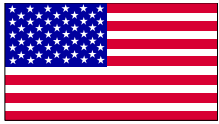




Quality Since 1917
SUN-MITE



A DIVISION OF



(FES-1524-3E shown)

FES - Series
Portable Electric Heaters

YES - Series
Suspended Electric Heaters

⚠ WARNING



IMPORTANT SAFETY INFORMATION INSIDE

- Serious injury or death possible.
- Read, understand, and follow all safety information and instructions in this manual before using or servicing this product.
- Retain these instructions for future reference.

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SPECIFICATIONS

Portable Electric Heaters – UL file number E154159

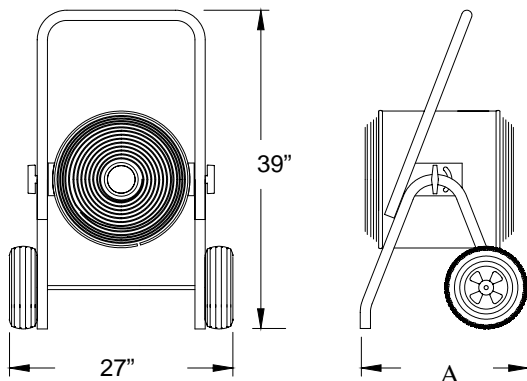
Model	Part number	kW	Volts	PH	Amps	Fan Output	Heat Output	Dim A
FES-1024-1CA	08860010	10	240	1	42	800 CFM	34152 BTUH	21"
FES-1520-3A	08860110	15	208	3	41.5	800 CFM	51228 BTUH	21"
FES-1524-1A	08860710	15	240	1	62.5	800 CFM	51228 BTUH	23"
FES-1524-3E	08860210	15	240	3	36	800 CFM	51228 BTUH	21"
FES-1548-3E	08860310	15	480	3	18	800 CFM	51228 BTUH	21"
FES-1560-3A	08860410	15	600	3	14.4	800 CFM	51228 BTUH	21"
FES-3048-3A	08860510	30	480	3	36	1100 CFM	102455 BTUH	23"
FES-3060-3A	08860610	30	600	3	30	1100 CFM	102455 BTUH	23"

Suspended Electric Heaters – UL file number E32304

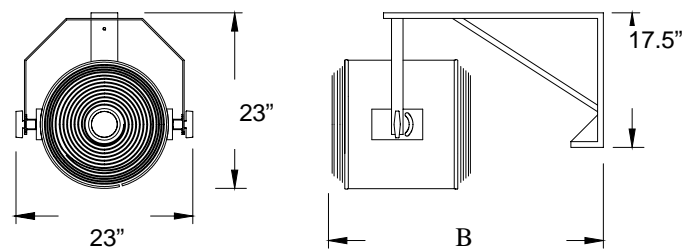
Model	Part number	kW	Volts	PH	Amps	Fan Output	Heat Output	Dim B
YES-1024-1CA	08861510	10	240	1	42	800 CFM	34152 BTUH	36"
YES-1520-3A	08860810	15	208	3	41.5	800 CFM	51228 BTUH	36"
YES-1524-1A	08861810	15	240	1	62.5	800 CFM	51228 BTUH	38"
YES-1524-3E	08860910	15	240	3	36	800 CFM	51228 BTUH	36"
YES-1548-3E	08861010	15	480	3	18	800 CFM	51228 BTUH	36"
YES-1560-3A	08861110	15	600	3	14.4	800 CFM	51228 BTUH	36"
YES-3048-3A	08861210	30	480	3	36	1100 CFM	102455 BTUH	38"
YES-3060-3A	08861310	30	600	3	30	1100 CFM	102455 BTUH	38"

Description – Fostoria portable and suspended electric heaters provide clean, quiet, odor-free, fan-forced heat. They are designed to circulate room air continuously; gradually heating a confined space. The best results will be obtained when using these heaters in smaller, insulated spaces. Features include a safety-yellow enclosure with front and rear safety screens; reliable stainless steel finned heating elements; a high-limit temperature switch with automatic reset; an automatic thermostat control with fan-only option; and a long-life motor and fan assembly with sealed bearings. The portable (FES) models come mounted on a two-wheeled cart with wheels designed to be easily pushed or pulled over uneven surfaces.

FES Models



YES Models



YES models are shipped with the following items. Check to make certain all parts are at hand prior to beginning the installation.

All Fostoria FES models come fully-assembled except the handle is attached in a lowered shipping position when shipped from the factory. Dimensions above are for handle in operating position. See page 4 for final assembly of handle.

