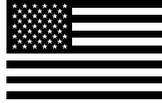




www.fostoriaindustries.com



Made in U.S.A.

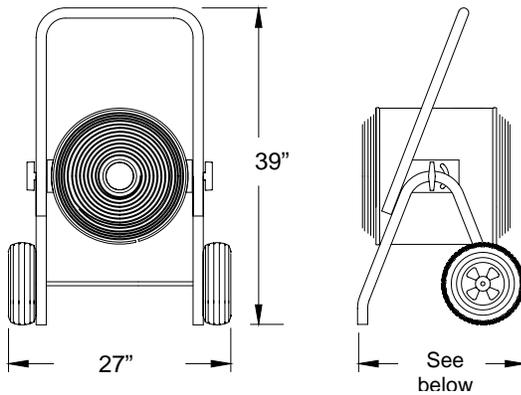
ELECTRIC PORTABLE HEATER

FES-1024-1CA 08860010	YES-1024-1CA 08861510
FES-1520-3A 08860110	YES-1520-3A 08860810
FES-1524-1A 08860710	YES-1524-1A 08861810
FES-1524-3E 08860210	YES-1524-3E 08860910
FES-1548-3E 08860310	YES-1548-3E 08861010
FES-1560-3A 08860410	YES-1560-3A 08861110
FES-3048-3A 08860510	YES-3048-3A 08861210
FES-3060-3A 08860610	YES-3060-3A 08861310



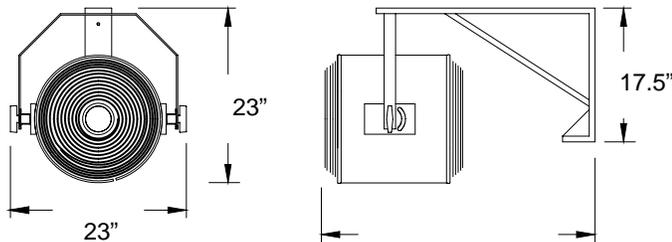
WARNING! DO NOT ATTEMPT TO INSTALL, OPERATE, OR SERVICE THIS PRODUCT BEFORE READING ALL INSTRUCTIONS CAREFULLY. FAILURE TO COMPLY WITH THESE INSTRUCTIONS COULD RESULT IN FIRE, PERSONAL INJURY AND/OR PROPERTY DAMAGE! RETAIN INSTRUCTIONS FOR FUTURE REFERENCE.

FES Models



10kW 1 phase & 15kW series 3 phase: "21"
15kW series 1 phase & 30Kw series: "23"

YES Models



10Kw series: 36"
15Kw series 1 PH : 38"
15Kw series 3 PH : 36"
30Kw series: 38"

REQUIRED CLEARANCES

ON ALL MODELS: KEEP COMBUSTIBLE MATERIALS SUCH AS FURNITURE, PAPERS, CLOTHES AND CURTAINS AT LEAST 3 FEET FROM THE FRONT, SIDES AND REAR OF HEATER.

ADDITIONAL CLEARANCE REQUIREMENTS FOR ALL "YES" MODELS: THE UNIT MUST BE MOUNTED AT LEAST 6 FEET (OR 1.8 METERS) OFF THE FLOOR AND 2 FEET FROM THE CEILING.

SPECIFICATIONS

UL File Number:
FES models.....E154159
YES models.....E32304

Fan Output:
10 & 15 KW series.....800 CFM
30 KW series.....1100 CFM

Heat output:
10 KW series.....34130 BTU
15 KW series.....51120 BTU
30 KW series.....102390 BTU

Power requirements:
FES & YES 1024-1CA.....240V, 1PH, 42 Amps
FES & YES 1520-3A.....208V, 3PH, 41.5 Amps
FES & YES 1524-1A.....240V, 1PH, 62.5 Amps
FES & YES 1524-3E.....240V, 3PH, 36 Amps
FES & YES 1548-3E.....480V, 3PH, 18 Amps
FES & YES 1560-3A.....600V, 3PH, 14.4 Amps
FES & YES 3048-3A.....480V, 3PH, 36 Amps
FES & YES 3060-3A.....600V, 3PH, 30 Amps

IMPORTANT SAFETY INFORMATION

Read all instructions before using this heater.

SOME SMOKING MAY OCCUR DURING THE FIRST 100 MINUTES OF OPERATION. THIS IS NORMAL AND IS THE RESULT OF A PROTECTIVE COATING ON THE HEATING ELEMENTS. OPERATION DURING THIS INITIAL PERIOD SHOULD THEREFORE BE DONE IN A WELL-VENTILATED AREA.

DO NOT USE OUTDOORS.

This heater is hot when in use. To avoid burns, do not let bare skin touch hot surfaces. Use handle when moving this heater.

Extreme caution is necessary when any heater is used by or near children or invalids and whenever the heater is left operating and unattended.

