



## Converting Ruud Electric Heavy Duty E & ES Models With New Conversion Kits – Quick Reference

### Step 1: Determine the Requirements for the Specific Application

- A. Determine the Gallon Capacity of your water heater (*Example: E50*)
- B. Determine the Voltage Rating. Check the rating label for “208”, “240”, “277” or “480” volts.
- C. Determine Element Wattage. (*Example: E50 208 Volt*)
  - a. Zone 1 – 6kW – 18kW
  - b. Zone 2 – 18kW – 36kW
  - c. Zone 3 – 36kW – 54kW
- D. Determine how many Zones (*Convert only to same zone.*)
  - a. Zone 1 has 3 Elements (Lower 3 Elements)
  - b. Zone 2 has 6 Elements (Lower 6 Elements)
  - c. Zone 3 has 9 Elements (Lower Elements Zone 1, Elements Zone 2, + Upper 3 Elements)

### You Now Have the Configuration of Your Heavy Duty E & ES Water Heater:

Example: E50 208 24KW (*Zone 2 Heater*)

### Step 2: Determine Your Desired Heavy Duty E & ES Water Heater “New Configuration”

► *You can only convert to the same zone*

#### Specify:

- A. New Voltage? (*Example: 240 Volt*)
- B. New Element Wattage? (*Example: 36kW*)

► **You Should Have the Same Number of Elements in the Kit Ordered as in the Water Heater**

### Step 3: Select the Appropriate Conversion Kit Based on Allowable Conversions Shown in Charts

(*Example: SP20533*)



**Ruud  
Heavy Duty**

**Ruud  
PowerPack**

#### NEW UL Approved Electric Conversion Kits

- Provides an easy way to convert standard models to different wattages, volt or phase depending on installation requirements
- Kits are designed for Heavy Duty models in all gallon capacities
- All parts needed for the electric conversion are included with Ruud electric conversion kits
- Ruud electric conversion kits provide convenience for contractors, which saves time and money

**NOTICE: FOR CONVERTED WATER HEATERS, THE MODEL NUMBER WILL NOT DICTATE THE CONFIGURATION OF THE UNIT. PLEASE REFER TO THE UPDATED RATING LABEL OVERLAY FOR THE CONFIGURATION OF THE CONVERTED WATER HEATER. PLEASE INCLUDE THE UPDATED RATING AND THE SPXXXXX CONVERSION KIT NUMBER LISTED ON THE CAUTION LABEL FOR ANY COMMUNICATION REGARDING THIS WATER HEATER.**

### HEAVY DUTY SERIES E(S)50, E(S)85 & E(S)120 CONFIGURATIONS

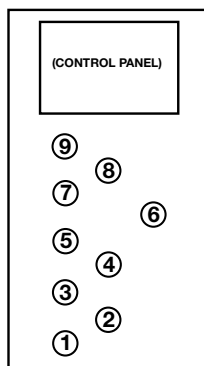
ZONE	INPUT KW	NO. OF ELEMENTS	ELEMENT WATTAGE	AVAILABLE VOLTAGE
1	6	3	2000	208, 240, 277, 480
	9		3000	208, 240, 277, 480
	12		4000	208, 240, 277, 480
	15		5000	208, 240, 277, 480
	18		6000	240, 277, 480
2	18	6	3000	208, 240, 277, 480
	24		4000	208, 240, 277, 480
	27		4500	208, 240, 277, 480
	30		5000	208, 240, 277, 480
	36		6000	240, 277, 480
3	36	9	4000	208, 240, 277, 480
	45		5000	208, 240, 277, 480
	54		6000	208, 240, 277, 480

**NOTICE: When converting a ZONE 2 heater from 18kW, 24kW and 27kW to 30kW, the T&P relief valve may also need to be changed. Ensure the T&P relief valve is rated for 200,000 BTU when making these types of conversions.**

**NOTES:**

- 1. In Zone 1 – Use Element Locations 1-3.  
In Zone 2 – Use Element Locations 1-6.  
In Zone 3 – Use Element Locations 1-9.

- 2. **CONVERT WATER HEATER ONLY** → **WITHIN THE SAME ZONE.** Units from different zones may have different components, or component rating.