Quantity	Description	Quantity	Description
1	Bracket wall/ceiling	1	Rotating stop - Top
1	Hanger	1	Nut stop ½ -13
2	Washer steel	1	Bolt ½-13 x 1-1/2
2	Knob	1	Nylon washer
2	Washer rubber	2	Rotating stop – side

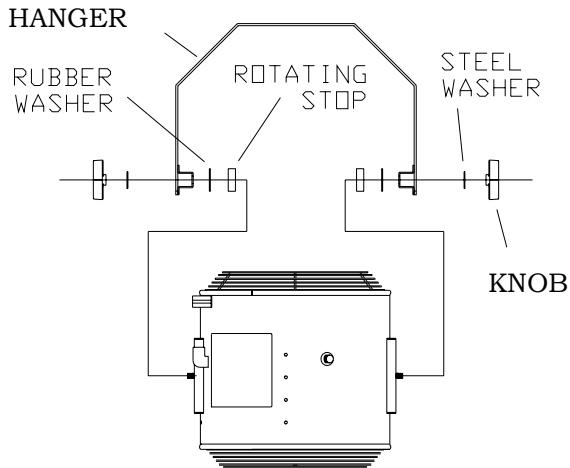
YES - SERIES INSTALLATION

ALL Fostoria YES models require some assembly. Four steps are required to complete the assembly and installation.

Tools required: (2) 3/4" socket or box wrenches.

Parts required: the two screws required to secure wall/ceiling bracket to a suitable surface are not supplied with heater. You must use 5/16" bolts and flat washers to mount this bracket.

Hanger Assembly Detail



Step 1: Install (1) side rotating stop over bolt and into curved slot (as shown at right) on each side of heater.

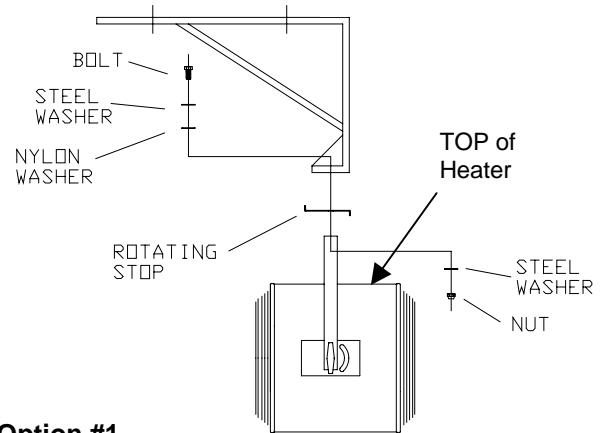


Step 2: Assemble hanger to heater per hanger assembly detail. No tools are required.

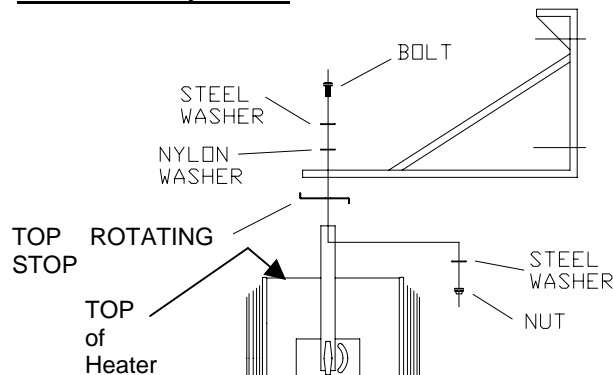
Step 3: Secure wall/ceiling mounting bracket to appropriate surface that will support a min. weight of 100lbs continuously. NOTE: all mounting hardware to mount hanger to wall/ceiling bracket is supplied with heater.

Step 4: Assemble unit to mounting bracket following instructions of chosen mounting option below.

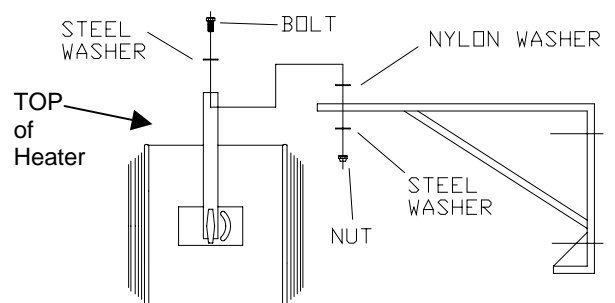
Ceiling Mount Option



Wall Mount Option #1



Wall Mount Option #2



⚠ **WARNING**

FALLING OBJECTS HAZARD
FIRE HAZARD

- Serious injury or death may occur.**
- Read and follow all safety information and instructions in box below.**

- Mounting bracket supplied with YES models MUST be used to support heater.**
- Installer MUST be certain surface that bracket is mounted to will support 100 lbs of weight continuously.**
- Rotating stops MUST be installed as shown above.**
- Do not mount heater upside down (See nameplate label for "TOP" of heater.)**
- The bottom of these units must be mounted at least 6 ft. off the floor and the top 2 ft. from the ceiling.**
- Do not suspend ANY other equipment from this bracket. One heater per bracket maximum.**

FES – SERIES ASSEMBLY

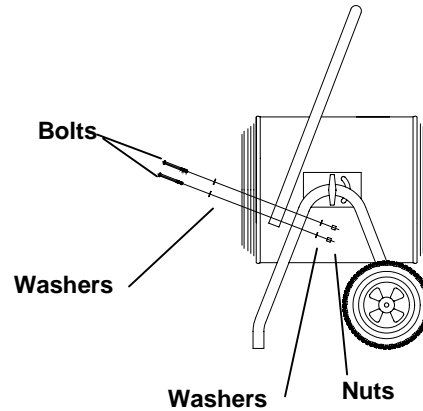
Tools Required: (2) 7/16" socket or box wrenches.

