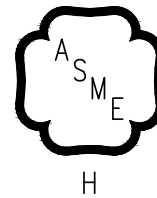


INSTALLATION, OPERATING AND SERVICE INSTRUCTIONS FOR

MegaSteam™ 3-PASS OIL BOILER



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

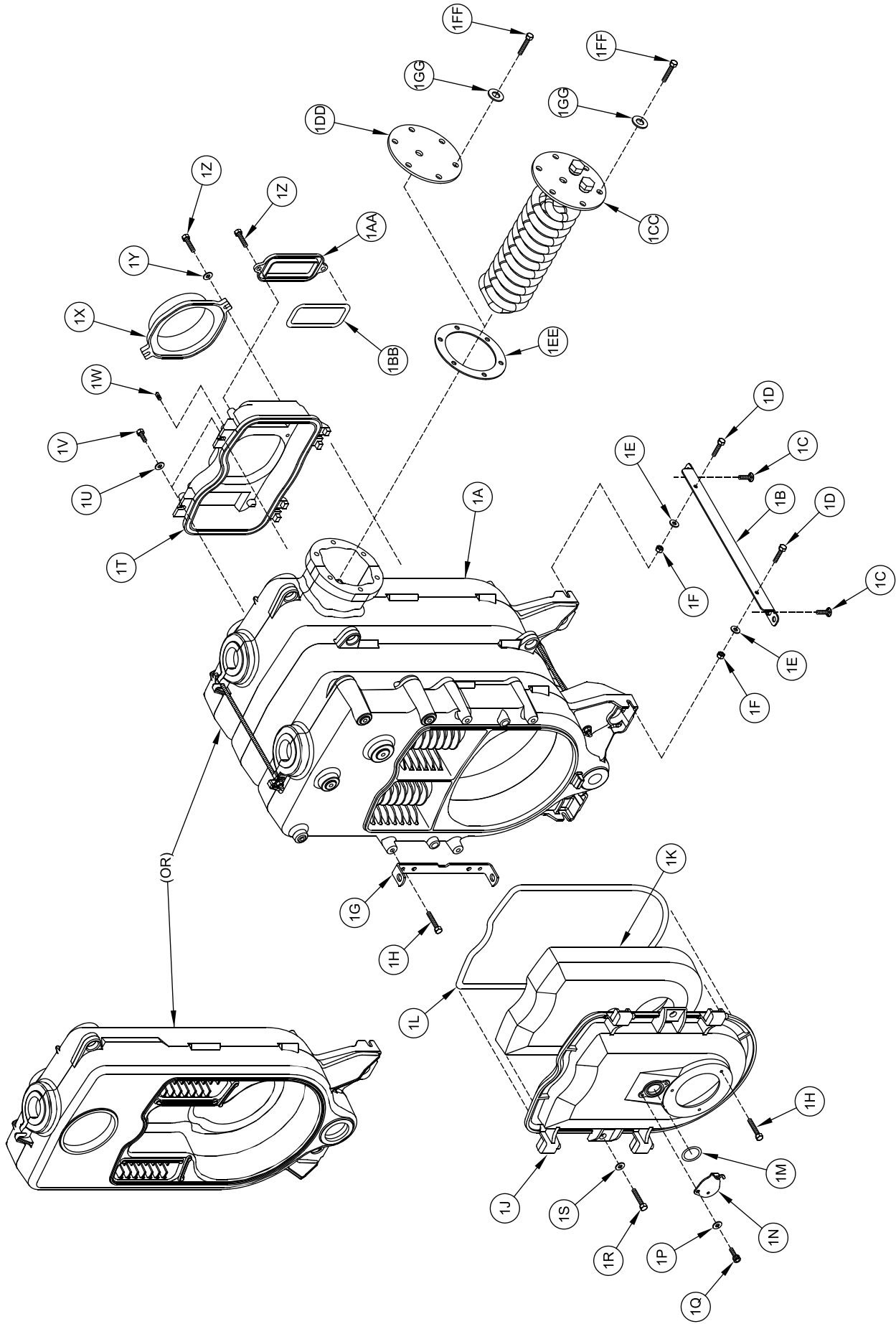
Boiler Model Number MST	Boiler Serial Number	Installation Date
Heating Contractor		Phone Number
Address		