**ELEMENT LOCATIONS**

## AVAILABLE KIT FOR THE E(S)50, E(S)85 & E(S)120

ZONE	AVAILABLE VOLTAGE	INPUT KW	NO. OF ELEMENTS	ELEMENT WATTAGE	KIT NUMBER
1	208	6	3	2000	SP20511
		9		3000	SP20512
		12		4000	SP20513
		15		5000	SP20514
2	208	18	6	3000	SP20516
		24		4000	SP20517
		27		4500	SP20518
		30		5000	SP20519
3	208	36	9	4000	SP20521
		45		5000	SP20522
		54		6000	SP20523

ZONE	AVAILABLE VOLTAGE	INPUT KW	NO. OF ELEMENTS	ELEMENT WATTAGE	KIT NUMBER	
1	240	6	3	2000	SP20524	
		9		3000	SP20525	
		12		4000	SP20526	
		15		5000	SP20527	
		18		6000	SP20528	
		18		6	3000	SP20529
		24			4000	SP20530
		27			4500	SP20531
30	5000	SP20532				
		36		6000	SP20533	
		36		9	4000	SP20534
		45			5000	SP20535
54	6000	SP20669				

**⚠ CAUTION: THE 277 VOLTAGES CAN ONLY BE CONVERTED USING SINGLE PHASE MODELS.**

ZONE	AVAILABLE VOLTAGE	INPUT KW	NO. OF ELEMENTS	ELEMENT WATTAGE	KIT NUMBER
1	277	6	3	2000	SP20536
		9		3000	SP20537
		12		4000	SP20538
		15		5000	SP20539
		18		6000	SP20540
2	277	18	6	3000	SP20541
		24		4000	SP20542
		27		4500	SP20543
		30		5000	SP20544
		36		6000	SP20545
3	277	36	9	4000	SP20546
		45		5000	SP20547
		54		6000	SP20548

ZONE	AVAILABLE VOLTAGE	INPUT KW	NO. OF ELEMENTS	ELEMENT WATTAGE	KIT NUMBER
1	480	6	3	2000	SP20549
		9		3000	SP20550
		12		4000	SP20551
		15		5000	SP20552
		18		6000	SP20553
2	480	18	6	3000	SP20554
		24		4000	SP20555
		27		4500	SP20556
		30		5000	SP20557
		36		6000	SP20558
3	480	36	9	4000	SP20559
		45		5000	SP20560
		54		6000	SP20561

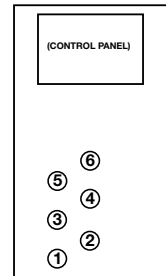
## POWERPACK SERIES E12, E20, E30 & E40 CONFIGURATIONS

ZONE	INPUT KW	NO. OF ELEMENTS	ELEMENT WATTAGE	AVAILABLE MODELS	AVAILABLE VOLTAGE
1	6	3	2000	E12A, E20A, E30A, E40A	208, 240, 277, 480
	9		3000	E12A, E20A, E30A, E40A	208, 240, 277, 480
	12		4000	E20A, E30A, E40A	208, 240, 277, 480
	15		5000	E20A, E30A, E40A	208, 240, 277, 480
	18		6000	E20A	208, 240, 277, 480
2	18	6	3000	E30A, E40A	208, 240, 277, 480
	24		4000	E30A, E40A	208, 240, 277, 480
	27		4500	E30A, E40A	208, 240, 277, 480
	30		5000	E30A, E40A	208, 240, 277, 480
	36		6000	E30A, E40A	208, 240, 277, 480

**NOTICE:** When converting a ZONE 2 heater from 18kW, 24kW and 27kW to 30kW, the T&P relief valve may also need to be changed. Ensure the T&P relief valve is rated for 200,000 BTU when making these types of conversions.

**NOTES:**

- In Zone 1 – Use Element Locations 1-3.  
In Zone 2 – Use Element Locations 1-6.



- CONVERT WATER HEATER ONLY WITHIN THE SAME ZONE.** Units from different zones may have different components, or component rating.

**ELEMENT LOCATIONS**

## AVAILABLE KIT FOR THE E12, E20, E30 & E40

**CAUTION: THE 277 VOLTAGES CAN ONLY BE CONVERTED USING SINGLE PHASE MODELS.**

ZONE	AVAILABLE VOLTAGE	INPUT KW	NO. OF ELEMENTS	ELEMENT WATTAGE	KIT NUMBER
1	208	6	3	2000	SP20563
		9		3000	SP20564
		12		4000	SP20565
		15		5000	SP20566
		18		6000	SP20567
2	208	18	6	3000	SP20568
		24		4000	SP20569
		27		4500	SP20570
		30		5000	SP20571
1	240	6	3	2000	SP20572
		9		3000	SP20573
		12		4000	SP20574
		15		5000	SP20575
		18		6000	SP20576
2	240	18	6	3000	SP20577
		24		4000	SP20578
		27		4500	SP20579
		30		5000	SP20580

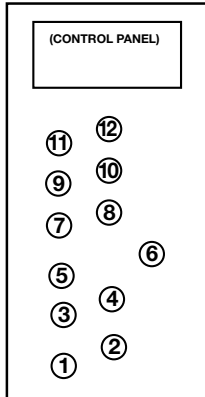
ZONE	AVAILABLE VOLTAGE	INPUT KW	NO. OF ELEMENTS	ELEMENT WATTAGE	KIT NUMBER
1	277	6	3	2000	SP20581
		9		3000	SP20582
		12		4000	SP20583
		15		5000	SP20584
		18		6000	SP20585
2	277	18	6	3000	SP20671
		24		4000	SP20672
		27		4500	SP20673
		30		5000	SP20674
1	480	6	3	2000	SP20675
		9		3000	SP20676
		12		4000	SP20677
		15		5000	SP20678
		18		6000	SP20679
2	480	18	6	3000	SP20680
		24		4000	SP20681
		27		4500	SP20682
		30		5000	SP20683