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, and fasten securely.



WIRING

THE PROPER SIZE SO- type feeder cable MUST BE USED for the electrical hook-up of this heater. The proper cable size is shown in the tables below (A.W.G./ # of conductors.) Table 1 is for cable 50ft. in length or less. Table 2 is for cable longer than 50ft.

A 25ft. cable kit can be purchased from the factory. Refer to the kit part numbers in table at right.

CABLE KITS INCLUDE:

- 25 feet of Type SO cable, with either 3-conductors or 4-conductors, depending on the heater requirements.

Model Table 1	Unit Rating	Cable Size - Under 50ft. long	Cable Kit Number
FES & YES 1520-3A	15kW, 208 Volt, 3-Ph	6/4	03164001
FES & YES 1524-1A	15kW, 240 Volt, 1-Ph	4/3	08805300
FES & YES 1524-3E	15kW, 240 Volt, 3-Ph	6/4	03164001
FES & YES 1548-3E	15kW, 480 Volt, 3-Ph	12/4	03164201
FES & YES 1560-3A	15kW, 600 Volt, 3-Ph	12/4	03164201
FES & YES 3048-3A	30kW, 480 Volt, 3-Ph	6/4	03164001
FES & YES 3060-3A	30kW, 600 Volt, 3-Ph	6/4	03164001

Model Table 2	Unit Rating	Cable Size – Over 50ft. long	Max. Cable Length (ft)
FES & YES 1520-3A	15kW, 208 Volt, 3-Ph	4/4	120
FES & YES 1524-1A	15kW, 240 Volt, 1-Ph	2/3	215
FES & YES 1524-3E	15kW, 240 Volt, 3-Ph	6/4	150
FES & YES 1548-3E	15kW, 480 Volt, 3-Ph	12/4	140
FES & YES 1560-3A	15kW, 600 Volt, 3-Ph	12/4	190
FES & YES 3048-3A	30kW, 480 Volt, 3-Ph	6/4	300
FES & YES 3060-3A	30kW, 600 Volt, 3-Ph	6/4	350

To order cable kits

Phone: 1-800-495-4525

- Feeder cable or cable kit assembly **MUST BE** made by licensed electricians **ONLY**.
- Service panel or receptacle used to supply power to these heaters **MUST** have a ground bus or ground pole that is securely bonded to earth ground.
- Connect green ground conductor on feeder cable or cable kit to grounding lug on heaters.
- Comply with **ALL** local electrical codes and the National Electric Code (NFPA70) when providing electrical power to these heaters.



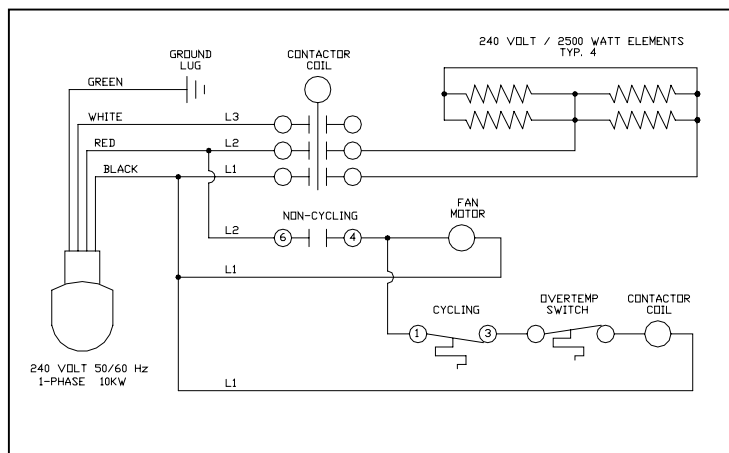
⚠ WARNING

ELECTRICAL SHOCK HAZARD FIRE HAZARD

- Serious injury or death may occur.
- Disconnect from electrical supply before installing feeder cable to these heaters.
- Read and follow all safety information in box to the left.

WIRING (continued)

FES-1024-1CA YES-1024-1CA



Models FES-1024-1CA and YES-1024-1CA are shipped with a cordset factory-installed. This cordset contains a plug for use with a 50A household range receptacle. The blade configuration on the plug included on these heaters is represented in fig. 1 below (4-wire circuit).

