

# INSTALLATION, OPERATING AND SERVICE INSTRUCTIONS FOR

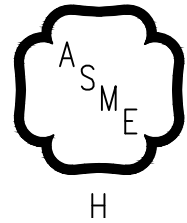
## MPO-IQ™ 3-PASS OIL BOILER



**Intertek**  
9700609



**Intertek**  
9700609



As an ENERGY STAR® Partner, U.S. Boiler Company has determined that the MPO-IQ™ boiler meets the ENERGY STAR® guidelines for energy efficiency established by the United States Environmental Protection Agency (EPA).

For service or repairs to boiler, call your heating contractor. When seeking information on boiler, provide Boiler Model Number and Serial Number as shown on Rating Label.

Boiler Model Number MPO - IQ	Boiler Serial Number	Installation Date
Heating Contractor		Phone Number
Address		



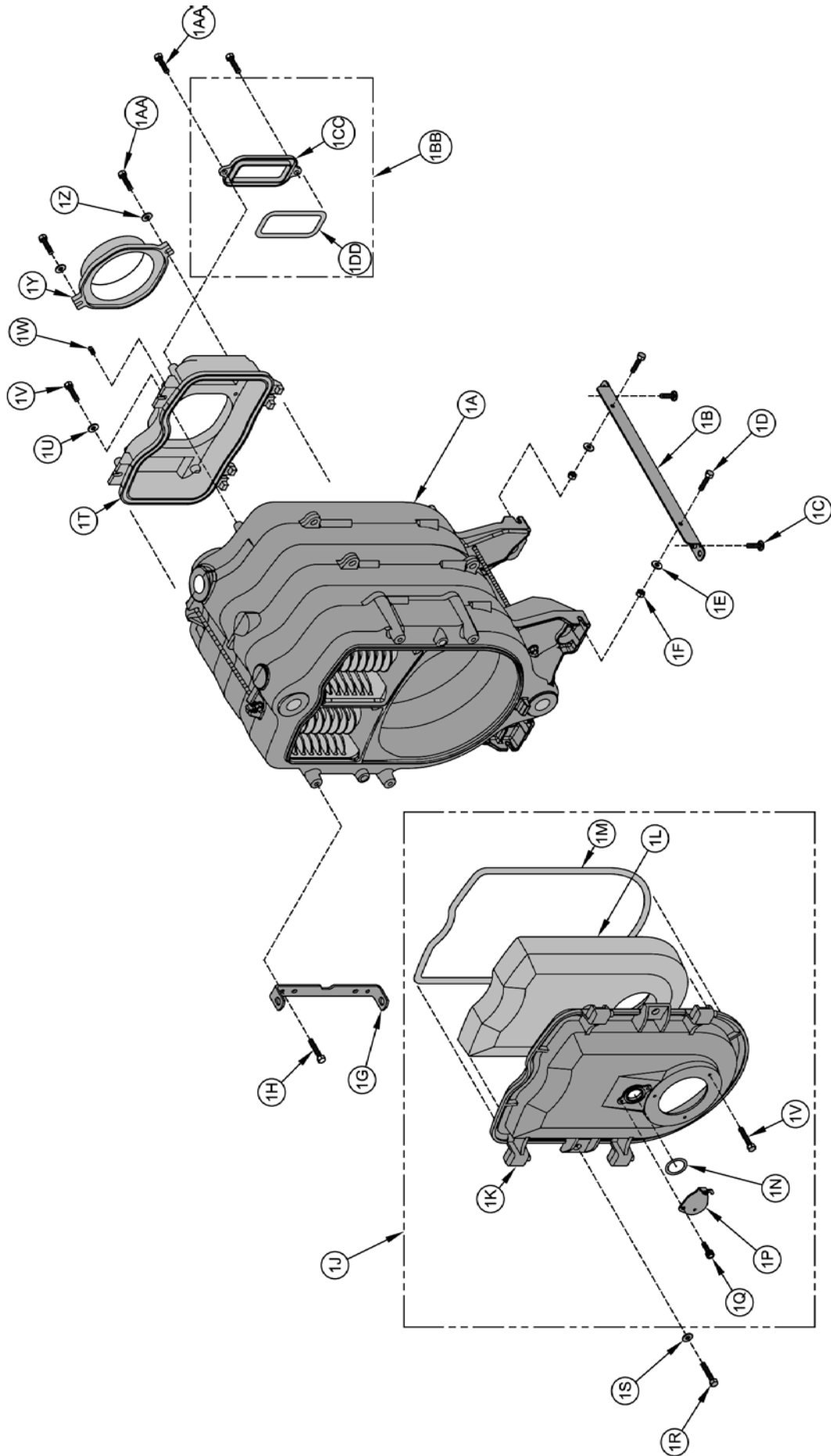
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## **XIV. REPAIR PARTS**

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All MPO-IQ™ Boiler Repair Parts may be obtained through your local U.S. Boiler Company Wholesale distributor. Should you require assistance in locating a U.S. Boiler Company Distributor in your area, or have questions regarding the availability of U.S. Boiler Company products or repair parts, please contact U.S. Boiler Company Customer Service at (717) 481-8400 or Fax (717) 481-8408.

