

ICC-ES Report

PMG-1293

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Reissued 12/2016
This report is subject to renewal 12/2017

EVALUATION SUBJECT:

FIRE SUPPRESSION RANGE HOOD

DIVISION:

23 00 00—MECHANICAL

SECTION:

23 38 13—COMMERCIAL-KITCHEN HOODS

Report Holder:

GREENHECK FAN CORPORATION

400 ROSS AVENUE
SCHOFIELD, WI 54476



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ICC-ES PMG Listing

PMG-1293



Effective Date: December 2016

This listing is subject to re-examination in one year.

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CSI: DIVISION: 23 00 00—MECHANICAL
Section: 23 38 13—Commercial-Kitchen Hoods

Product certification system:

The ICC-ES product certification system includes testing samples taken from the market or supplier's stock, or a combination of both, to verify compliance with applicable codes and standards. The system also involves factory inspections, and assessment and surveillance of the supplier's quality system.

Product: Fire Suppression Range Hood

Listee: Greenheck Fan Corporation
400 Ross Ave.
Schofield, WI 54476
www.greenheck.com

Compliance with the following codes:

2015, 2012 and 2009 *International Mechanical Code*® (IMC)
2015, 2012 and 2009 *International Fire Code*® (IFC)
2015, 2012 and 2009 *Uniform Mechanical Code*® (UMC)*

* *Uniform Mechanical Code* is a copyrighted publication of the International Association of Plumbing and Mechanical Officials

Compliance with the following standards:

ICC-ES LC1031-2012, PMG Listing Criteria for Exhaust Type II Hood with an integrated fire suppression system for domestic cooking appliances in commercial applications
UL 300A (Ed. 3), Extinguishing System Units for residential top cooking surfaces,
UL 507 (Ed. 9), Standard for Electric Fans

Identification:

Greenheck's Fire Suppression Range Hoods shall be marked with:

- manufacturer's recognized name or trademark
- in case of private labeling, the name, trademark, or other mark of the customer for whom the hood was manufactured.
- product name for the equipment qualified for use with each exhaust Type II hood with an integrated fire suppression system.
- the ICC-ES PMG listing mark

Installation:

Greenheck's Fire Suppression Range Hoods shall be installed in accordance with the manufacturer's instructions and applicable codes.

Examples of sample installations are depicted in figures 1a through 1d.

Model:

The Greenheck GRRS and Accurex XRRS, Fully Integrated, Self-Contained Fire Suppression Range Hood for Residential Appliances for use in protecting residential-grade appliances when used in public or otherwise (quasi-) commercial spaces. Figures 2 and 3 depict examples of the Greenheck GRRS and Accurex XRRS.

The Greenheck GRRS and Accurex XRRS are constructed with 304 stainless steel, having a fire suppression system pre-engineered into the design of the hood. Actuation of the fire suppression system is completely mechanical being based on industry standard "fail safe" fusible link technology. The system uses a wet chemical agent and has been tested and demonstrated to conform to UL subject 300A. The Greenheck GRRS and Accurex XRRS also include a centrifugal fan, tested and demonstrated to conform to UL 507.

The Greenheck GRRS and Accurex XRRS feature an Advanced Programmable Logic Control Driven Self-Monitoring System that interacts with the cooking environment to minimize the risk of a fire event while also monitoring the suppression system for continuity.

This system starts with a set of heat sensors just within the face of the hood; one at a medium set point, the other at high. Under cooking conditions, when the medium set point is reached, the fan is turned on high. This feature dissipates the heat from the area but also draws it into the unit, past the fusible links in the system. If temperatures continue to rise and the high temperature set point is reached, the system reacts by shutting down power to the range *prior to suppression system release*. When this occurs, the unit's internal alarm is activated so that occupants are notified that the system is working to prevent further escalation of a potential fire. This is considered two stages of Pre-Suppression, where the unit is interacting with the cooking environment - working to minimize the risk of a fire event

Should temperatures continue to rise, fire is present. The fusible links will melt, mechanically actuating the suppression system and releasing a low PH wet chemical agent across the cook-top. At actuation, the system will also make a second attempt to shut down power to the range; in the event of a flash-fire, or something that happens too quickly to register with the temperature sensors. The Greenheck GRRS and Accurex XRRS will continue to sound its internal alarm while also communicating a "fire code" back to a monitored alarm panel.

