel construction
  - Integral locking latch (key retained by RTI)
  - Food-grade new oil coupler
  - Incompatible waste oil coupler
  - Connection for overfill protection
  - Drip tray to catch residual oil
- Mounting details:
  - Flush mounted (protrudes 2” from surface of wall)
  - Required opening: 7-1/8”H x 10-1/4”W x 4” deep (if wall is thicker than 4”, a 3” diameter hole is also required for remaining wall thickness)
  - Locate within 15 feet of waste oil tank (longer distances possible, but delivery times increase)
  - Locate away from drive-thru (if applicable)

Rev. 4/12/16

External Fill Box and Truck Placement

This placement of this box must be within 30’ of where the RT Truck will park to deliver. Upon placement, please designate a safe location for our Truck to park for deliveries. Truck dimensions below. Please be mindful of tight spaces, low awnings and parking garages may not be suitable for a truck this size. **Note:** *For Outdoor Tanks, the fill box is on the Tank itself.*





Indoor Tanks Option

Electrical Requirements for RT Indoor Tanks

(Restaurant Technologies to visibly post at tank location)

Listed below are the power requirements for the Restaurant Technologies indoor tanks. These requirements are for the supporting equipment located on top of the Restaurant Technologies tanks.

Dedicated Quad Outlet

Equipment to be installed:

- One (1) quad outlet, or two (2) duplex receptacles.

Required Voltage/Amperage:

- 120Vac, 20amp, single phase.
- The Restaurant Technologies equipment that will plug into these receptacles are UL listed appliances and will pull less than 20amps total when all are running at the same time (rare occasion).

Location of Receptacle:

- On wall centered between Restaurant Technologies tanks, 7 feet above floor.

Wiring:

- Can put both receptacles in one enclosure (quad) or separate enclosures. If separate enclosures, receptacles must be located within 3 feet of each other.
- Wire to building switchboard or panelboard.
- Wire both duplex receptacles to a single dedicated 20amp breaker.
- Label breaker “RTI”
- All wiring must conform to the NEC.
- Permits should be pulled when required by the authority having jurisdiction.

Equipment Spec – Indoor Tanks

Standard Size (1,400 lbs. capacity)

- Dimensions
  - Tank Height = 81”
  - Tank Diameter = 28”
  - With a Stand (All California installs require a stand for each tank)
  - Tank Height on a Stand = 83.5”
  - Tank Diameter on a stand= 29”
- Vessel Material = Food-Grade Polyethylene
  - Max temp rating = 120°F (fresh oil tank), 235°F (waste oil tank)
- Net Storage Capacity, at overfill switch trip point
  - Fresh oil tank = 1,400 lbs. (183 gallons)
  - Waste oil tank = 1,400 lbs. (183 gallons)
- Weight
  - Fresh oil tank: Empty = 82 lbs, Full = 1,482 lbs.
  - Waste oil tank: Empty = 142 lbs, Full = 1,542 lbs.
- Tanks must be located indoors in an area that is adequately heated (always 60°F or warmer).
- Features
  - Tank provided with mounting inserts to secure to floor.
  - Overfill switch provided on both tanks.
  - Waste oil tank is heated.
  - Fresh oil tank provided with accurate level gauge that reads in “pounds of oil” inside restaurant.
  - Space above oil tanks for locating supporting equipment.
  - Certified by NSF to ANSI/NSF Standard 4
  - Certified by ETL to UL 2152, *Special Purpose Nonmetallic Containers and Tanks for Specific Combustible and Noncombustible Liquids.*
  - Meets the requirements of 2018 NFPA 30 Section 19.7 and 2018 IFC Section 608.

Tanks will be installed the same day of installation. One Fresh Tank and one Waste Tank will be provided. We request the installation of a quad outlet before our scheduled arrival date.