(Continued on page 2)

SAFETY INFORMATION (CONT)

Always unplug heater when not in use, or de-energize at control box.

Do not operate any heater if the cord or plug is damaged, or after the heater malfunctions, has been dropped or damaged in any manner. Return heater to authorized service facility for examination, electrical or mechanical adjustment, or repair.

This heater is not intended for use in bathrooms, laundry areas and similar indoor locations. Never locate heater where it may fall into a water container.

Do not run cord under carpeting. Do not cover cord with throw rugs, runners, or the like. Arrange cord away from traffic area and where it will not be tripped over.

To disconnect heater, turn controls to off, then remove plug from outlet, or de-energize at main control box. Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock or fire, or damage the heater.

To prevent a possible fire, do not block air intakes or exhaust in any manner. Do not use on soft surfaces where openings may become blocked.

A heater has hot and arcing or sparking parts inside. Do not use it in areas where gasoline, paint, or flammable liquids are used or stored.

Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.

Connect to properly grounded outlets only.

CAUTION: Check branch voltage. Heater should be operated at voltages no higher than the heating elements and heater are designed for.

Make certain incoming power conforms to the requirement of the heater.

NOTE: The fan motor is equipped with an automatic reset, internal thermal protector to protect the motor from overheating under a locked rotor condition. A high temperature limit is mounted adjacent to the finned tubular element. If the elements are over-heated due to over-voltage or restricted airflow, the temperature limit switch will shut down the salamander. The switch will automatically reset when the unit has cooled, usually within 45 minutes.

Do not block or tamper with heater in any manner while it is in operation. Do not touch heater while it is in operation or just after it has been turned off, as some parts may be hot enough to cause injury.

CAUTION: High temperature; keep electrical cords, drapery and other furnishings at least three feet from the front of the heater and away from side and rear.

CAUTION: Risk of fire. Do not operate FES units without legs attached.

CAUTION: Do not operate unit without grilles in place.

This heater is intended for general industrial or commercial heating applications **ONLY**. It must **NOT** be used in potentially dangerous locations such as flammable, explosive, chemical-laden or wet atmospheres.

Unit is wired with a grounded system and must be connected to the building ground to protect against shock hazard.

Disconnect power supply to the heater before servicing or inspecting any part thereof. Failure to do so may result in electrical shock.

Replace damaged cords and plugs immediately.

This unit is not suitable for residential or household use.

SAVE THESE INSTRUCTIONS

MAINTENANCE

CAUTION: Disconnect heater from power supply before servicing and/or inspecting the heat source; failure to do so may result in electrical shock. Replace or repair damaged cords or plugs immediately. Check tightness of all electrical connections prior to energizing the salamander, and periodically thereafter. A qualified electrician should service this unit. **WARNING: Do not remove access door, without first disconnecting the external power supply.** Motor bearings are permanently lubricated.

OPERATING INSTRUCTIONS

Heater is energized by connecting the cable termination to a grounded outlet or wiring to a safety switch. (cable/termination by others).

NOTE: The fan should be left to operate at least 3 minutes after the heating elements have been turned off, to purge heat from the unit and prevent overheating of the housing.

INSTALLATION

Always use the proper size **SO** cable for the electrical hook-up of this salamander. The proper cable size is shown in the table below. Fostoria offers the cable kits as indicated by unit rating.

Unit Rating	Cable Size	Kit Number
15kW, 208 Volt, 3-Ph	6/4	03164001
15kW, 240 Volt, 1-Ph	4/3	08805300
15kW, 240 Volt, 3-Ph	6/4	03164001
15kW, 480 Volt, 3-Ph	12/4	03164201
15kW, 600 Volt, 3-Ph	12/4	03164201
30kW, 480 Volt, 3-Ph	6/4	03164001
30kW, 600 Volt, 3-Ph	6/4	03164001

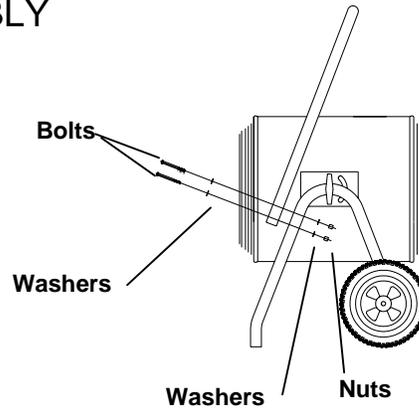
The electrical connections must include some provision for grounding the salamander. The grounding means may be through the electrical circuit or to a suitable earth ground. Connect the ground to the pressure connector located near the contactor. Salamander units are factory pre-wired for 3-phase delta or 1-phase (15kW 240V only) operation. Follow local wiring codes and/or the National Electric Code for the connection of the salamander to a suitable electric circuit.