The PLC Self-Monitoring-System also monitors the entire suppression assembly for completeness and continuity. If the suppression system is ever compromised through a loss of pressure or broken connection, or tampering of any kind, the unit reacts by shutting down power to the range. In this case the suppression system is compromised therefore the range shouldn't be in use. Under this condition, the system communicates a separate "maintenance code" saying that the unit is down and needs service.

When preemptive shutdown occurs, the system and the cooking equipment will not come back on-line until the Greenheck GRRS and Accurex XRRS are reset.

The Greenheck GRRS and Accurex XRRS are available in multiple ducting sizing calibrations, 30" and 36" sizes.

Greenheck Model	Accurex Model	Width (inch)	Fan	Vent	Stove Power
GRRS-30-F-E	XRRS-30-F-E	30	Internal	Recirculating	Electric
GRRS-30-F-G	XRRS-30-F-G	30	Internal	Recirculating	Gas
GRRS-36-F-E	XRRS-36-F-E	36	Internal	Recirculating	Electric
GRRS-36-F-G	XRRS-36-F-G	36	Internal	Recirculating	Gas
GRRS-30-R-E	XRRS-30-R-E	30	Internal	Rear	Electric
GRRS-30-R-G	XRRS-30-R-G	30	Internal	Rear	Gas
GRRS-36-R-E	XRRS-36-R-E	36	Internal	Rear	Electric
GRRS-36-R-G	XRRS-36-R-G	36	Internal	Rear	Gas
GRRS-30-T-E-D	XRRS-30-T-E-D	30	Duct In-Line	Top	Electric
GRRS-30-T-G-D	XRRS-30-T-G-D	30	Duct In-Line	Top	Gas
GRRS-36-T-E-D	XRRS-36-T-E-D	36	Duct In-Line	Top	Electric
GRRS-36-T-G-D	XRRS-36-T-G-D	36	Duct In-Line	Top	Gas
GRRS-30-T-E-W	XRRS-30-T-E-W	30	Wall Mount Fan	Top	Electric
GRRS-30-T-G-W	XRRS-30-T-G-W	30	Wall Mount Fan	Top	Gas
GRRS-36-T-E-W	XRRS-36-T-E-W	36	Wall Mount Fan	Top	Electric
GRRS-36-T-G-W	XRRS-36-T-G-W	36	Wall Mount Fan	Top	Gas