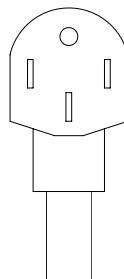


fig. 1

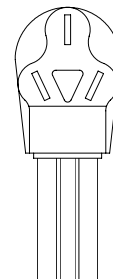


fig. 2

⚠ **WARNING**

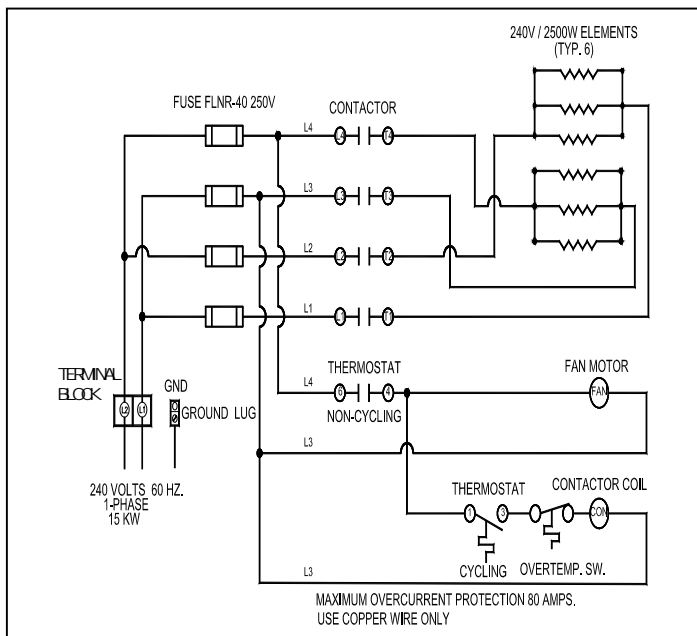
ELECTRICAL SHOCK HAZARD

- **Serious injury or death may occur.**
- **Plug heater into a 4-wire circuit receptacle rated 50A.**
- **Any and all changes to branch circuits and receptacles MUST be done by a licensed electrician ONLY.**

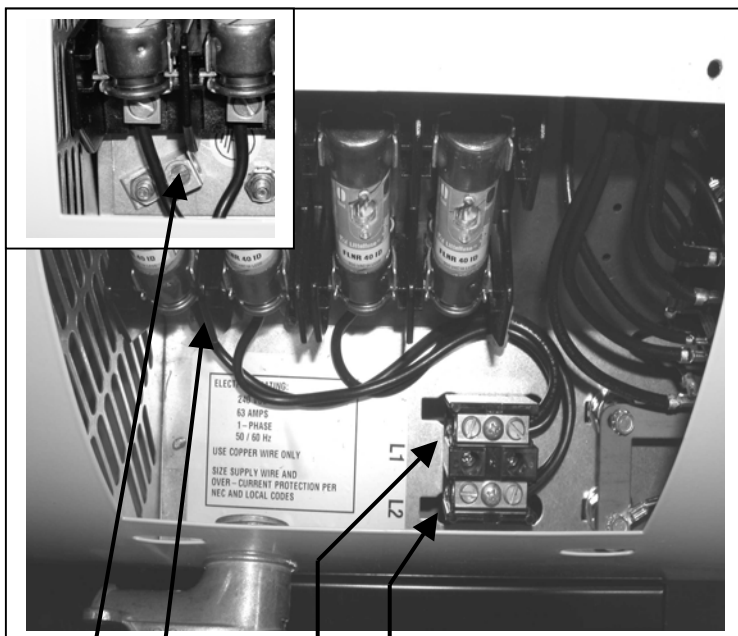
The range receptacle you choose to use may have a blade configuration compatible with the plug shown in fig. 2 (3-wire circuit). This is an older branch circuit design that does not include a separate equipment grounding conductor (green wire). The configuration in fig. 1 has been implemented on newer branch circuit installations for increased safety, and is now the required circuit configuration by the National Electric Code. Changing a 3-wire branch circuit and receptacle to 4-wire design may involve changes to your range and must only be done by a licensed electrician.

WIRING (continued)

FES-1524-1A YES-1524-1A



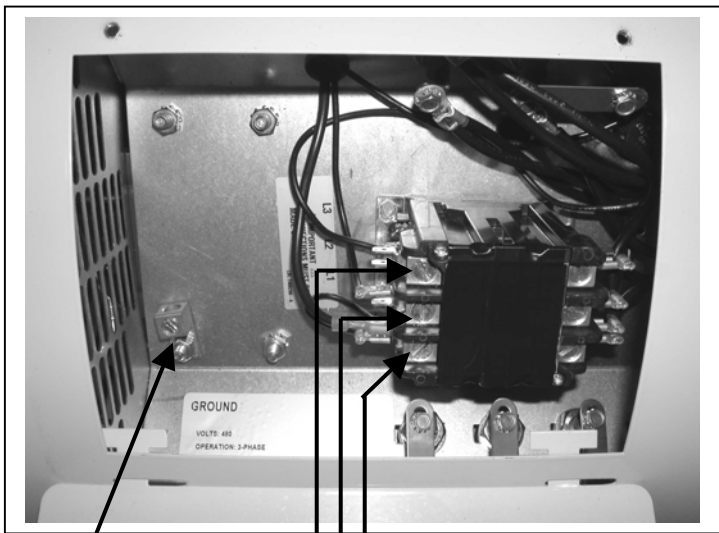
FES-1524-1A YES-1524-1A



Attach feeder cable or cable kit to heater as shown in photograph at right for the single-phase models indicated.