# XIV. REPAIR PARTS (continued)

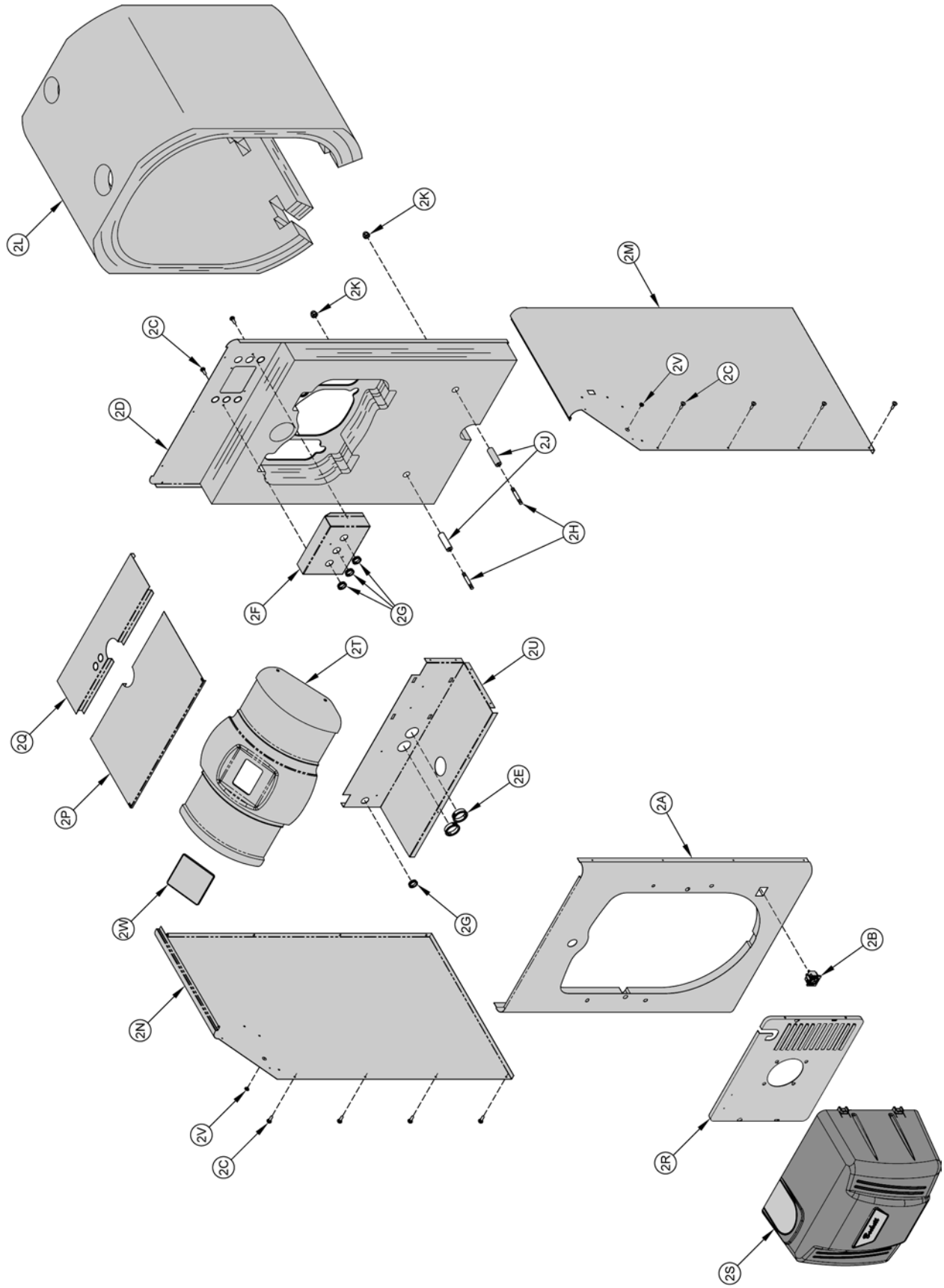


Bare Boiler Assembly

## XIV. REPAIR PARTS (continued)

Item No.	Description	Part No.	MPO-IQ84	MPO-IQ115	MPO-IQ147	MPO-IQ189	MPO-IQ231
<b>1. BARE BOILER ASSEMBLY</b>							
1A	Cast Iron Block Assembly - 2 Section	103071-02	1	1	---	---	---
	Cast Iron Block Assembly - 3 Section	103071-03	---	---	1	---	---
	Cast Iron Block Assembly - 4 Section	103071-04	---	---	---	1	---
	Cast Iron Block Assembly - 5 Section	103071-05	---	---	---	---	1
1B	Spanner Bar w/Threaded Inserts, 1-1/4" x 1-1/2" x 14-3/8" Lg.	100012-01	2	2	---	---	---
	Spanner Bar w/Threaded Inserts, 1-1/4" x 1-1/2" x 20-3/8" Lg.	100012-02	---	---	2	---	---
	Spanner Bar w/Threaded Inserts, 1-1/4" x 1-1/2" x 26-3/8" Lg.	100012-03	---	---	---	2	---
	Spanner Bar w/Threaded Inserts, 1-1/4" x 1-1/2" x 32-3/8" Lg.	100012-04	---	---	---	---	2
1C	Carriage Bolt, 3/8"-16 x 1-1/4" Lg., Plated	100215-01	4	4	4	4	4
1D	Cap Screw, 5/16"-18 x 7/8" Lg., Plated	80861371	4	4	4	4	4
1E	Flat Washer, 5/16" USS, Plated	80860611	4	4	4	4	4
1F	Hex Nut, 5/16-18, Serrated Flange, Plated	80860443	4	4	4	4	4
1G	Hinge Bracket	100014-01	1	1	1	1	1
1H	5/16"-18 x 3/4" Lg. Cap Screw, Plated	80861340	2	2	2	2	2
1J	Cast Iron Burner Door Assembly	102417-01	1	1	1	1	---
		102417-02	---	---	---	---	1
1K	Cast Iron Burner Swing Door (Only)	102421-01	1	1	1	1	1
1L	Burner Swing Door Insulation (Less Pockets)	100039-01	1	1	1	1	---
	Burner Swing Door Insulation (With Pockets)	100039-02	---	---	---	---	1
1M	1/2" Dia. Rope Gasket - Burner Swing Door	102022-01	1	1	1	1	1
1N	1/8" Dia. Rope Gasket - Observation Port	100096-01	1	1	1	1	1
1P	Observation Port Cover	100015-01	1	1	1	1	1
1Q	5/16"-18 x 5/8" Lg. Socket Head Cap Screw, Plated	100050-01	2	2	2	2	2
1R	3/8"-16 x 1-3/4" Lg. Tap Bolt, Plated	100102-01	2	2	2	2	2
1S	3/8" Flat Washer, USS, Plated	80860618	2	2	2	2	2
1T	Smokebox	100021-01	1	1	1	1	1
1U	5/16" Flat Washer, USS, Plain	80860601	4	4	4	4	4
1V	5/16"-18 x 7/8" Lg. Cap Screw, Plain	80861340	7	7	7	7	7
1W	1/4" NPT Pipe Plug, Square Head, Brass	806603542	1	1	1	1	1
1Y	Smokebox Collar	5" Dia. 100092-01	1	1	---	---	---
		6" Dia. 100093-01	---	---	1	1	---
		7" Dia. 100094-01	---	---	---	---	1
1Z	5/16" Flat Washer, USS, Plated	80860611	2	2	2	2	2
1AA	5/16"-18 x 7/8" Lg. Cap Screw, Plated	80861371	6	6	6	6	6
1BB	Clean-Out Cover Assembly	100078-01	1	1	1	1	1
1CC	Cast Iron Clean-Cut Cover (only)	100104-01	2	2	2	2	2
1DD	1/2" Dia. Rope Gasket - Clean-Cut Cover	100095-01	2	2	2	2	2