Tanks cannot be within 3 feet of electrical panel

Outdoor Tanks Option

Equipment Spec – Outdoor Tank

Standard Capacity (1,300 lbs. capacity)

- Dimensions
  - 88” Long x 48” Wide x 50” Tall
  - NOTE: Fill box door will stick up an additional 2” when open.
- Tank Material = Food-Grade Polyethylene
- Enclosure Material = Polyethylene
- 120 VAC power required (maximum draw = 25 amp)
- Net Storage Capacity, at overfill switch trip point
  - Fresh oil tank = 1,300 lbs. (169 gallons)
  - Waste oil tank = 1,300 lbs. (169 gallons)
- Weight
  - Empty = 883 lbs.
  - Full = 2,183 lbs. (typical max weight, fresh tank full and waste tank empty)
  - Max = 3,483 lbs. (both tanks full – unlikely scenario)
- Features:
  - Overfill protection provided on both tanks.
  - Heated enclosure (500W max enclosure heater draw).
  - Fresh oil tank provided with remote level gauge, located inside kitchen, that reads in “pounds of oil”.
  - Space inside enclosure for locating supporting equipment.
  - Enclosure 100% sealed. Meets SPCC requirements for secondary containment.
  - Fresh oil tank certified by NSF to ANSI/NSF Standard 4.
  - Assembly listed to UL 499.

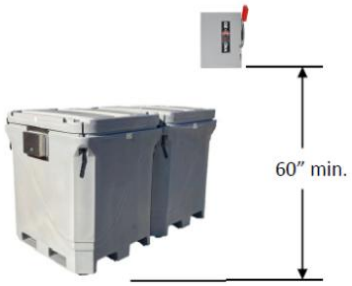
Electrical Requirements for RT Outdoor Tank

(Restaurant Technologies to visibly post at tank location)

Listed below are the power requirements for the Restaurant Technologies outdoor tank. These requirements are for the tank heating system and supporting equipment located inside the tank enclosure.

Electrical Disconnect

WARNING:
DO NOT connect to 220Vac power! Connect to 120Vac, single phase.



Equipment to be installed:
- One (1) electrical disconnect.

Required Voltage/Amperage:
- 120Vac, 25amp, single phase

Specifications for Disconnect:
- Minimum rating = 25 amps at 120Vac, single phase.
- Number of poles = 2 plus ground
- Enclosure type = must be rated for outdoor use
- Arc shield required over terminals
- Enclosure must have knock-outs for ½” conduit.
- Switch type = lever (blade) type. Must be capable of being locked in the OFF position.

Location of Receptacle:
- On exterior wall, 60” (min.) above ground and within 6 ft of outdoor tank.

Wiring:
- Wire to building switchboard or panelboard, 25 amp dedicated breaker.
- Label breaker “RTI”
- All wiring must conform to the NEC.
- Permits should be pulled when required by the authority having jurisdiction.

If a site is receiving an Outdoor Tank, we will require the General Contractor (GC) to install an electrical disconnect for the tanks.