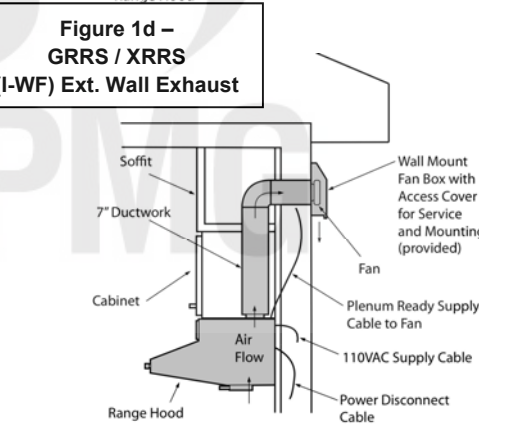
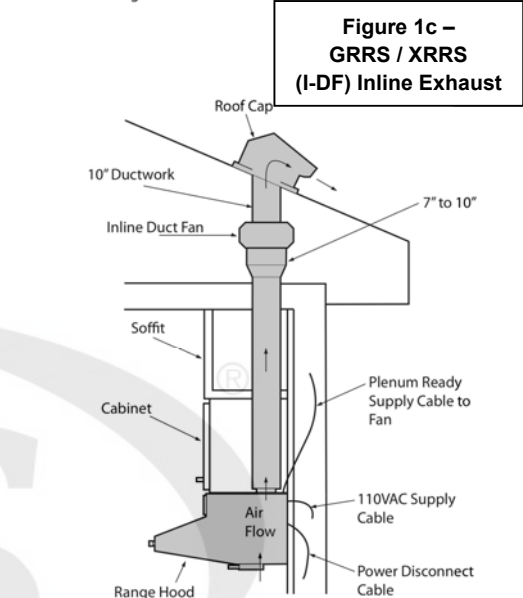
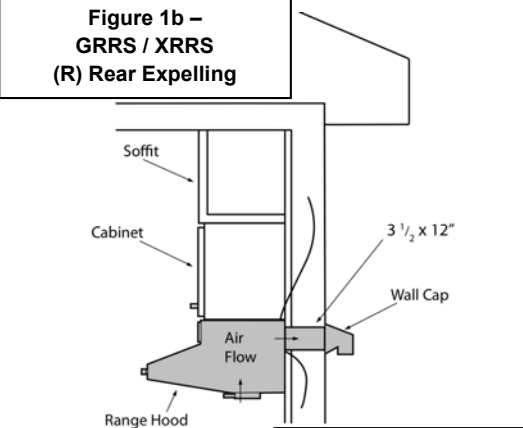
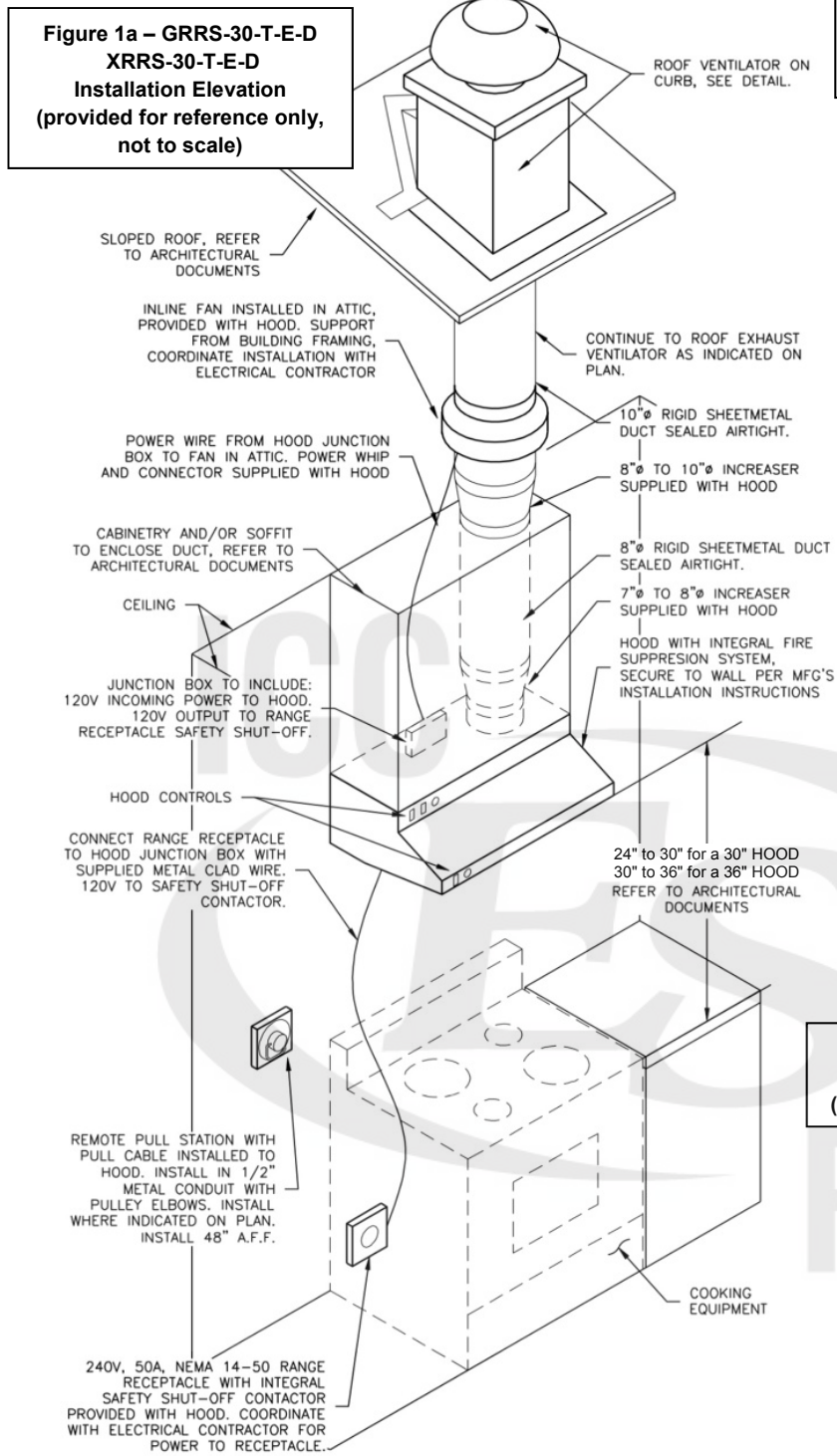
Standard calibrations of the Greenheck GRRS and Accurex XRRS are combined with additional air delivery capabilities, a Mechanical Pull Station and The CLOCKBOX Cooking Element Control System to offer a packaged upgrade designed to comply with section 18.3.2.5.3 of The NFPA Life Safety Code (NFPA101).