# XIV. REPAIR PARTS (continued)

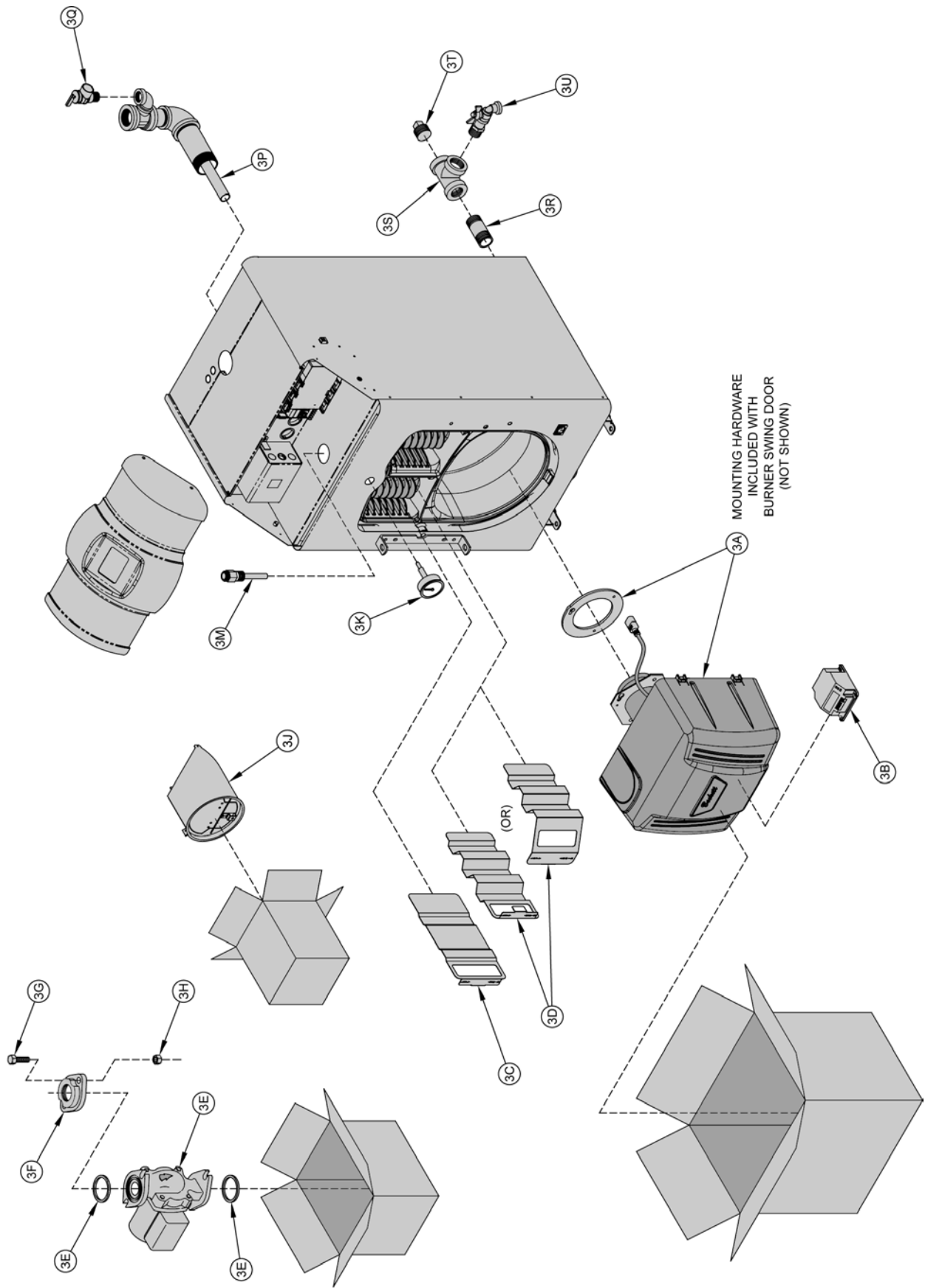


**Jacket Assembly**

## XIV. REPAIR PARTS (continued)

Item No.	Description	Part No.	MPO-IQ84	MPO-IQ115	MPO-IQ147	MPO-IQ189	MPO-IQ231
<b>2. JACKET ASSEMBLY</b>							
2A	Jacket Front Panel Assembly w/Insulation	103053-01	1	1	1	1	1
2B	Power Outlet Receptacle, Heyco #0937	8136522	1	1	1	1	1
2C	#8 x 1/2" Sheet Metal Screw, Black Oxide	80860061	33	33	33	33	33
2D	Jacket Rear Panel Assembly w/Insulation	103054-01	1	1	1	1	1
2E	Snap Bushing, Heyco #2240	102338-01	2	2	2	2	2
2F	Internal Junction Box	102550-01	1	1	1	1	1
2G	Snap Bushing, Heyco #2126	102285-01	4	4	4	4	4
2H	5/16" -18 x 3" Lg. Tap End Stud, Plain	100046-01	2	2	2	2	2
2J	5/8" O.D. x 2-5/32" Lg. Jacket Spacer	100035-01	2	2	2	2	2
2K	5/16" -18 Acorn Nut, Plated	100047-01	2	2	2	2	2
2L	3" Thick Fiberglass Insulation Wrapper For:						
	2 Section Cast Iron, Block Assembly	100016-01	1	1	---	---	---
	3 Section Cast Iron, Block Assembly	100016-02	---	---	1	---	---
	4 Section Cast Iron, Block Assembly	100016-03	---	---	---	1	---
	5 Section Cast Iron, Block Assembly	100016-04	---	---	---	---	1
2M	Jacket Right Side Panel Assembly (No Insulation Required)						
	2 Section Boiler	103049-02	1	1	---	---	---
	3 Section Boiler	103049-03	---	---	1	---	---
	4 Section Boiler	103049-04	---	---	---	1	---
	5 Section Boiler	103049-05	---	---	---	---	1
2N	Jacket Left Side Panel Assembly (No Insulation Required)						
	2 Section Boiler	103048-02	1	1	---	---	---
	3 Section Boiler	103048-03	---	---	1	---	---
	4 Section Boiler	103048-04	---	---	---	1	---
	5 Section Boiler	103048-05	---	---	---	---	1
2P	Jacket Top Panel Assembly (No Insulation Required)						
	2 Section Boiler	103050-02	1	1	---	---	---
	3 Section Boiler	103050-03	---	---	1	---	---
	4 Section Boiler	103050-04	---	---	---	1	---
	5 Section Boiler	103050-05	---	---	---	---	1
2Q	Jacket Top Rear Panel Assembly (No Insulation Required)	103051-01	1	1	1	1	1
2R	Beckett Burner Plastic Enclosure Backer Plate	102233-01	1	1	1	1	1
2S	Beckett Burner Plastic Enclosure Cover	102232-01	1	1	1	1	1
2T	Jacket Poly Front Cover	102600-06	1	1	1	1	1
2U	Control Panel	103052-01	1	1	1	1	1
2V	Snap Bushing, Heyco #2043	8136048	2	2	2	2	2
2W	MPO-IQ Logo Plate	102502-04	1	1	1	1	1