“FES” ASSEMBLY

All Fostoria FES models come fully assembled with the handle attached in a lowered shipping position.
 Tools Required: (2) 7/16” sockets or box wrenches

To position the handle at operating height:

- Step 1:** Remove and keep the hardware securing the handle to the legs.
- Step 2:** Raise handle until holes align with the upper holes in the legs.
- Step 3:** Re-insert hardware as shown.

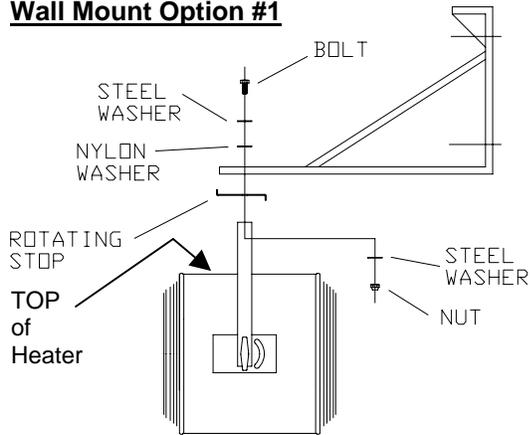


“YES” ASSEMBLY & MOUNTING INSTRUCTIONS

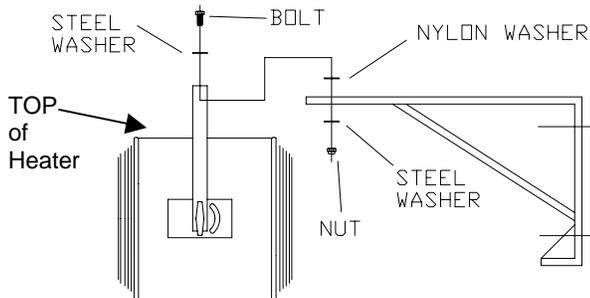
All Fostoria YES models require some assembly. Tools Required: (2) 3/4” sockets or box wrenches

- Step 1:** Assemble Yoke to heater per “Yoke/Heater Assembly” detail. No tools are required.
 - Step 2:** Secure wall/ceiling mounting bracket to appropriate surface that will support a min. weight of 100lbs. NOTE: all mounting hardware is customer specified and supplied.
 - Step 3:** Assemble Unit to mounting bracket following instructions of chosen mounting option.
- NOTE:** Heater cannot be mounted upside down, refer to product ID label for “TOP” of Heater.

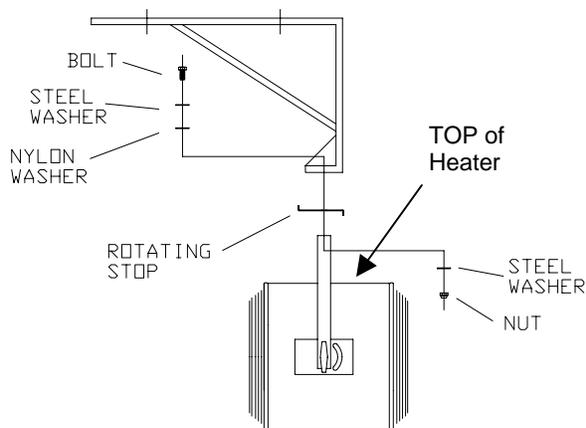
Wall Mount Option #1



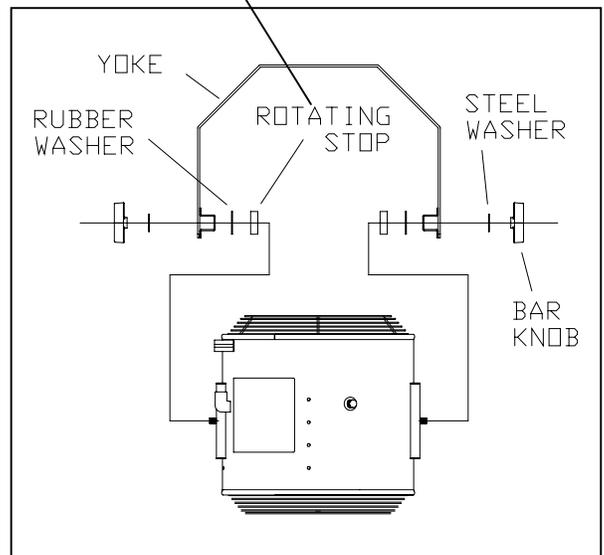
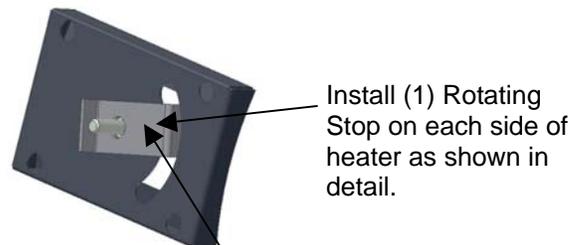
Wall Mount Option #2



