



# Retrofit & Retrofit-Plus LTC Oil Filtration Systems

## Reducing Your Oil-Related Maintenance Costs While Improving Reliability



Our retrofit oil filtration systems are designed to be installed on all LTC models to remove carbon and metallic particles produced during normal LTC operation, keeping oil in peak condition with minimal maintenance.

For flexible operation, both systems include an adjustable timer which allows customers to configure the system to their specifications— daily, every other day, weekly or every other week in intervals of two, four, eight and 24 hours. Because filter replacement does not require pump reversal, dirty oil stays in the filter while system oil stays clean and in peak condition.



### RETROFIT: STANDARD

#### Easier to Install and Maintain

Compact, lightweight design of our standard retrofit system permits easy installation and is equipped with quick-connect fittings that make filter replacements a “snap” (without shutting down the filter system).

Sealed, environmentally-friendly filter canister design eliminates mess and hassle created when working with traditional filter cartridges in the field.

New filters ship filled with oil, eliminating the need to supply make-up oil.

#### More Economical

Economical purchase price combined with less frequent filter replacement can save you money.\*

Reduces mechanical wear which can minimize equipment failure and downtime.

#### Unique High-Efficiency Filter Design

Our depth-type filter uses a flow path parallel with the center tube instead of the conventional outside-to-inside flow. This forces oil through a greater depth of filter material for more efficient filtration. See back side for more information on this unique filter design.

#### Minimum Turbulence in Reservoir

Pump maintains a flow rate of 1.8 GPM to minimize turbulence in the tank.

#### Filter Adapter Kit Available for Alternate Style Manufacturer Cartridges



Standard Retrofit System with Waukesha® Standard Filter Cartridge



Customizable Retrofit-Plus System

### RETROFIT-PLUS: CUSTOMIZE YOUR OWN

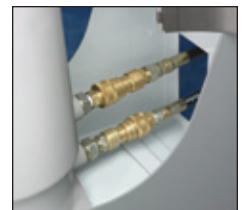
Our Retrofit-Plus Oil Filtration System has been designed to meet the filtration demands of higher oil volume load tap

#### Retrofit-Plus Customizing Options:

- Hourly Run Meter
- Customer Configurable Hourly/Daily Timer
- Power Requirements: 120/240 VAC, 60Hz
- Motor Size: 1/5 to 1/2 HP
- Flow Rate: 3 to 5 GPM
- Adapts to Most Major Manufacturers' Filter Cartridges

changers while providing flexibility to meet individual customer specifications. This system provides filtration with an oil flow rate range from 3 to 5 GPM and is adaptable to a variety of industry standard filters. Particle/Moisture removal performance is dependent on make/model of customer-specified oil filter cartridge.

With the appropriate filter installed, the Retrofit-Plus can remove dissolved water, extremely fine carbon and metallic particles to maintain peak performance of LTC oil, extend the life of your equipment and lengthen the period between maintenance intervals.



Retrofit-Plus System comes standard with quick connect fittings to easily attach / detach cartridge from unit.

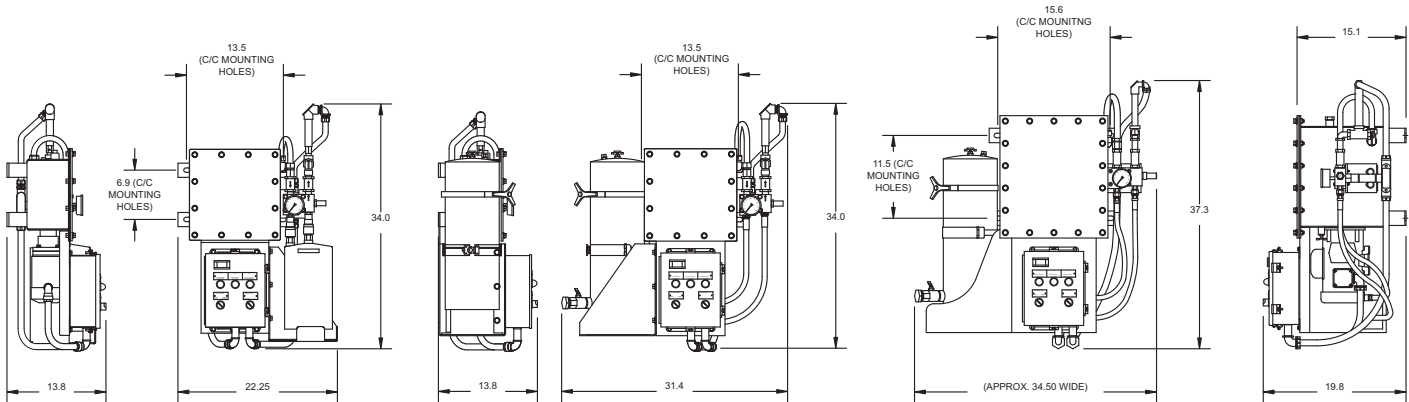
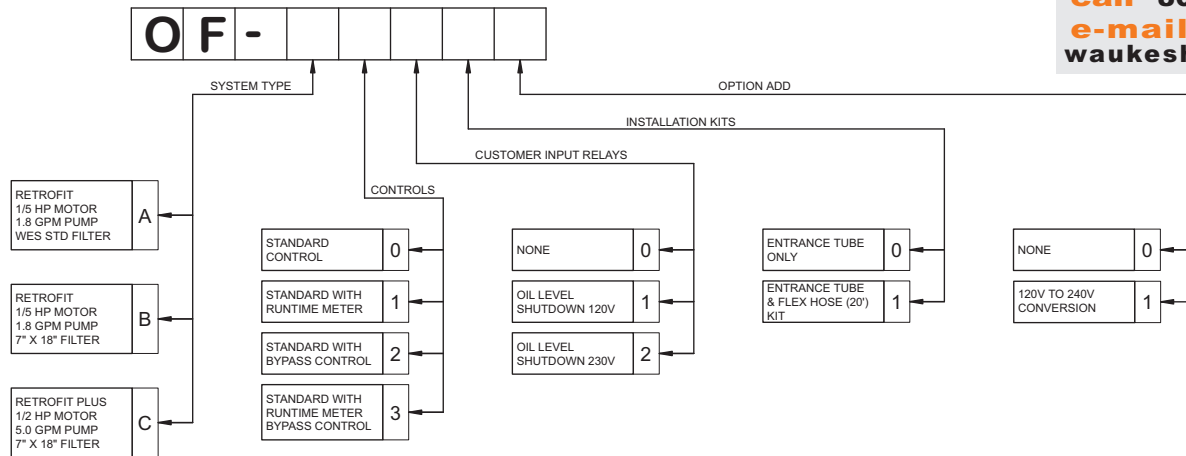
\* Actual filter life varies depending on transformer loading and frequency of LTC operations and tap changer model.