# XIV. REPAIR PARTS (continued)



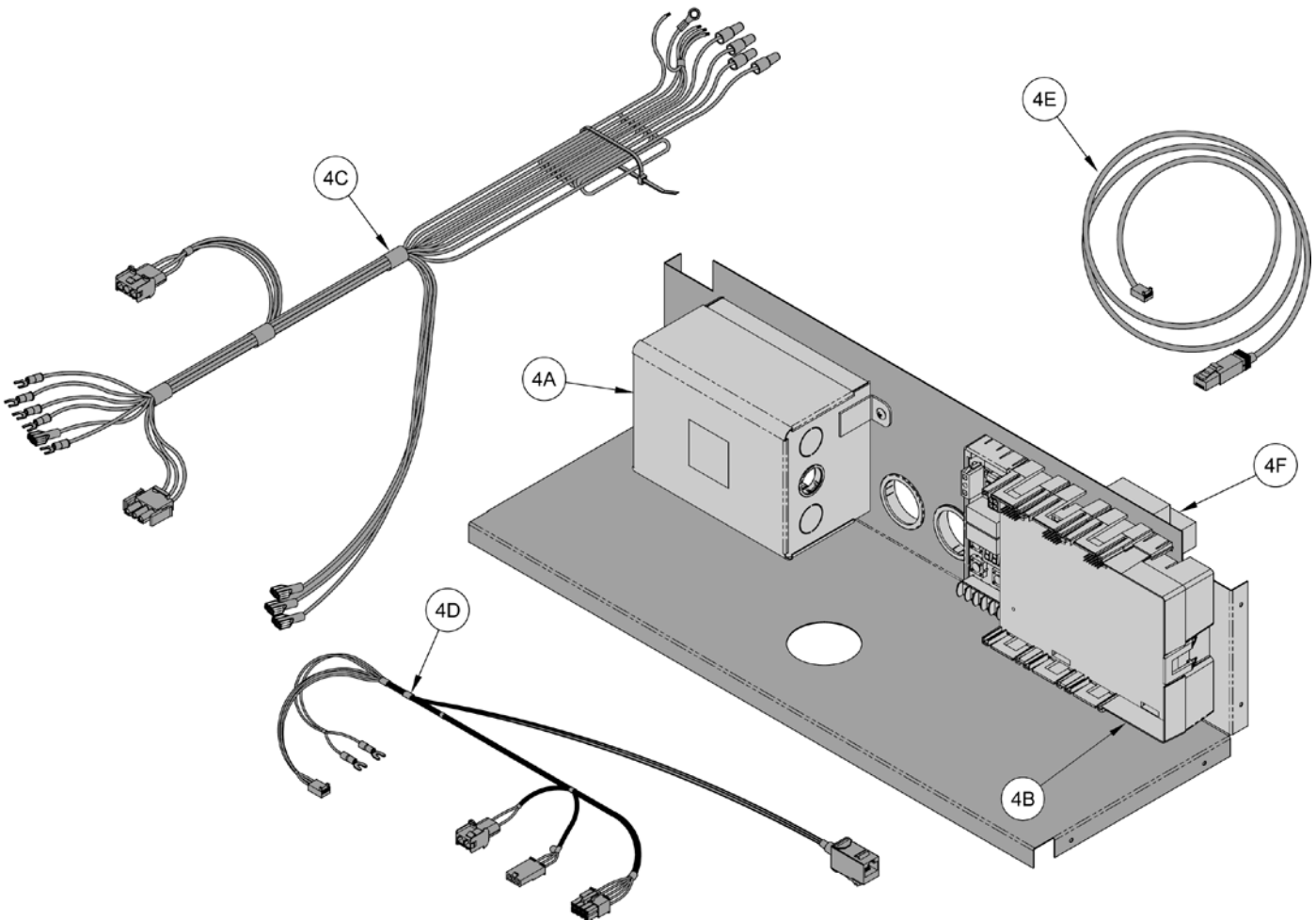
**MPO-IQ84 Thru MPO-IQ231 Water Boilers - Trim and Controls**