SECTION XII: REPAIR PARTS (continued)

Item No.	Description	Part No.	MST288	MST396	MST513	MST629	
1. BARE BOILER ASSEMBLY							
1A	Cast Iron Block Assembly - 3 Section (Non Heater)	100567-03	1	1	---	---	
	Cast Iron Block Assembly - 3 Section (Heater)	100566-03	1	1	---	---	
	Cast Iron Block Assembly - 4 Section (Non Heater)	100567-04	---	---	1	---	
	Cast Iron Block Assembly - 4 Section (Heater)	100566-04	---	---	1	---	
	Cast Iron Block Assembly - 5 Section (Non Heater)	100567-05	---	---	---	1	
	Cast Iron Block Assembly - 5 Section (Heater)	100566-05	---	---	---	1	
1B	Spanner Bar w/Threaded Inserts, 1-1/4" x 1-1/2" x 20-3/8" Lg.	100012-02	2	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	
1D	Cap Screw, 5/16" -18 x 7/8" Lg., Plated	80861371	4	4	4	4	
1E	Flat Washer, 5/16", USS, Plated	80860611	4	4	4	4	
1F	Hex Nut, 5/16 -18, Serrated Flange, Plated	80860443	4	4	4	4	
1G	Hinge Bracket	100014-01	1	1	1	1	
1H	5/16" -18 x 3/4" Lg. Cap Screw, Plated	Hinge Bracket	80861340	2	2	2	2
		Mount Burner		3	3	3	3
1J	Cast Iron Burner Swing Door (Only)	102421-01	1	1	1	1	
1K	Burner Swing Door Insulation (Less Pockets)	100039-01	1	1	1	---	
	Burner Swing Door Insulation (With Pockets)	100039-02	---	---	---	1	
1L	5/8" Dia. Rope Gasket - Burner Swing Door	102022-01	1	1	1	1	
1M	1/8" Dia. Rope Gasket - Observation Port	100096-01	1	1	1	1	
1N	Observation Port Cover	100015-01	1	1	1	1	
1P	5/16" Flat Washer, SAE, Plated	80860647	2	2	2	2	
1Q	Socket Head Cap Screw, 5/16" x 5/8" Lg., Plated	100050-01	2	2	2	2	
1R	Tap Bolt, 3/8" -16 x 1-3/4" Lg., Plated	100102-01	2	2	2	2	
1S	5/16" Flat Washer, USS, Plated	80860611	2	2	2	2	
1T	Smokebox	100021-01	1	1	1	1	
1U	5/16" Flat Washer, USS, Plated	80860611	4	4	4	4	

SECTION XII: REPAIR PARTS (continued)