# Build Your Own Part Number Using Configuration Below:

For More Information

call 800-338-5526

e-mail HVSinfo@waukesha.spx.com



RETROFIT SYSTEM - A

RETROFIT SYSTEM - B

RETROFIT PLUS SYSTEM - C

LTC Oil Filtration System Specifications:	Standard Retrofit	Customizable Retrofit-Plus
Power Requirements	120 VAC, 60 Hz	120/240 VAC, 60 Hz
Weight	120 lbs.	120 to 180 lbs.
Motor Size	1/5 HP 1700 RPM	1/5 to 1/2 HP 1700 RPM
Maximum Flow Rate	1.8 GPM	3 to 5 GPM
Maximum Operating Pressure	68 psi	68 psi
Low Flow Shutoff	0.9 GPM	0.9 GPM
First Pass Moisture Absorption	200 to < 5 PPM	Defined by Filter Type
Optional Daily Timer Settings	Every 1, 2, 7 or 14 days	Customer Configurable
Optional Hourly Timer Settings	Every 2, 4, 8 or 24 hours	Customer Configurable
Particle Filtration Rating	Not more than 1 micron	Defined by Filter Type
Continuous Run Mode (Control Bypass)	Available Upon Request	Available Upon Request

STANDARD FILTER



WAUKESHA® FILTER

## Waukesha® Standard Filter Offers Long Filter Element Life

Waukesha Electric System's depth-type filter element (in Standard Retrofit System) features a unique fluid flow path: fluid runs parallel with the center tube (axial flow) rather than the conventional outside-to-inside flow (radial flow) of most depth-type filters. The depth of fluid flow is optimized and provides the capability to filter more efficiently than conventional filters. Filter media is constructed as four rolls of filter paper. Oil flows between the layers of media until it reaches one of two collector plates. The collector plates route oil to the center of the element where it is discharged out of the element. Because the filter media has a much greater resistance to flow from outside to center (radial flow) than it does between the layers (axial flow) of filter material, WES' filter maintains a high degree of filter efficiency, **filtering to less than 1 micron and absorbing water from wet oils**. Integrity of the filter element is maintained even as it accumulates contaminants and the Delta-p (pressure across the filter) goes up. Hydraulic pressure of the fluid compressing the layers of media together prevents a channel from forming that could allow oil to pass through the element unfiltered. *Recommended pressure limit to change filter is 65 psi.*

### Removes Both Dirt and Moisture

- Filter material is dried cellulose fiber
- Filter can decrease water to under 5 PPM
- Rated for particles as well as free and emulsified water
- Total water holding capacity: 0.5 kg
- High rate of absorption enables oil to be reduced from 200 to less than 5 PPM in one pass
- Micron rating: 1.0
- Beta X rating: 75 at 3 microns



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Waukesha® LTC Oil Filtration Systems are manufactured and distributed by High Voltage Supply, a division of Waukesha Electric Systems, Inc. **Retrofit-Plus Patent Pending.**

To continually improve its products and services, Waukesha Electric Systems reserves the right to change specifications and features without notice. Please contact HVS for certified dimensions and drawings.

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