## XIV. REPAIR PARTS (continued)

Item No.	Description	Part No.	MPO-IQ84	MPO-IQ115	MPO-IQ147	MPO-IQ189	MPO-IQ231	
<b>3. MPO-IQ84 Thru MPO-IQ231 WATER BOILERS - TRIM AND CONTROLS</b>								
3A	<b>Beckett AFG Oil Burner w/Gasket for: Natural Draft</b>							
	MPO-IQ84 Spec No. BCB9502	104506-02	1	---	---	---	---	
	MPO-IQ115 Spec No. BCB9503	104507-02	---	1	---	---	---	
	MPO-IQ147 Spec No. BCB9504	104508-03	---	---	1	---	---	
	MPO-IQ189 Spec No. BCB9505	104509-04	---	---	---	1	---	
	MPO-IQ231 Spec No. BCB9506	104510-05	---	---	---	---	1	
	<b>Beckett NX Oil burner w/Gasket for: Direct Vent</b>							
	Spec No. BCB9403	103896-03	---	---	1	---	---	
	Spec No. BCB9404	103897-04	---	---	---	1	---	
	Spec No. BCB9405	103898-05	---	---	---	---	1	
	<b>Riello 40 Oil Burner w/Gasket for: Natural Draft</b>							
	MPO-IQ84 Spec No. C8511151	103143-01	1	---	---	---	---	
	MPO-IQ115 Spec No. C8511170	103143-02	---	1	---	---	---	
	MPO-IQ147 Spec No. C8512478	100831-01	---	---	1	---	---	
	MPO-IQ189 Spec No. C8512487	101762-01	---	---	---	1	---	
	MPO-IQ231 Spec No. C8512488	101763-01	---	---	---	---	1	
	<b>Carlin EZ Oil Burner w/Gasket for: Natural Draft</b>							
	MPO-IQ84 Spec No. 99888M8	102276-01	1	---	---	---	---	
	MPO-IQ115 Spec No. 9988811M11	102276-02	---	1	---	---	---	
	MPO-IQ147 Spec No. 9985811J14	102276-03	---	---	1	---	---	
	MPO-IQ189 Spec No. 9985811J18	102276-04	---	---	---	1	---	
	MPO-IQ231 Spec No. 9985811J23	102276-05	---	---	---	---	1	
	(Note: See Pages 78 thru 81 for Beckett Burner Parts Breakdown)							
	3B	Oil Primary Control, Honeywell R7284P1080 (Universal)	103880-01	1	1	1	1	1
	3C	Stainless Steel Third Pass Flueway Baffle	100081-01	2	2	---	---	--
	3D	Stainless Steel Second Pass Flueway Baffle	100042-01	---	---	2	2	2
			102066-01	---	2	---	---	---
	3E	Circulator w/ Gaskets	Taco 007 8056170	1	1	1	1	1
Bell & Gossett NRF22 8056174			---	---	---	---	---	
Grundfos UP15-42F 8056173			---	---	---	---	---	
3F	Circulator Flange, 1-1/2" NPT	806602014	2	2	2	2	2	
3G	Cap Screw, Hex Head, 7/16" -14 x 1-1/2" Lg.	80861301	4	4	4	4	4	
3H	Hex Nut, 7/16" -14	80860406	4	4	4	4	4	
3J	5" RC-STD Draft Control	8116287	1	1	---	---	---	
	6" RC-STD Draft Control	8116288	---	---	1	1	---	
	7" RC-STD Draft Control	8116289	---	---	---	---	1	
3K	Temperature & Pressure Gauge, 3-1/4" Dia., ENFM #4104-3-1/4-1/4-10 CHR	100282-01	1	1	1	1	1	
3M	Honeywell #123869A Immersion Well, 1/2" NPT x 1-1/2" Insulation	80160456	1	1	1	1	1	
3P	Return Injector Kit	102827-01	1	1	1	1	1	
	Miscellaneous Parts Bag Assembly - (Note) Includes Items 3Q thru 3U	100098-01	1	1	1	1	1	
3Q	Relief Valve, 3/4" NPT M x F, Conbraco #10-407-05	30 PSI 81660363	1	1	1	1	1	
	Relief Valve, 3/4" NPT F x F, Conbraco #10-303-07	40 PSI 81660370*	---	---	---	---	---	
	Relief Valve, 3/4" NPT F x F, Watts #374A-50	50 PSI 103837-01*	---	---	---	---	---	
3R	Nipple, 1-1/4" NPT x 5" Lg.	100090-01	1	1	1	1	1	
3S	Tee, 1-1/4" x 1-1/4" x 3/4" NPT	806601032	1	1	1	1	1	
3T	Pipe Plugs 1-1/4" NPT	806603502	1	1	1	1	1	
3U	Drain Valve, 3/4" NPT, Conbraco #35-302-03	806603061	1	1	1	1	1	

\* 3/4" NPT close pipe nipple must be field supplied for installation of this valve

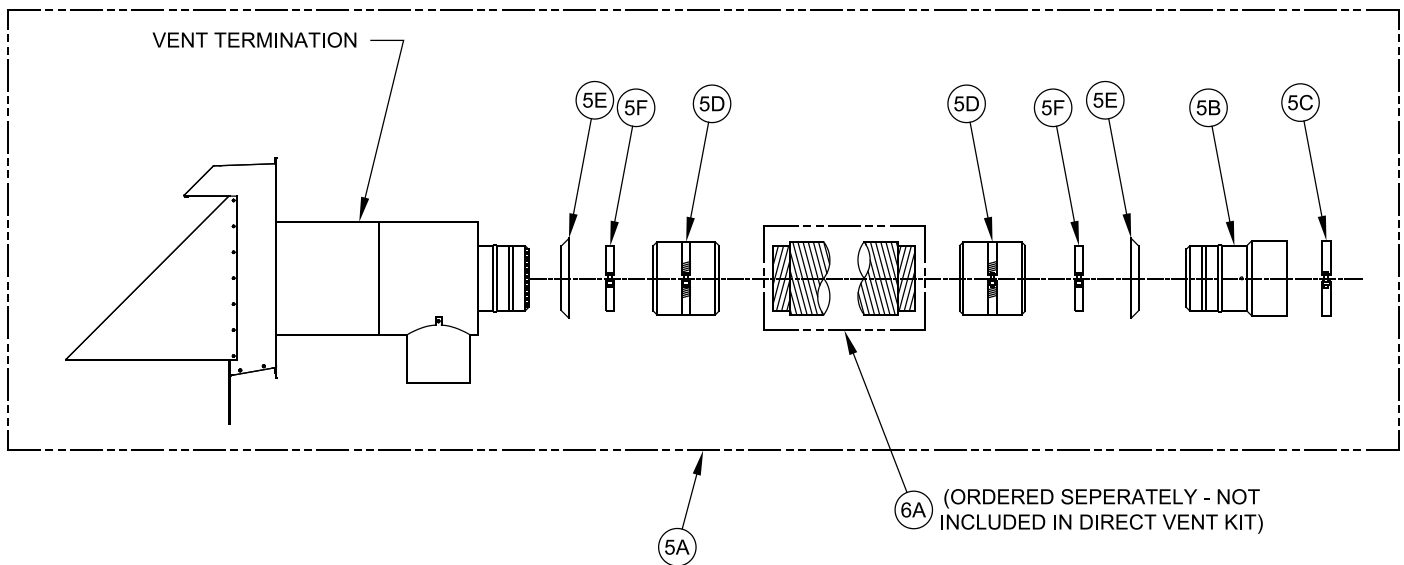
## XIV. REPAIR PARTS (continued)