Ground lug is located directly below fuse as shown in upper left corner. Securely attach green wire to this lug.

Attach circuit conductors at these lugs. Refer to label shown for phase identification



3-Phase Models

Attach feeder cable or cable kit to heater as shown in the photograph at left for the following 3-phase models.

FES-1520-3A	YES-1520-3A
FES-1524-3E	YES-1524-3E
FES-1548-3E	YES-1548-3E
FES-1560-3A	YES-1560-3A
FES-3048-3A	YES-3048-3A
FES-3060-3A	YES-3060-3A

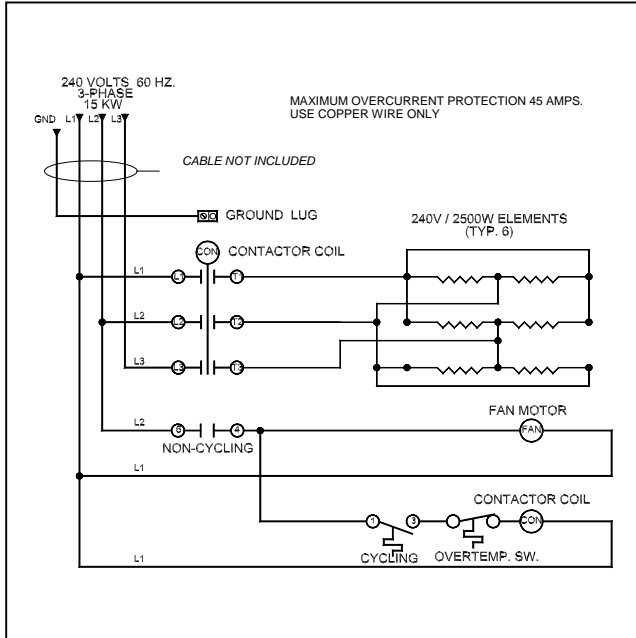
Ground Lug
Securely attach green wire to this lug.

Attach circuit conductors to the lugs on the contactor. Refer to label shown for phase identification.

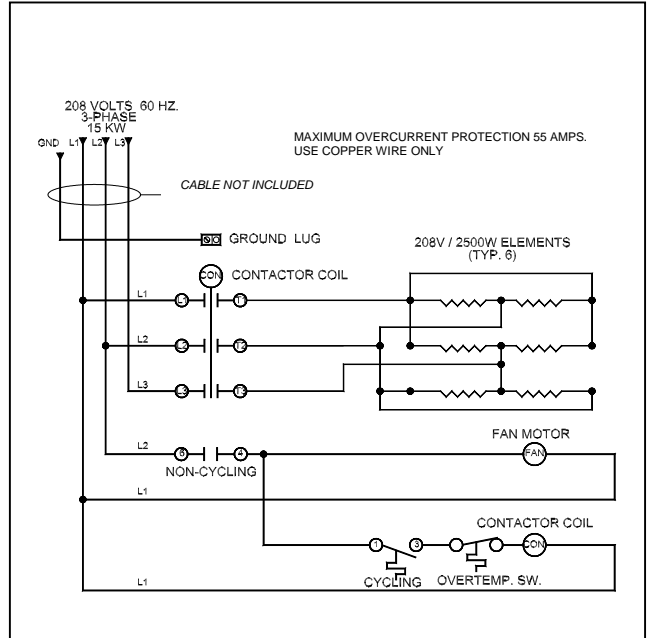
WIRING (continued)