Greenheck Model	Accurex Model	Width (inch)	Fan	Vent	CFM	Stove Power
GRRS-30-F-E-N	XRRS-30-F-E-N	30	Internal	Recirculating	500	Electric
GRRS-30-F-G-N	XRRS-30-F-G-N	30	Internal	Recirculating	500	Gas
GRRS-36-F-E-N	XRRS-36-F-E-N	36	Internal	Recirculating	500	Electric
GRRS-36-F-G-N	XRRS-36-F-G-N	36	Internal	Recirculating	500	Gas
GRRS-30-R-E-N	XRRS-30-R-E-N	30	Internal	Rear	500	Electric
GRRS-30-R-G-N	XRRS-30-R-G-N	30	Internal	Rear	500	Gas
GRRS-36-R-E-N	XRRS-36-R-E-N	36	Internal	Rear	500	Electric
GRRS-36-R-G-N	XRRS-36-R-G-N	36	Internal	Rear	500	Gas
GRRS-30-T-E-D-N	XRRS-30-T-E-D-N	30	Duct In-Line	Top	510	Electric
GRRS-30-T-G-D-N	XRRS-30-T-G-D-N	30	Duct In-Line	Top	510	Gas
GRRS-36-T-E-D-N	XRRS-36-T-E-D-N	36	Duct In-Line	Top	510	Electric
GRRS-36-T-G-D-N	XRRS-36-T-G-D-N	36	Duct In-Line	Top	510	Gas
GRRS-30-T-E-W-N	XRRS-30-T-E-W-N	30	Wall Mount Fan	Top	550	Electric
GRRS-30-T-G-W-N	XRRS-30-T-G-W-N	30	Wall Mount Fan	Top	550	Gas
GRRS-36-T-E-W-N	XRRS-36-T-E-W-N	36	Wall Mount Fan	Top	550	Electric
GRRS-36-T-G-W-N	XRRS-36-T-G-W-N	36	Wall Mount Fan	Top	550	Gas