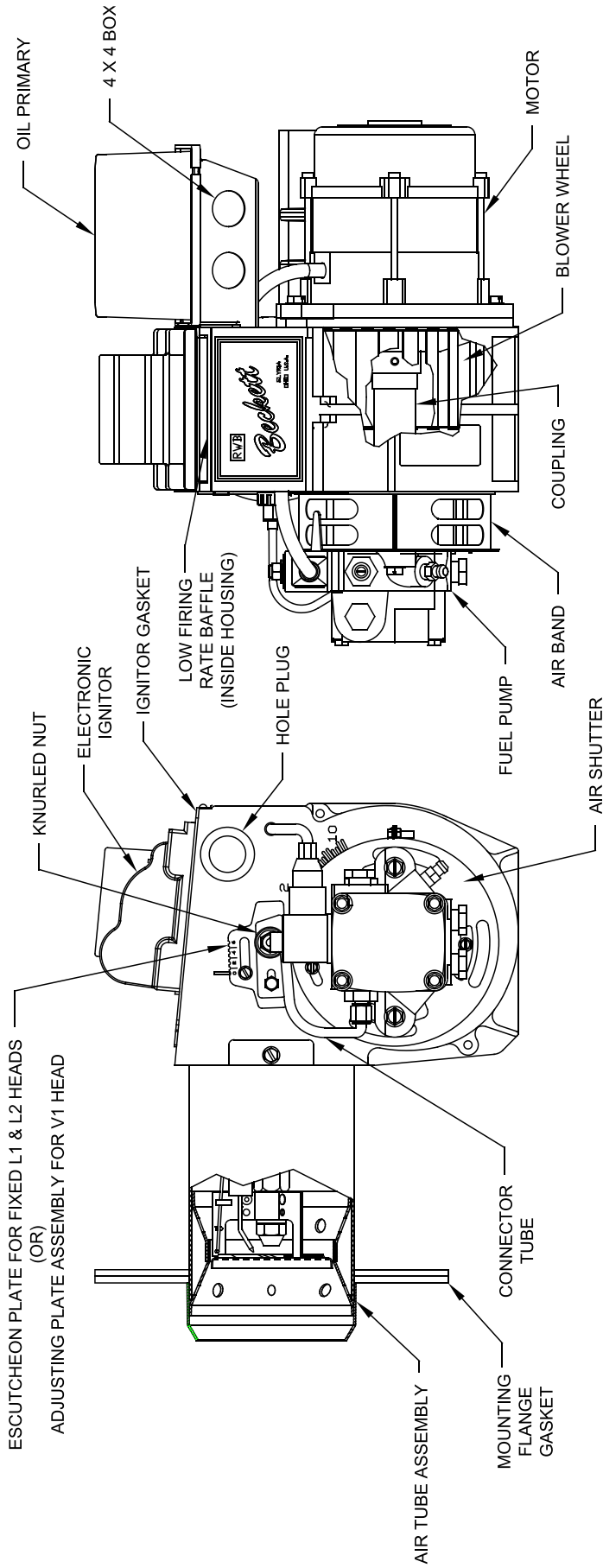
Item No.	Description	Part No.	MPO-IQ84	MPO-IQ115	MPO-IQ147	MPO-IQ189	MPO-IQ231
<b>4. CONTROLS</b>							
4A	IQ Oil Boiler Control	103851-01	1	1	1	1	1
4B	IQ Option Control Panel	102291-01	1	1	1	1	1
4C	Line Voltage Harness	103058-02	1	1	1	1	1
4D	Low Voltage Harness	103059-03	1	1	1	1	1
4E	Burner-ECOM Harness	103060-02	1	1	1	1	1
4F	Transformer	102516-01	1	1	1	1	1
Not Shown	Limit Rated Temperature Sensor, 12" Length (Honeywell 50001464-001)	103195-01	1	1	1	1	1

## XIV. REPAIR PARTS (continued)

Item No.	Description	Part No.	MPO-IQ147	MPO-IQ189	MPO-IQ231
<b>5. DIRECT VENT KITS AND PARTS</b>					
5A	Direct Vent Conversion Kit , 5-6	102130-02	1	1	---
	Direct Vent Conversion Kit, 6-7	102130-03	---	---	1
5B	Appliance Adapter, FDVS, 5-6	100234-02	1	1	---
	Appliance Adapter, FDVS, 6-7	100234-03	---	---	1
5C	6" Appliance Clamp, FDVS-6, Half	100235-02	2	2	---
	7" Appliance Clamp, FDVS-7, Half	100235-03	---	---	2
5D	Cover Sleeve Assembly, FDVS-5	100236-02	2	2	---
	Cover Sleeve Assembly, FDVS-6	100236-03	---	---	2
5E	Cover Ring Assembly, FDVS-5	100237-02	2	2	---
	Cover Ring Assembly, FDVS-6	100237-03	---	---	2
5F	Inner Pipe Clamp, FDVS-5, Half	100238-02	4	4	---
	Inner Pipe Clamp, FDVS-6, Half	100238-03	---	---	4
<b>6. FLEX OIL VENT PIPE</b>					
6A	5" Dia. x 5 ft. FOVP-505	100211-02	1	1	---
	5" Dia. x 10 ft. FOVP-510	100212-02			
	5" Dia. x 15 ft. FOVP-515	100213-02			
	5" Dia. x 20 ft. FOVP-520	100214-02			
	6" Dia. x 5 ft. FOVP-605	100211-03	---	---	1
	6" Dia. x 10 ft. FOVP-610	100212-03			
	6" Dia. x 15 ft. FOVP-615	100213-03			
	6" Dia. x 20 ft. FOVP-620	100214-03			