FES & YES 3- PHASE WIRING DIAGRAMS

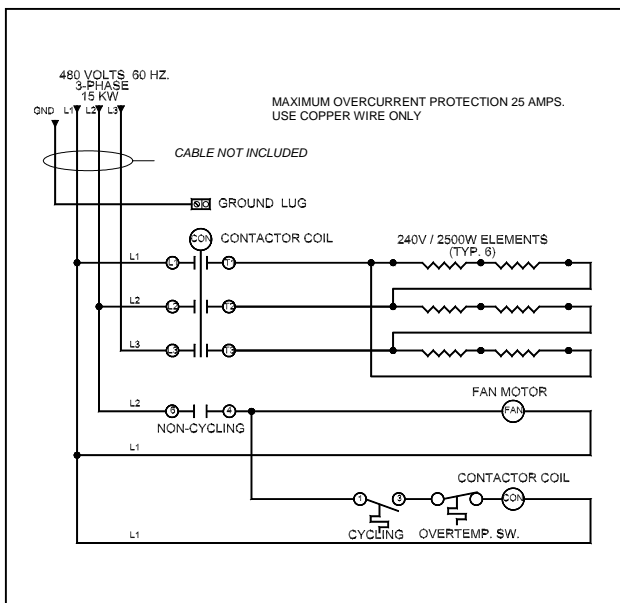
FES-1524-3E YES-1524-3E



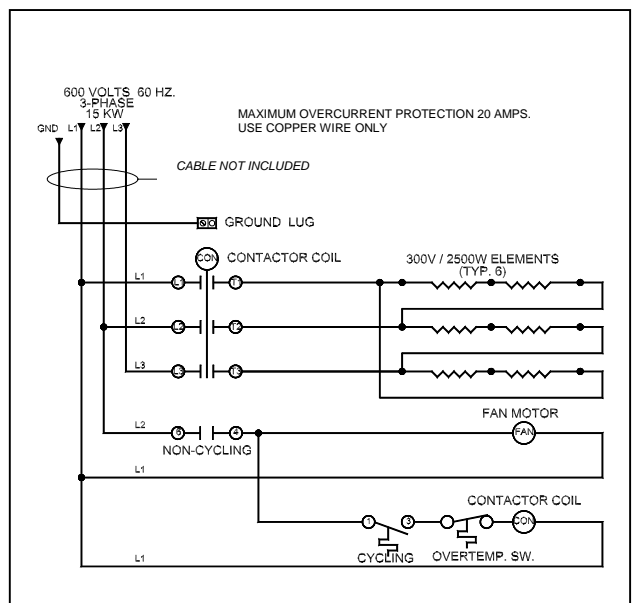
FES-1520-3A YES-1520-3A



FES-1548-3E YES-1548-3E



FES-1560-3A YES-1560-3A

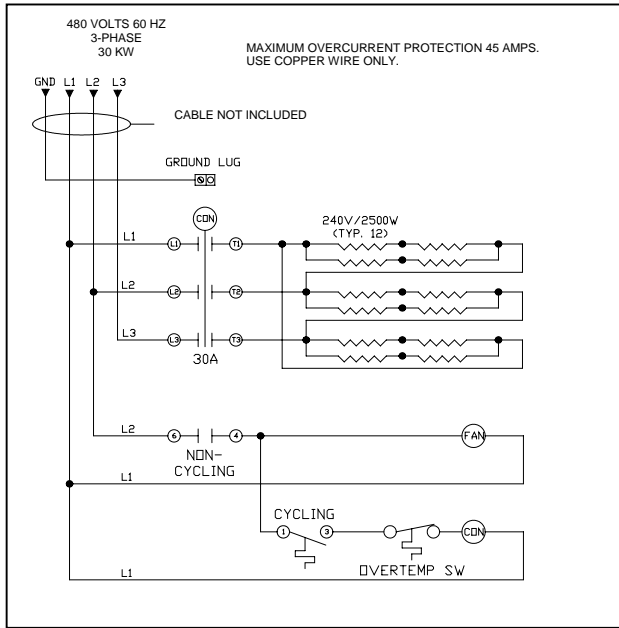


WIRING (continued)

FES & YES 3-PHASE WIRING DIAGRAMS

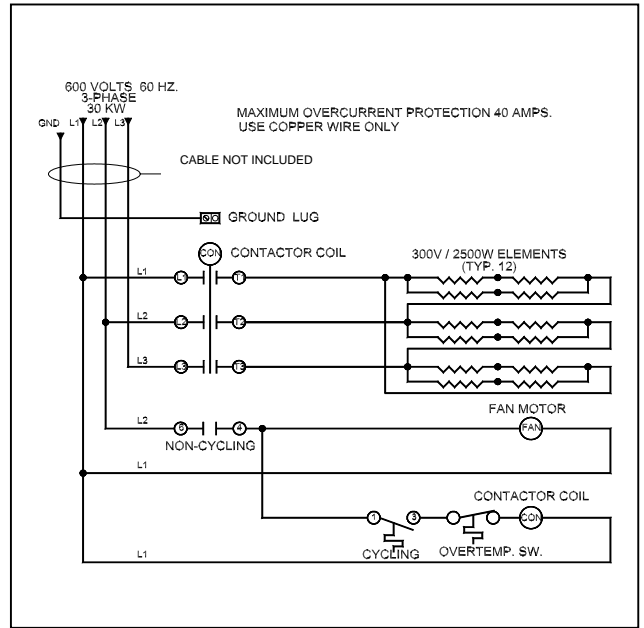
FES-3048-3A

YES-3048-3A



FES-3060-3A

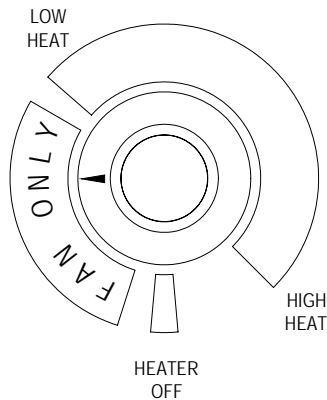
YES-3060-3A



OPERATING INSTRUCTIONS

Fostoria FES and YES series heaters are designed to circulate room air across its heating elements to gradually increase room temperature. The best performance results will be obtained when using these heaters in smaller, confined spaces with low ceilings.