Ceiling Mount Option



YOKE / HEATER ASSEMBLY TYPICAL FOR ALL MOUNTING OPTIONS

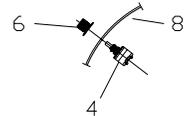
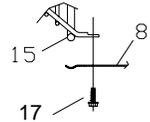


FES & YES COMMON REPLACEMENT PARTS LIST & EXPLODED VIEWS

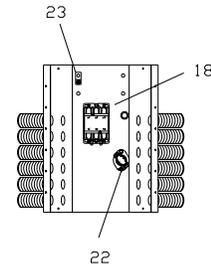
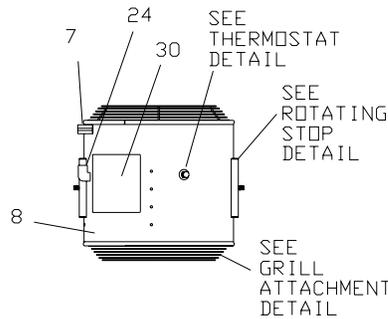
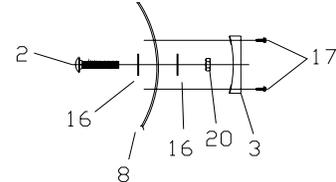
Ref No.	Description	1024-1CA	1520-3A	1524-3E	1548-3E	1560-3A	3048-3A	3060-3A
1	Motor	8482001 (1)	8482001 (1)	8482001 (1)	8482002 (1)	8482003 (1)	8482004 (1)	8482005 (1)
2	Bolt carriage 1/2-13 x 2-3/4	2470132 (2)	2470132 (2)	2470132 (2)	2470132 (2)	2470132 (2)	2470132 (2)	2470132 (2)
3	Rotating stop	8481223 (2)	8481223 (2)	8481223 (2)	8481223 (2)	8481223 (2)	8481223 (2)	8481223 (2)
4	Thermostat	2470300 (1)	2470300 (1)	2470300 (1)	2470300 (1)	2470300 (1)	2470300 (1)	2470300 (1)
5								
6	Knob thermostat	2470500 (1)	2470500 (1)	2470500 (1)	2470500 (1)	2470500 (1)	2470500 (1)	2470500 (1)
7	Strap	2470800 (1)	2470800 (1)	2470800 (1)	2470800 (1)	2470800 (1)	2470800 (1)	2470800 (1)
8	Shroud	8480910 (1)	8480910 (1)	8480910 (1)	8480910 (1)	8480910 (1)	8481110 (1)	8481110 (1)
9	Motor mount bracket	8480801 (1)	8480801 (1)	8480801 (1)	8480801 (1)	8480801 (1)	8480800 (1)	8480800 (1)
10	Screw 10-32x 5/16 SEMS	2470932 (8)	2470932 (12)	2470932 (12)	2470932 (12)	2470932 (12)	2470932 (24)	2470932 (24)
11	Mount motor end	8480700 (2)	8480700 (2)	8480700 (2)	8480700 (2)	8480700 (2)	8480700 (2)	8480700 (2)
12	Washer 9/16	3419500 (8)	3419500 (12)	3419500 (12)	3419500 (12)	3419500 (12)	3419500 (24)	3419500 (24)
13	Nut hex 1/4-20	3426000 (4)	3426000 (4)	3426000 (4)	3426000 (4)	3426000 (4)	3426000 (4)	3426000 (4)
14	Washer 1/4	3427900 (8)	3427900 (8)	3427900 (8)	3427900 (8)	3427900 (8)	3427900 (8)	3427900 (8)
15	Grill	8480621 (2)	8480621 (2)	8480621 (2)	8480621 (2)	8480621 (2)	8480621 (2)	8480621 (2)
16	Washer	2472032 (4)	2472032 (4)	2472032 (4)	2472032 (4)	2472032 (4)	2472032 (4)	2472032 (4)
17	Screw 8-18 x 1/2	3444456	3444456	3444456	3444456	3444456	3444456	3444456
18	Contact	8480402 (1)	8480402 (1)	8480400 (1)	8480401 (1)	8480403 (1)	8480401 (1)	8480403 (1)
19	Cordset - not shown	3171701 (1)	-----	-----	-----	-----	-----	-----
20	Nut 1/2-13	3460200 (2)	3460200 (2)	3460200 (2)	3460200 (2)	3460200 (2)	3460200 (2)	3460200 (2)
21	Screw 1/4-20 x 3/4	3494156 (4)	3494156 (4)	3494156 (4)	3494156 (4)	3494156 (4)	3494156 (4)	3494156 (4)
22	Over temperature switch	3183900 (1)	3183900 (1)	3183900 (1)	3183900 (1)	3183900 (1)	41041001 (1)	41041001 (1)
23	Ground Lug	41254001 (1)	41254001 (1)	41254001 (1)	41254001 (1)	41254001 (1)	41254001 (1)	41254001 (1)
24	Connector	7714122 (1)	7714122 (1)	7714122 (1)	7714122 (1)	7714122 (1)	7714122 (1)	7714122 (1)
25	Baffle - not shown	-----	-----	-----	-----	-----	8483800 (1)	8483800 (1)
26	Bussbar - not shown	8421600 (4)	8421600 (8)	8421600 (8)	8421600 (5)	8421600 (5)	8421600 (10)	8421600 (10)
27	Element inner	8481401 (2)	8481403 (3)	8481401 (3)	8481401 (3)	8481405 (3)	8481401 (6)	8481405 (6)
28	Element outer	8481402 (2)	8481404 (3)	8481402 (3)	8481402 (3)	8481406 (3)	8481402 (6)	8481406 (6)
29	Blade fan - not shown	8422300 (1)	8422300 (1)	8422300 (1)	8422300 (1)	8422300 (1)	8422300 (1)	8422300 (1)
30	Cover	8481010 (1)	8481010 (1)	8481010 (1)	8481010 (1)	8481010 (1)	8481010 (1)	8481010 (1)