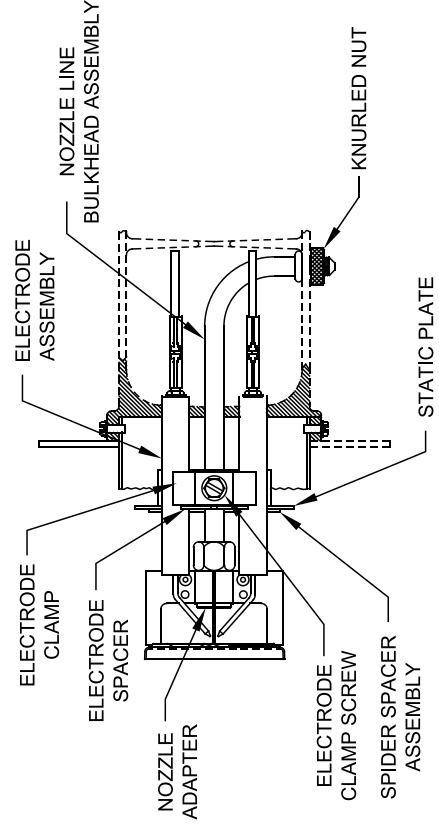


# XIV. REPAIR PARTS (continued)



FRONT VIEW

SIDE VIEW



NOZZLE DETAIL  
Beckett AFG Burner

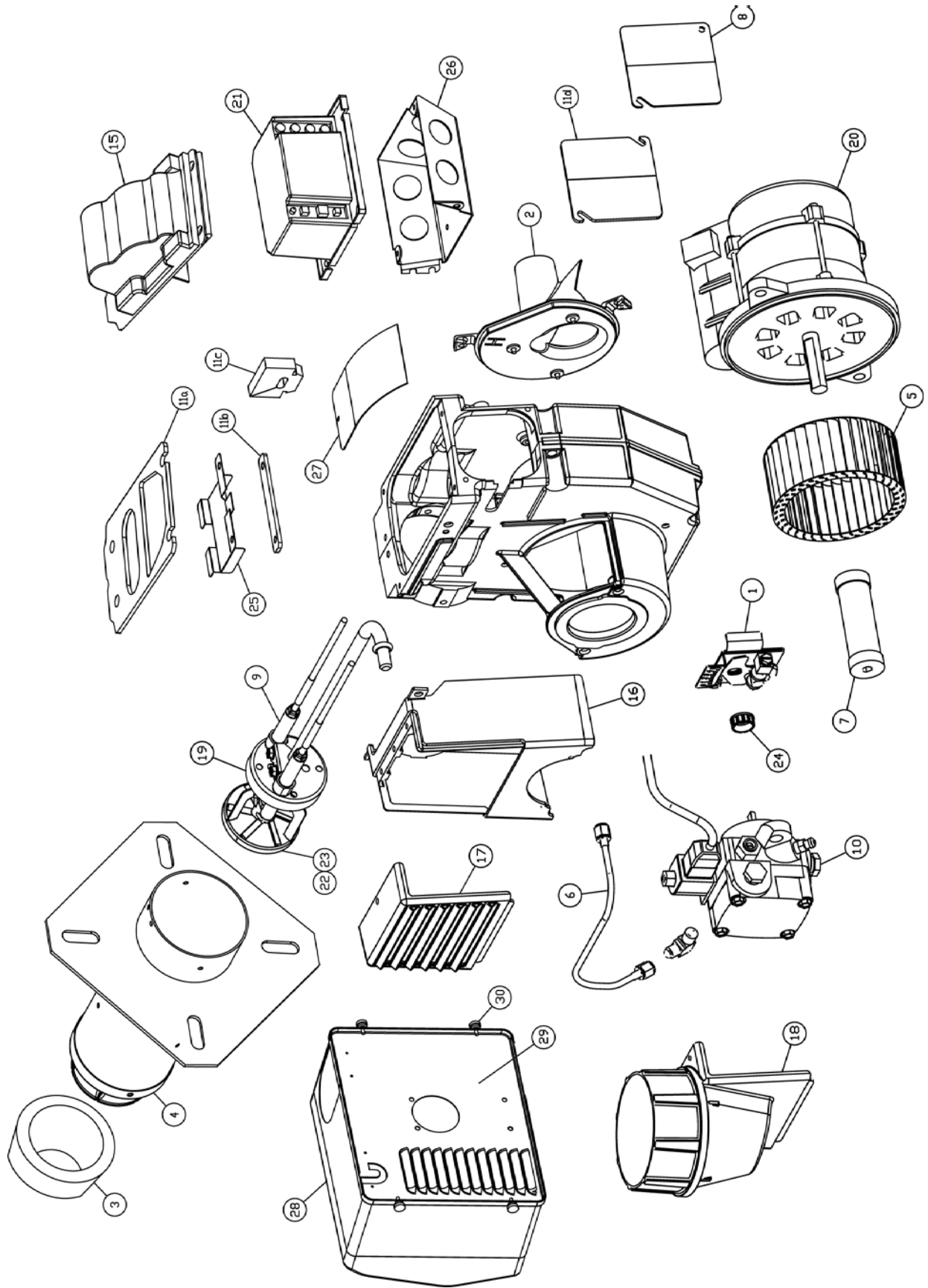
## XIV. REPAIR PARTS (continued)

### BECKETT AFG OIL BURNER PART NOS. FOR MPO-IQ SERIES BOILERS NATURAL DRAFT APPLICATIONS

NOTE: When ordering parts always give the serial and model numbers shown on the boiler and burner. Also provide the name of the part(s) and part number as listed below.