Operation of these heaters is accomplished via the use of a multi-function thermostat (refer to diagram below).



You have the option to use the fan only, or the fan and heating elements together. Position the knob pointer in the “fan-only” area to circulate room air with no heating. Move the pointer into the “heat” area to energize the heating elements and set the thermostat. Maximum heating is obtained with knob turned fully clockwise. Both fan and elements are off when the knob is turned fully counterclockwise.

Always allow the fan to operate for a minimum of 3 minutes when you are done using the heater to purge heat from unit.

Note: ALL FES/YES models are equipped with an internal over temperature limit designed to protect your heater if a restricted airflow condition occurs. This limit device will completely shutdown the heating elements if the temperature limit is reached. The limit will automatically reset when the unit cools.

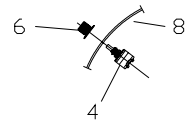
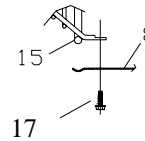
		WARNING
	FIRE HAZARD EXPLOSION HAZARD BURN HAZARD	
	<ul style="list-style-type: none">• Serious injury or death may occur.	
	<ul style="list-style-type: none">• Read and follow all safety information in box below.	
<ul style="list-style-type: none">• Do not use outdoors or where flammable gases or liquids are stored.• Do not use as a residential comfort heater.• Keep portable heater 3ft. minimum from all combustibile materials at all times.• Do not modify heater in any way.• Do not provide power to heater when unit is near standing water.• Only use handle to move heater.• Do not touch heater housing while in use.• Do not allow feeder cable to contact combustibile materials.• Always purge heat from unit after use. Operate at “fan only” setting for 3 minutes.		

FES REPLACEMENT PARTS LIST & EXPLODED VIEWS

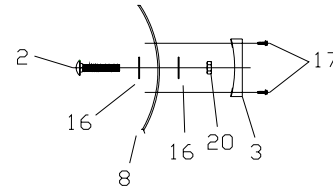
Ref No.	Description	1024-1CA	1520-3A	1524-3E	1548-3E	1560-3A	3048-3A	3060-3A
1	Motor	8482001 (1)	8482001 (1)	8482001 (1)	8482002 (1)	8482003 (1)	8482004 (1)	8482005 (1)
2	Bolt carriage ½-13 x 2-3/4	2470132 (2)	2470132 (2)	2470132 (2)	2470132 (2)	2470132 (2)	2470132 (2)	2470132 (2)
3	Rotating stop	8481223 (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	Washer Reducing (not shown)	N/A	N/A	N/A	2485400 (2)	2485400 (2)	N/A	N/A
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 ¼-20	3426000 (4)	3426000 (4)	3426000 (4)	3426000 (4)	3426000 (4)	3426000 (4)	3426000 (4)
14	Washer ¼	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 ½	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 ½-13	3460200 (2)	3460200 (2)	3460200 (2)	3460200 (2)	3460200 (2)	3460200 (2)	3460200 (2)
21	Screw ¼-20 x ¾	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)	2485300 (1)	2485300 (1)	7714122 (1)	7714122 (1)
25	Baffle – not shown	8483800 (1)	8483800 (1)	8483800 (1)	8483800 (1)	8483800 (1)	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

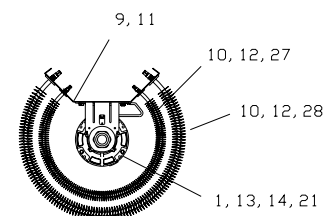
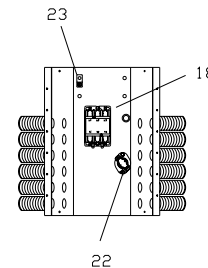
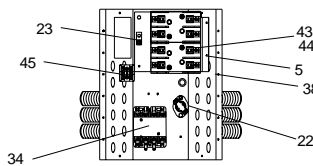
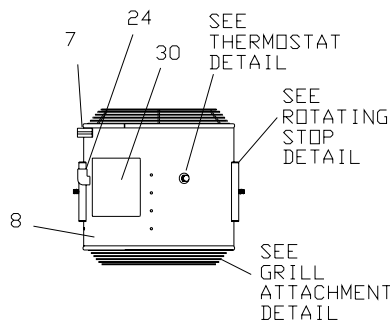
THERMOSTAT