GRILL ATTACHMENT

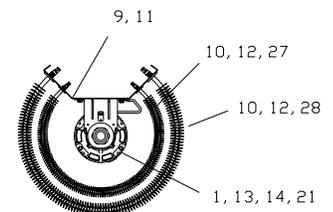
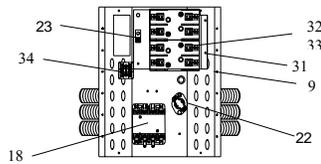
THERMOSTAT



ROTATING STOP



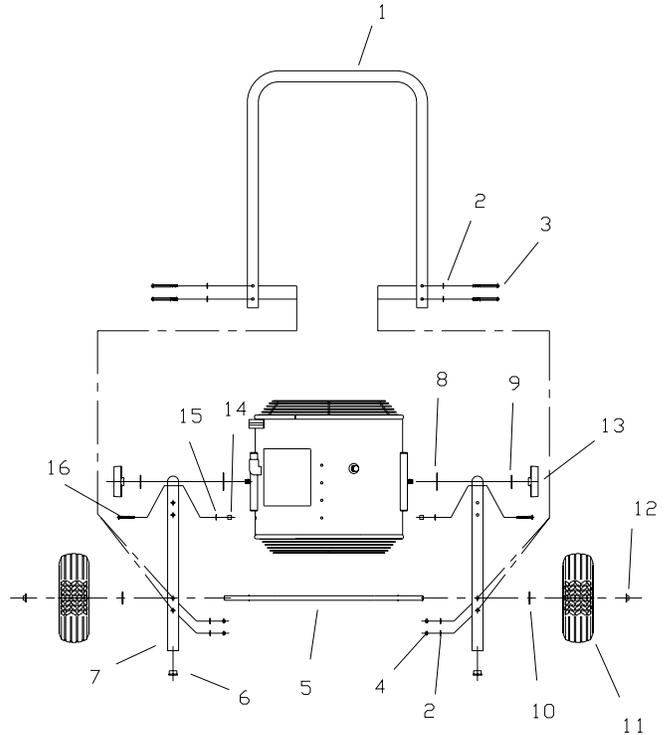
1524-1A μοδελ ονλ



Ref No.	Description	1524-1A
1	Motor	8482001 (1)
2	Bolt carriage 1/2-13 x 2-3/4	2470132 (2)
3	Rotating stop	8481223 (2)
4	Thermostat	2470300 (1)
5		
6	Knob thermostat	2470500 (1)
7	Strap	2470800 (1)
8	Shroud	8481810 (1)
9	Motor mount bracket	8480800 (1)
10	Screw 10-32x 5/16 SEMS	2470932 (12)
11	Mount motor end	8480700 (2)
12	Washer 9/16	3419500 (12)
13	Nut hex 1/4-20	3426000 (4)
14	Washer 1/4	3427900 (10)
15	Grill	8480621 (2)
16	Washer	2472032 (4)
17	Screw 8-18 x 1/2	3444456
18	Contact	8480406 (1)
19		
20	Nut 1/2-13	3460200 (2)
21	Screw 1/4-20 x 3/4	3494156 (4)
22	Over temperature switch	3183900 (1)
23	Ground Lug	41254001 (1)
24	Connector	7714127 (1)
25		
26	Bussbar - not shown	8421600 (8)
27	Element inner	8481401 (3)
28	Element outer	8481402 (3)
29	Blade fan - not shown	8422300 (1)
30	Cover	8481010 (1)
31	Bracket fuse block	8481700 (1)
32	Fuse block	8481600 (2)
33	Fuse type FLNR-40 250V	71031471 (4)
34	Terminal block	51243002 (1)