Outdoor Tanks Surface Preparation

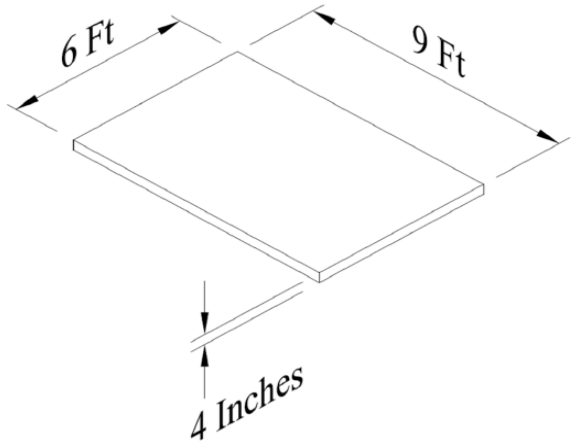
Equipment Spec – Outdoor Tank

Site Prep Requirements

1) The 1300 lb outdoor tank must be installed on a flat, hard, level surface. The surface must be capable of handling the weight of the outdoor tank when full. The surface should not be wooden or made of any other material that can rot or degrade over time.
   1) Acceptable surfaces = concrete, asphalt, bricks, pavers, patio blocks, hard dirt. Surface must be level.
   2) Unacceptable surfaces = wood, wooden pallets, gravel, loose stone, mulch, loose dirt, or any unlevel surface.
2) It is the customer's responsibility to ensure that the above acceptable surface is in place prior to the installation of the RT tank.
3) The 1300 lb outdoor tank shall not be installed on an elevated platform or deck. The only exception would be if the customer provides in advance an approval by a Civil Engineer licensed in the state and an approval by the local Building Department or AHJ.
4) If the 1300 lb outdoor tank is to be installed in a seismic zone (west coast or Memphis,TN), the tank must be installed either on existing concrete (min. 4" thick) or have a concrete pad created per the specs on the next page. These conditions are required if seismic restraints are needed.
5) Required clearance around tank:
   1) Enough space to get between the tank and the wall for access to the lids. Recommended clearance = 18" to 24" minimum.
   2) For seismic zones, enough space to install seismic restraints (see dimensions of concrete pad on next page).
   3) Fill Box must be accessible to the RT Delivery Driver.

Equipment Spec – Outdoor Tank

Concrete Pad Specs



- Dimensions = 6 feet x 9 feet.
- Thickness = 4" minimum.
- Compressive strength (f'c) = 3000 psi minimum in accordance with ACI 318-14.

NOTE:
This pad is required for sites where seismic restraints are required.

Examples of Installed Outdoor Tanks

Coming out of the drop ceiling to the outside, RT Technicians will drill a hole and run PVC down to the tanks. Our flex oil line will run inside the PVC that we provide. Sometimes we penetrate low and chase up on the inside (far right picture).

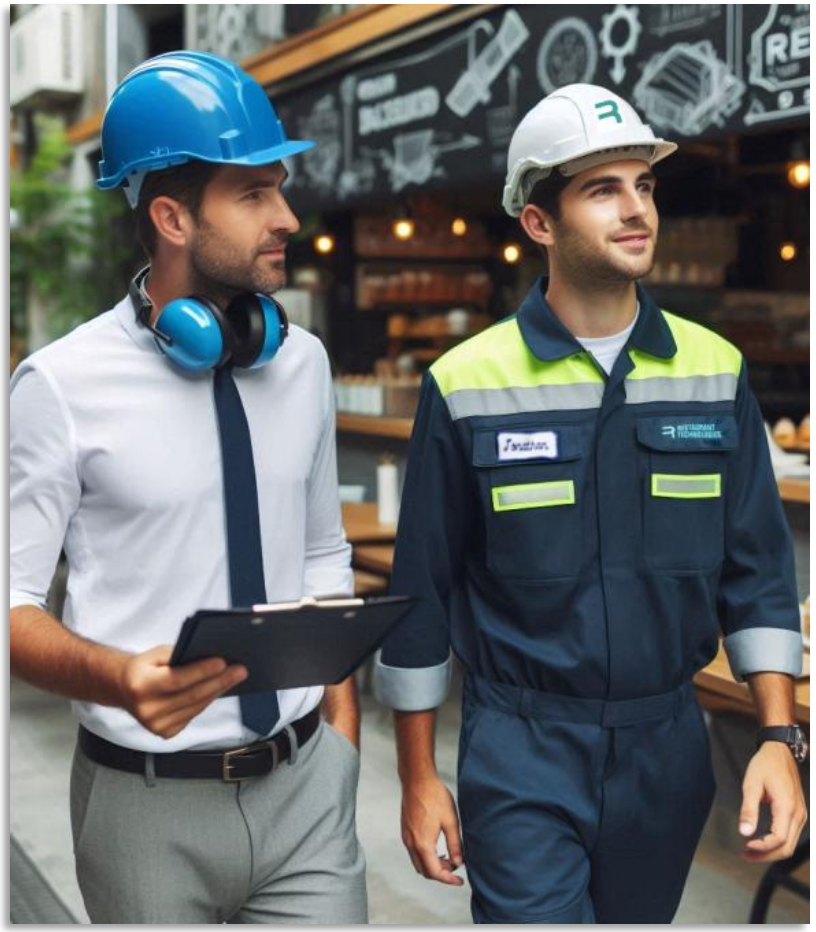
When to Survey

During the Site Survey, our technicians will accompany the General Contractor or appointed point of contact to walk the premises. We will document line lengths, tank locations, fill box placement, and the fryer configuration.