Conditions of Listing:

1. The Greenheck GRRS and Accurex XRRS Fire Suppression Range Hoods recognized in this listing must be installed in accordance with the manufacturer’s published installation instructions and the applicable codes.
2. An automatic activation for fire suppression system is required, if provided the manual activation device shall be in accordance with Section 904.11.1 of the IBC.
3. Greenheck GRRS and Accurex XRRS Fire Suppression Range Hoods are not to be used over cooking appliances which are used for commercial purposes when appliances is primarily used for the preparation of food for compensation, trade or services rendered.
4. The Greenheck GRRS and Accurex XRRS Fire Suppression Range Hoods recognized in this listing are manufactured in Chester Connecticut, under a quality control program with annual surveillance inspections by ICC-ES.





**Figure 2 – GRRS / XRRS
System Anatomy:
Depiction from Front/right view**

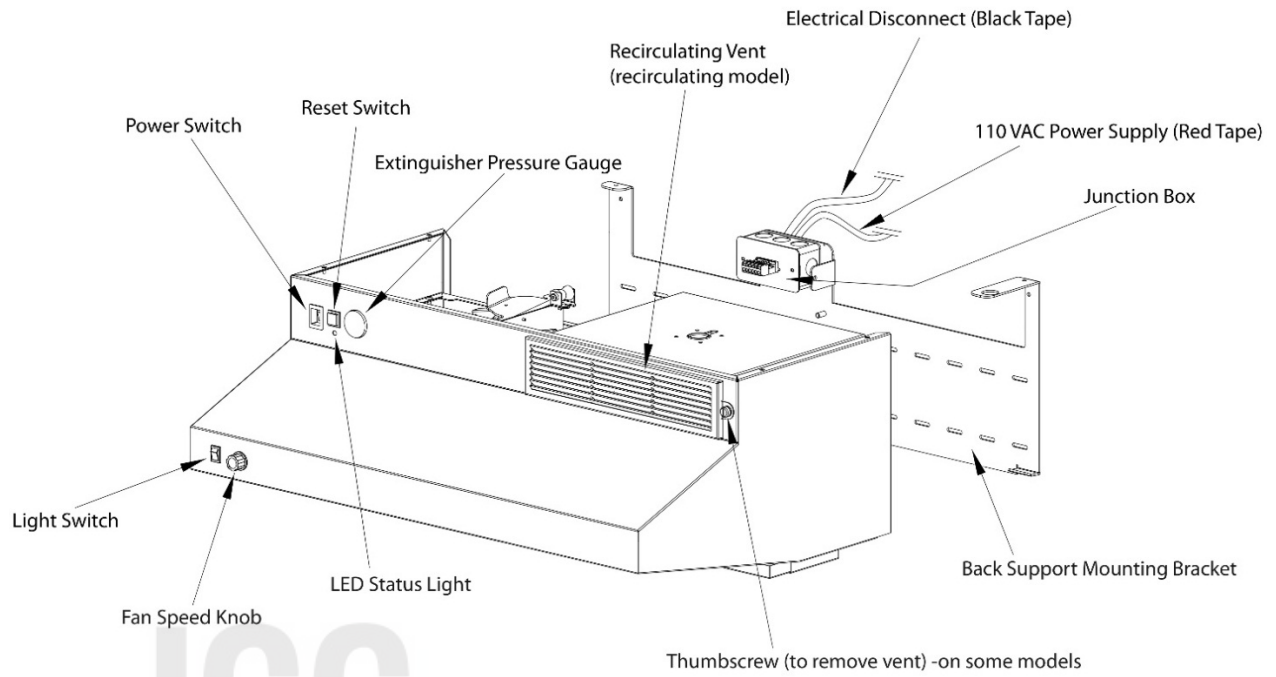


Figure 3 – GRRS / XRRS System Anatomy: Depiction from Front/right view