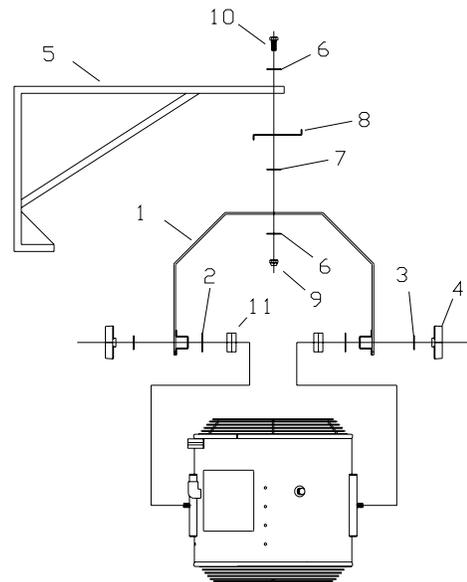
“FES” REPLACEMENT PARTS LIST & EXPLODED VIEW

Ref No.	Description	Part No.	Qty.
1	Handle	8480021	1
2	Washer flat ¼	3442532	8
3	Screw ¼-20 x 2-3/4	2470032	4
4	Nut stop ¼-20	3440132	4
5	Axle	8480232	1
6	Cap plug	3409200	2
7	Leg	8480121	2
8	Washer rubber	2480200	2
9	Spacer	8480500	2
10	Washer flat ½	3460156	2
11	Wheel	8480300	2
12	Push nut	8045700	2
13	Bar Knob	2470200	2
14	Spacer	2471932	2
15	Washer lock ¼	3427900	2
16	Screw ¼-20 x 1-3/4	2471832	2



“YES” REPLACEMENT PARTS LIST & EXPLODED VIEW

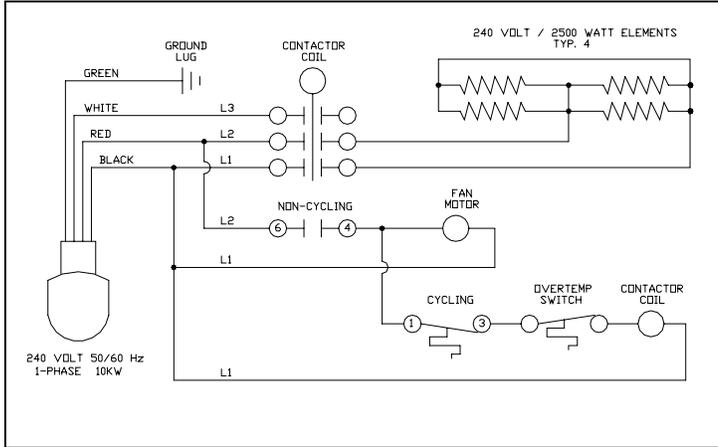
Ref No.	Description	Part No.	Qty.
1	Yoke	8484023	1
2	Washer rubber	2480200	2
3	Spacer	8480500	2
4	Bar knob	2470200	2
5	Mounting bracket	57074002	1
6	Washer fender	3472232	2
7	Washer nylon	3443700	1
8	Rotating stop	8483923	1
9	Nut stop ½-13	3446432	1
10	Screw ½-13 x 1-1/2	2480132	1
11	Rotating Stop – Side	8484423	2



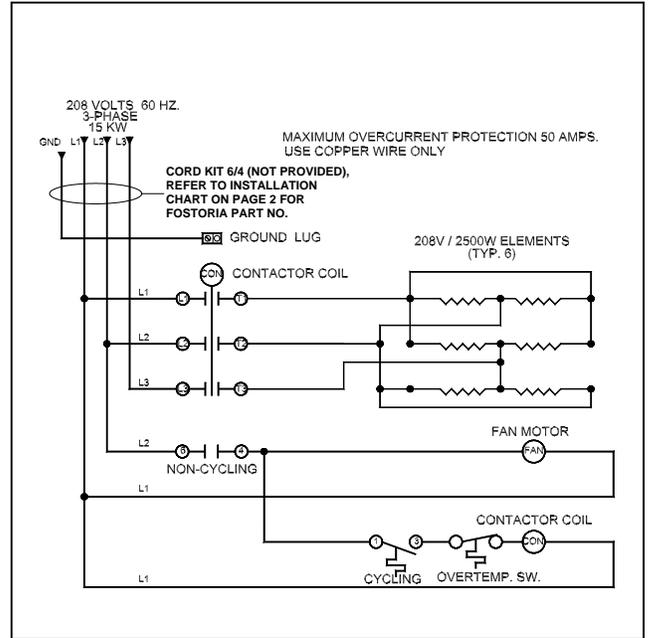
**To convert an FES unit to a YES unit
order the Fostoria kit Model WMK-FES
p/n 04804102.**