At the beginning of each project, please provide the floor plan clearly marking our tanks and including the fryer specifications.

Optimal survey conditions are met when:

- Rough-in inspections have been completed.
- Fryer hoods are installed.



When to Install

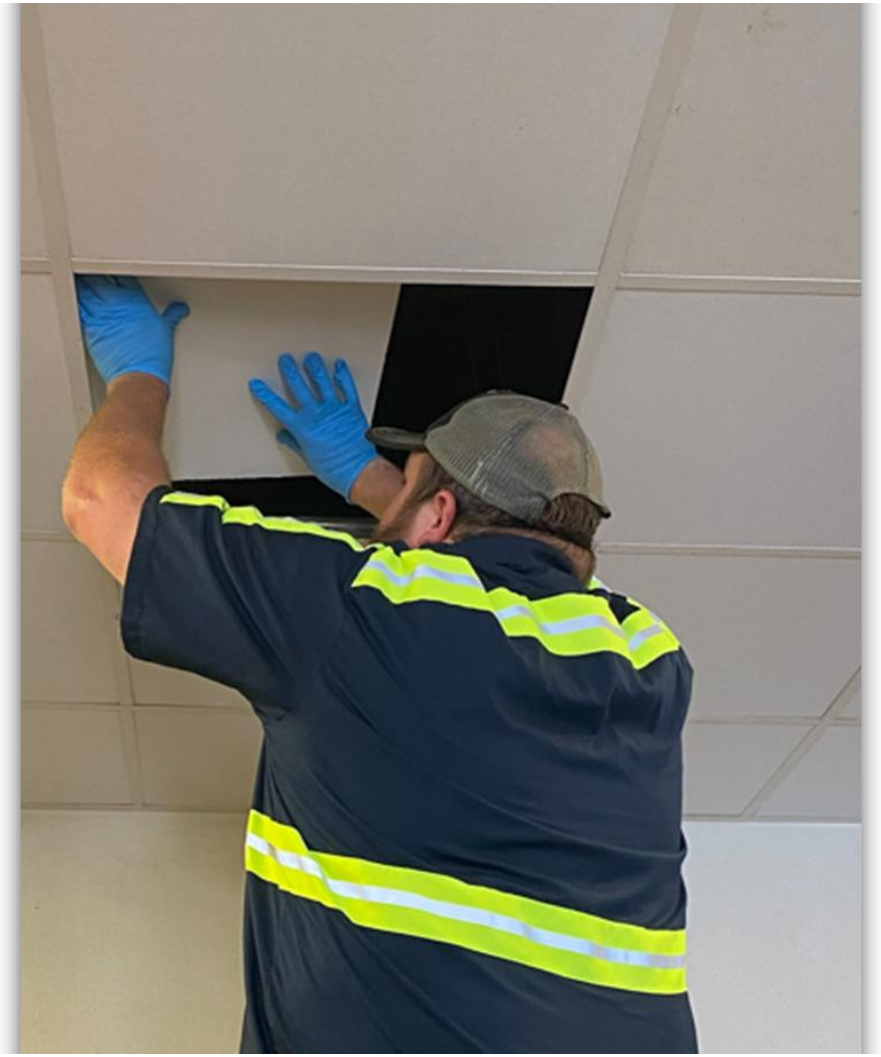
While the customer prefers a prompt installation, our bulk oil system is designed as a finished product. We install everything in one shot, usually within 6-8 hours.

As most of our installs are within existing locations, we are accustomed to installing with a full ceiling in place. We handle the removal of ceiling tiles and the running of hoses with care. The hoses will be securely zip-tied high above the ceiling tiles and framing.

We typically Install the week after Fryers arrive

Other action items that need to be complete before we can install:

- ✓ Parking lot is complete so that we can safely offload our Tanks.
- ✓ Floors and walls complete so that our Tanks can be mounted.
- ✓ Permanent power to the building is required so that we can capture filtration readings from your fryer and oil readings from your tank.



We look forward to working with you! Please reach out if you need more information.

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