## HEAVY DUTY SERIES E175 CONFIGURATIONS

ZONE	INPUT KW	NO. OF ELEMENTS	ELEMENT WATTAGE	AVAILABLE VOLTAGE
1	6	3	2000	208, 240, 277, 480
	9		3000	208, 240, 277, 480
	12		4000	208, 240, 277, 480
	15		5000	208, 240, 277, 480
	18		6000	240, 277, 480
2	18	6	3000	208, 240, 277, 480
	24		4000	208, 240, 277, 480
	27		4500	208, 240, 277, 480
	30		5000	208, 240, 277, 480
	36		6000	240, 277, 480
3	36	9	4000	208, 240, 277, 480
	45		5000	208, 240, 277, 480
	54		6000	208, 240, 277, 480
4	60	12	5000	208, 240, 277, 480
	72		6000	208, 240, 277, 480
	108		9000	480

**NOTICE:** When converting a ZONE 2 heater from 18kW, 24kW and 27kW to 30kW, the T&P relief valve may also need to be changed. Ensure the T&P relief valve is rated for 200,000 BTU when making these types of conversions.

- NOTES:**
- In Zone 1 – Use Element Locations 1-3.  
In Zone 2 – Use Element Locations 1-6.  
In Zone 3 – Use Element Locations 1-9.  
In Zone 4 – Use Element Locations 1-12.
  - CONVERT WATER HEATER ONLY** → **WITHIN THE SAME ZONE.** Units from different zones may have different components, or component rating.



**ELEMENT LOCATIONS**

## AVAILABLE KIT FOR THE E175

ZONE	AVAILABLE VOLTAGE	INPUT KW	NO. OF ELEMENTS	ELEMENT WATTAGE	KIT NUMBER
1	208	6	3	2000	SP20609
		9		3000	SP20610
		12		4000	SP20611
		15		5000	SP20612
2	208	18	6	3000	SP20614
		24		4000	SP20615
		27		4500	SP20616
		30		5000	SP20617
3	208	36	9	4000	SP20619
		45		5000	SP20620
		54		6000	SP20621
4	208	60	12	5000	SP20622
		72		6000	SP20623

ZONE	AVAILABLE VOLTAGE	INPUT KW	NO. OF ELEMENTS	ELEMENT WATTAGE	KIT NUMBER
1	240	6	3	2000	SP20624
		9		3000	SP20625
		12		4000	SP20626
		15		5000	SP20627
		18		6000	SP20628
2	240	18	6	3000	SP20670
		24		4000	SP20629
		27		4500	SP20630
		30		5000	SP20631
		36		6000	SP20632
3	240	36	9	4000	SP20633
		45		5000	SP20634
		54		6000	SP20635
4	240	60	12	5000	SP20636
		72		6000	SP20637



## AVAILABLE KIT FOR THE E175 CONTINUED

**⚠ CAUTION: THE 277 VOLTAGES CAN ONLY BE CONVERTED USING SINGLE PHASE MODELS.**

ZONE	AVAILABLE VOLTAGE	INPUT KW	NO. OF ELEMENTS	ELEMENT WATTAGE	KIT NUMBER
1	277	6	3	2000	SP20638
		9		3000	SP20639
		12		4000	SP20640
		15		5000	SP20641
		18		6000	SP20642
2	277	18	6	3000	SP20643
		24		4000	SP20644
		27		4500	SP20645
		30		5000	SP20646
		36		6000	SP20647
3	277	36	9	4000	SP20648
		45		5000	SP20649
		54		6000	SP20650
4	277	60	12	5000	SP20651
		72		6000	SP20652

ZONE	AVAILABLE VOLTAGE	INPUT KW	NO. OF ELEMENTS	ELEMENT WATTAGE	KIT NUMBER
1	480	6	3	2000	SP20653
		9		3000	SP20654
		12		4000	SP20655
		15		5000	SP20656
		18		6000	SP20657
2	480	18	6	3000	SP20658
		24		4000	SP20659
		27		4500	SP20660
		30		5000	SP20661
		36		6000	SP20662
3	480	36	9	4000	SP20663
		45		5000	SP20664
		54		6000	SP20665
4	480	60	12	5000	SP20666
		72		6000	SP20667
		108		9000	SP20668

*In keeping with its policy of continuous progress and product improvement, Ruud reserves the right to make changes without notice.*