FES & YES WIRING DIAGRAMS

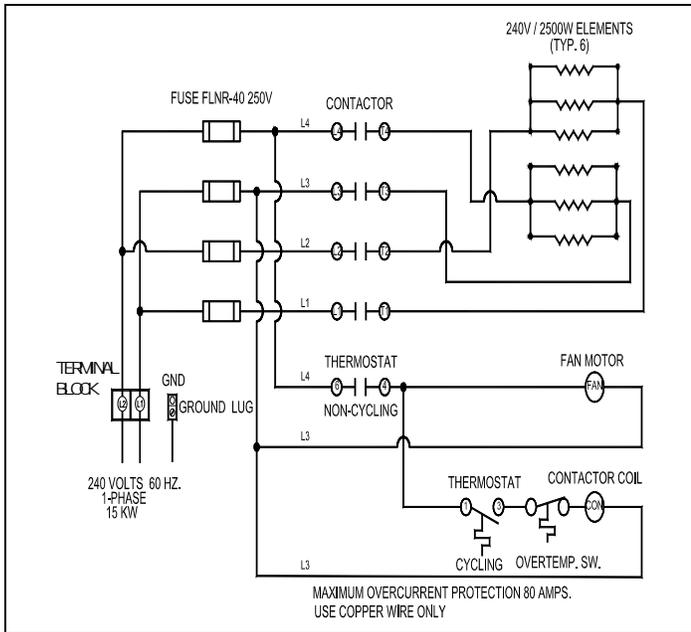
1024-1CA



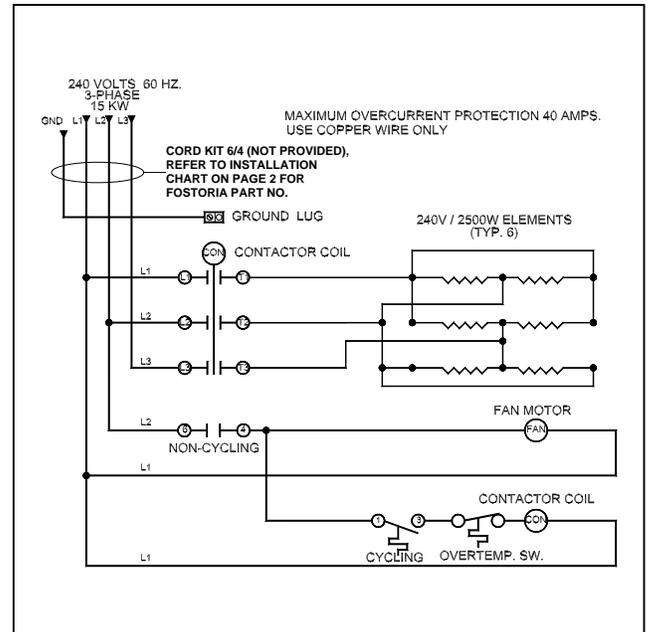
1520-3A



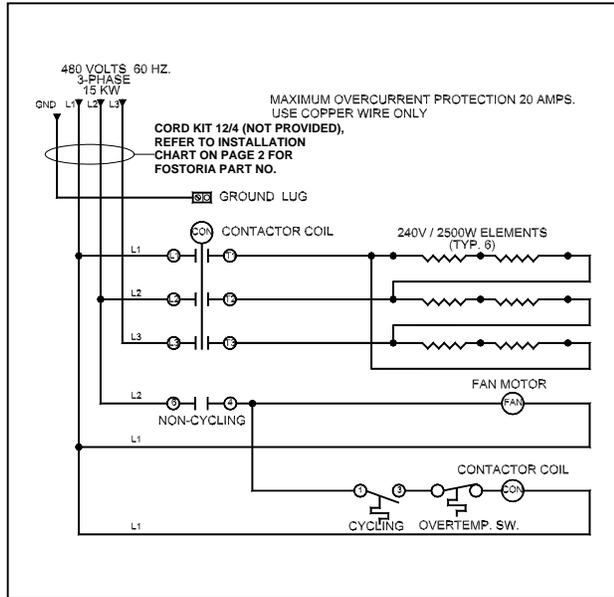
1524-1A



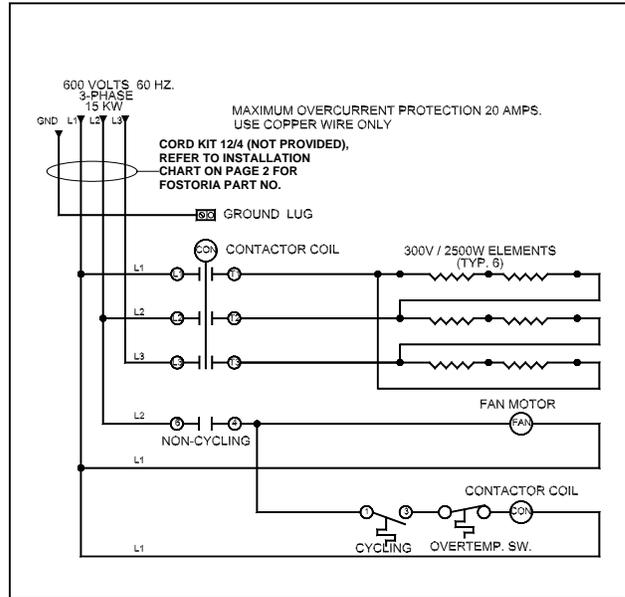
1524-3E



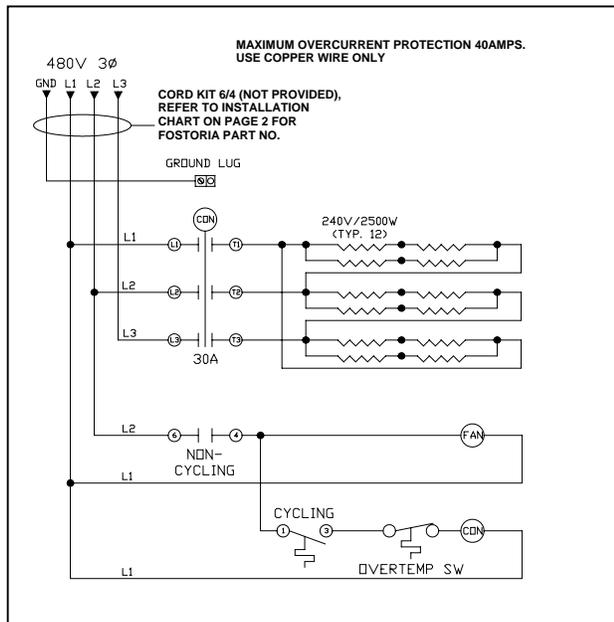
1548-3E



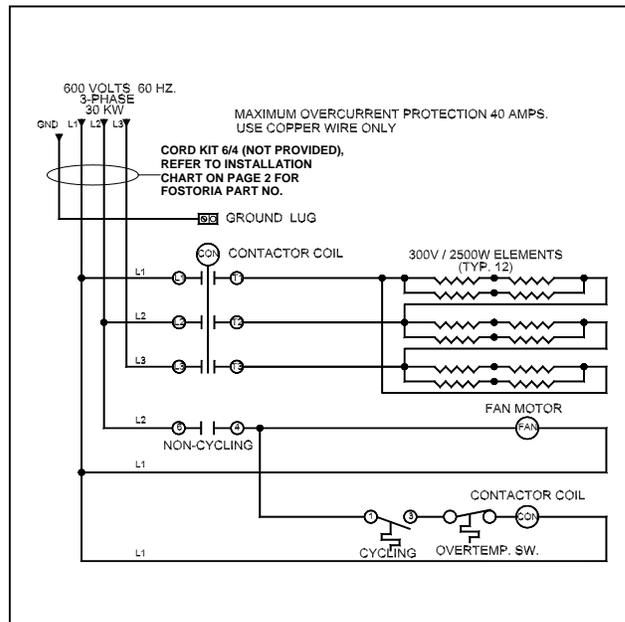
1560-3A



3048-3A



3060-3A



WARRANTY

FOSTORIA INDUSTRIES, INC. - P.O. Box 986 - Fostoria, Ohio 44830-0986 - (419) 435-9201

The warranty herein set forth is in lieu of all other warranties expressed or implied.

Fostoria Industries, Inc. of Fostoria, Ohio 44830, warrants its products to the owner against defects in material and workmanship for a twelve (12) month period under normal use and service following date of manufacture or installation when proof of such is provided to seller.

This Warranty requires that the owner, or his agent, install the equipment in accordance with the National Electrical Code, any other applicable heating or electrical codes and the manufacturer's installation instructions. It further requires that he perform reasonable and necessary maintenance on the unit. The company is not liable for abuse or misuse of product as may be finally determined by the company.

The obligation of Fostoria Industries, Inc. under the terms of this warranty, shall be to supply a new part, repair of defective part, or a refund, at the company's option with no cost to owner for the new or repaired part. Such parts are to be returned to the factory, or such other location as the company may designate. This warranty does not obligate Fostoria Industries, Inc. to bear the cost of labor in replacing any assembly, unit or component part thereof, nor does the company assume any liability for secondary charges, expenses for installing or removal, or any other consequential losses. The company's maximum liability shall not in any case exceed the list price for the product claimed to be defective.

The warranty shall not apply to any product or parts of products which have been repaired or altered outside of Seller's factory in any manner. Warranty is void on products that have been determined to have been subjected to misuse, negligence or accident or which have been used in a manner contrary to Seller's instructions.