ROTATING STOP

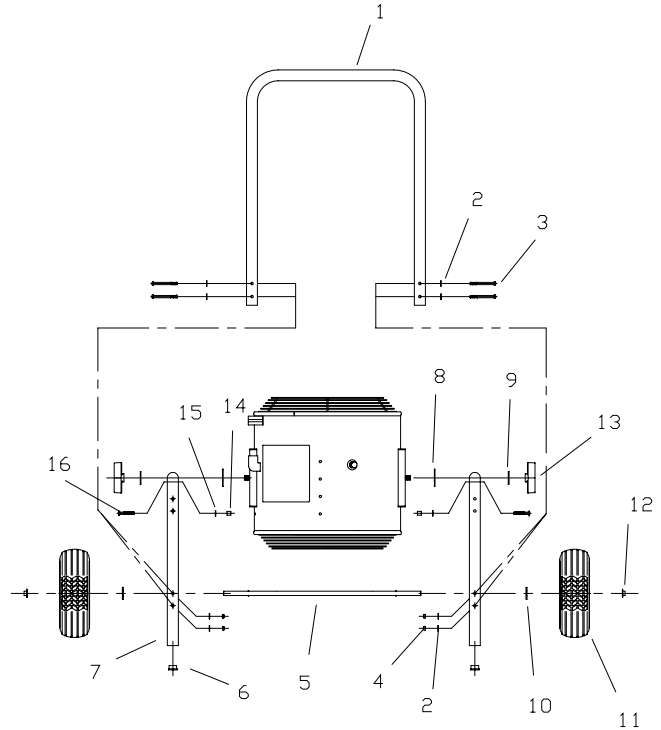


Ref No.	Description	1524-1A
1	Motor	8482001 (1)
2	Bolt carriage ½-13 x 2-3/4	2470132 (2)
3	Rotating stop	8481223 (2)
4	Thermostat	2470300 (1)
5	Washer reducing (not shown)	N/A
6	Knob thermostat	2470500 (1)
7	Strap	2470800 (1)
8	Shroud	8481110 (1)
9	Motor mount bracket	8480800 (1)
10	Screw 10-32x 5/16 SEMS	2470932 (12)
11	Mount motor end	8480700 (2)
12	Washer 9/16	3419500 (12)
13	Nut hex ¼-20	3426000 (4)
14	Washer ¼	3427900 (10)
15	Grill	8480621 (2)
16	Washer	2472032 (4)
17	Screw 8-18 x ½	3444456
18	Contact	8480406 (1)
19		
20	Nut ½-13	3460200 (2)
21	Screw ¼-20 x ¾	3494156 (4)
22	Over temperature switch	3183900 (1)
23	Ground Lug	41254001 (1)
24	Connector	7714122 (1)
25	Baffle-not shown	8483800 (1)
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)



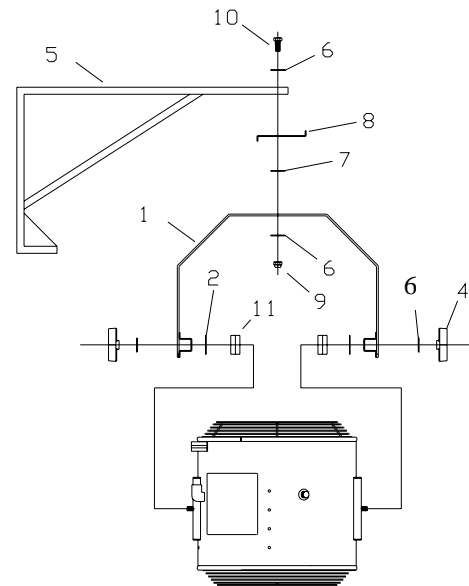
FES REPLACEMENT PARTS LIST & EXPLODED VIEWS

Ref No.	Description	Part No.
1	Handle	8480021
2	Washer flat ¼	3442532
3	Screw ¼-20 x 2-3/4	2470032
4	Nut stop ¼-20	3440132
5	Axle	8481332
6	Cap plug	3409200
7	Leg	8480121
8	Washer rubber	2480200
9	Spacer	8480500
10	Washer flat ½	3460156
11	Wheel	8492500
12	Push nut	8045700
13	Bar Knob	2470200
14	Spacer	2471932
15	Washer lock ¼	3427900
16	Screw ¼-20 x 1-3/4	2471832



YES REPLACEMENT PARTS LIST & EXPLODED VIEWS

Ref No.	Description	Part No.	Qty.
1	Hanger	8484023	1
2	Washer rubber	2480200	2
3			
4	Bar knob	2470200	2
5	Mounting bracket	57074002	1
6	Washer fender	3472232	4
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.**

MAINTENANCE

Other than periodic cleaning of the exterior, no maintenance is required for these heaters.

- Do not hose these units down.
- Remove dust and dirt from inside heater with compressed air.
- Do not operate these heaters without the grills or the wiring compartment cover in place.
- Replace or repair feeder cable or cord set if visible damage is observed.
- Motor bearings are permanently lubricated.



⚠ WARNING

ELECTRICAL SHOCK HAZARD

- **Serious injury or death may occur.**
- **Disconnect from electrical supply before servicing or cleaning these heaters.**
- **Do not operate without grills and access covers fastened in place.**

LIMITED WARRANTY

FOSTORIA INDUSTRIES, INC. – 1200 North Main Street - Fostoria, Ohio 44830-1911 - (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.

FOSTORIA INDUSTRIES, INC.

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