Boiler Model	MPO-IQ84	MPO-IQ115	MPO-IQ147	MPO-IQ189	MPO-IQ231
Air Tube Combination	AFG70MQASN	AFG70MPASN	AFG70MMAQN	AFG70MLASN	AFG70MKASN
Beckett's Spec. No.	BCB9502	BCB9503	BCB9504	BCB9505	BCB9506
Air Band	31840	31840	3492	3492	3492
Air Band Nut	4150	4150	4150	4150	4150
Air Band Screw	4198	4198	4198	4198	4198
Air Shutter	3709	3709	3709	3709	3709
Air Shutter Screw	4198	4198	4198	4198	4198
Blower Wheel	2999	2999	2999	2999	2999
Coupling	2454	2454	2454	2454	2454
Low Firing Rate Baffle	3708	---	---	---	---
Bulkhead Knurled Locknut	3666	3666	3666	3666	3666
Connector Tube Assembly	5636	5636	5636	5636	5636
Electrode Clamp	149	149	149	149	149
Electrode Clamp Screw	4219	4219	4219	4219	4219
Electrode Insulator Assembly	5780	5780	5780	5780	5780
Spider Spacer Assembly	5503	5503	5503	5503	5503
Escutcheon Plate	3493	3493	3493	5941	5941
Adjusting Plate Assembly	---	---	---	5941	5941
Head	51895	51895	5912	5913G	5913G
Head Screws	4221	4221	4221	4221	4221
Flange Gasket	32388	32388	32388	32388	32388
AFG Housing	5874	5874	5874	5874	5874
Motor	21805	21805	21805	21805	21805
Nozzle Adapter	213	213	213	213	213
Nozzle Line Electrode Assembly	NL70MB	NL70MB	NL70MM	NL70MD	NL70MD
Oil Pump, Clean Cut (Single Stage)	2184404U	2184404U	2184404U	2184404U	2184404U
Oil Pump, Clean Cut (Two-Stage)	51975U	51975U	51975U	51975U	51975U
Static Plate	3384	3383	3384	---	31905P
Ignitor	51771U	51771U	51771U	51771U	51771U
Ignitor Hinge Screw	4217	4217	4217	4217	4217
Ignitor Holding Screw	4292	4292	4292	4292	4292
Ignitor Gasket Kit	51304	51304	51304	51304	51304
Wire Guard	10251	10251	10251	10251	10251
Junction Box	5770	5770	5770	5770	5770
Flame Detector	7006	7006	7006	7006	7006
Oil Solenoid Valve Coil	21775U	21775U	21775U	21775U	21775U
Oil Solenoid Valve Cord	21807	21807	21807	21807	21807

# XIV. REPAIR PARTS (continued)



**Beckett NX Burner**

## XIV. REPAIR PARTS (continued)

### BECKETT NX OIL BURNER PART NOS. FOR MPO-IQ SERIES BOILERS DIRECT VENT APPLICATIONS

NOTE: When ordering parts always give the serial and model numbers shown on the boiler and burner. Also provide the name of the part(s) and part number as listed below.

Item No.	Part Description	MPO-IQ147	MPO-IQ189	MPO-IQ231
		Beckett Part Numbers		
	Complete Oil Burner (without Primary Control)	BCB9403	BCB9404	BCB9405
1	Air Adjustment Mechanism Assembly	51794U		
2	Air Guide	101101U		
3	Heat Shield (where used/optional)	Specify		
4	Air Tube Combination	NX70LB	NX90LD	
	Air Tube Mounting Screws #8 x 3/8"	4396		
5	Blower Wheel	29994U		
6	Connector Tube Assembly, 11"	51127		
7	Coupling	2454		
8	Rear Access Door	32119U		
9	Electrodes Insulator Kit	51811U		
10	Fuel Unit, Single Stage, A2EA6520N621L	2184404U		
	Fuel Unit, Two Stage	51975U		
	Mounting Screws 1/4 -20 x 7/8"	4189		
11a	Gasket, Igniter Baseplate	51942U		
11b	Gasket, Igniter Baseplate Hinge			
11c	Gasket, Wiring			
11d	Gasket, Rear Access Door			
15	Igniter, Electronic	51771U		
16	Inlet Air Box	1010U		
18	Inlet Air Adapter, Outside Air Kit	1014U		
19	Nozzle Line Electrode and Head Assembly	Specify		
20	Motor	21805U		
	Mounting Screws 1/4 -20 x 7/8"	4189		
21	Oil Primary (Safety Control)	Specify		
22	Retention Head Assembly - 6 Slot	51785U		
23	Retention Head Assembly - 9 Slot	51815U		
24	Splined Nut	3666		
25	Spring, Igniter Prop	32058PU		
26	Wiring Box	5770		
27	Low Firing Rate Baffle (If applicable)	32229U		
28	Cover, Burner	51812U		
29	Mounting Plate, Burner Cover	32103U		
30	Thumbscrews, Cover Mounting	21899U		
Not Shown	Gasket, Flange	32087		
	Main Housing Assembly	51783		
	Nozzle Line Heater (If applicable)	51621		

## **XIV. REPAIR PARTS (continued)**

### **RIELLO OIL BURNER PART NUMBERS FOR MPO-IQ SERIES BOILERS**

NOTE: When ordering parts always give the serial and model numbers shown on the boiler and burner.

Refer to Models F3 & F5 Installation Manual, Riello 40 Series Residential Oil Burners (C6501010) or Model F10 Installation Manual, Riello 40 Series Residential Oil Burners (2902554) for an exploded view of the burner and a list of spare parts.

For replacement Riello oil burner parts, contact your wholesaler or the burner manufacturer:

Riello Corporation of America  
35 Pond Park Road  
Hingham, Massachusetts 02043  
Telephone: (617) 749-8292  
Facsimile: (617) 740-2069  
Toll Free: (outside Massachusetts)  
(800) 992-7637

Riello Canada Inc.  
2165 Meadowpine Blvd.  
Mississauga, Ontario L5N 6H6  
Telephone: (905) 542-0303  
Facsimile: (905) 542-1525  
Toll Free: (800) 387-3898

### **CARLIN OIL BURNER PART NUMBERS FOR MPO-IQ SERIES BOILERS**

NOTE: When ordering parts always give the serial and model numbers shown on the boiler and burner.

Refer to *Installation and Operating Instructions for Packaged Heating/Burner Units, Carlin Elite EZ-LF and EZ-66 Oil Burners* (Form CCT-569A) for an exploded view of the burner and a list of spare parts.

For replacement Carlin oil burner parts, contact your wholesaler or the burner manufacturer:

CCT, Carlin Combustion Technology, Inc.  
70 Maple Street  
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