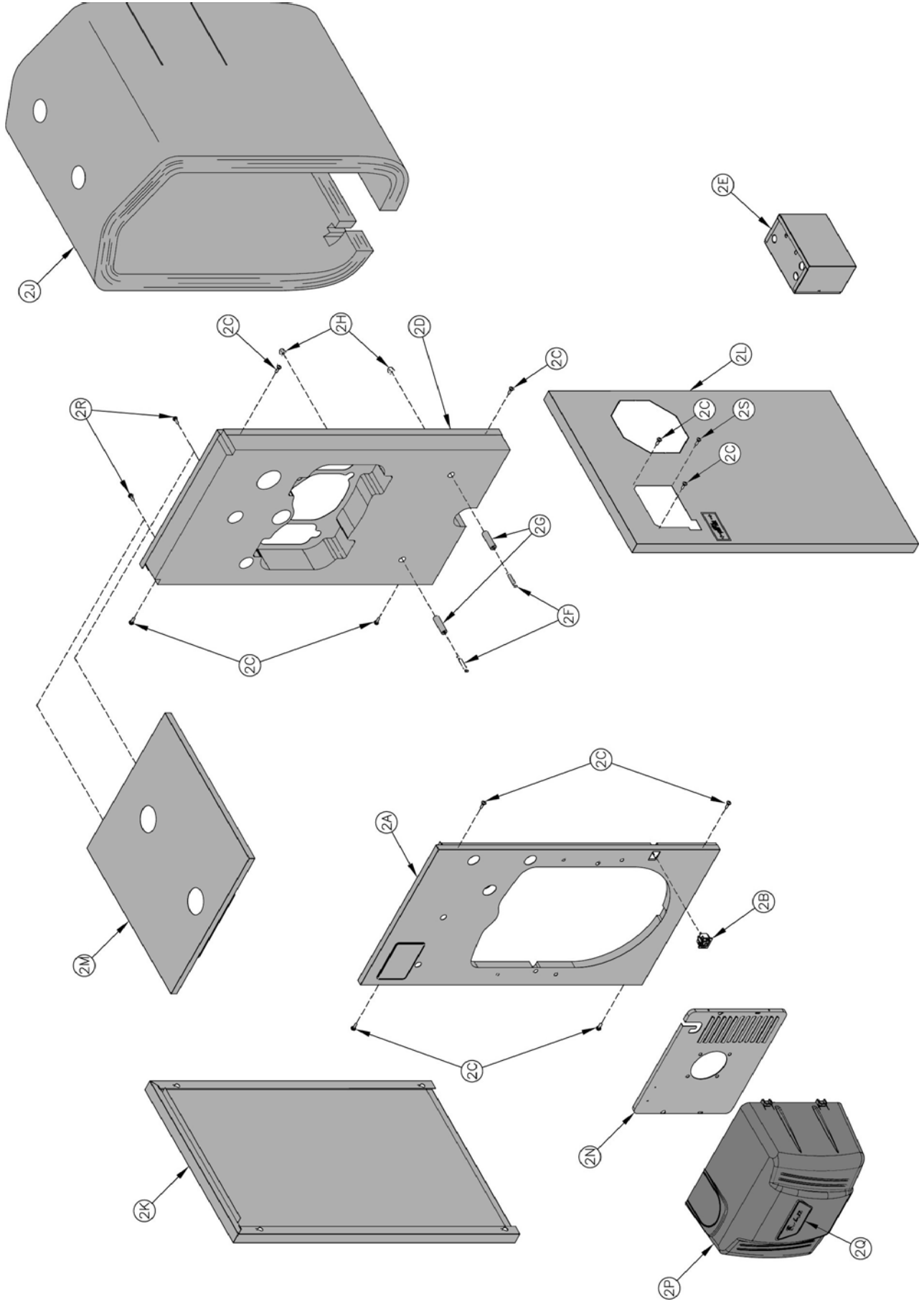


Bare Boiler Assembly

SECTION XII: REPAIR PARTS (continued)

Item No.	Description	Part No.	MST288	MST396	MST513	MST629	
1. BARE BOILER ASSEMBLY (Continued)							
1V	Cap Screw, 5/16" -18 x 3/4" Lg., Plated	80861340	4	4	4	4	
1W	1/4" NPT Pipe Plug, Square Head, Brass	806603542	1	1	1	1	
1X	Smokebox Collar	6" Dia.	100093-01	1	1	1	---
		7" Dia.	100094-01	---	---	---	1
1Y	5/16" Flat Washer, USS, Plated	80860611	2	2	2	2	
1Z	Cap Screw, 5/16" -18 x 7/8" Lg., Plated	80861371	6	6	6	6	
1AA	Cast Iron Clean-Cut Cover (only)	100104-01	2	2	2	2	
1BB	1/2" Dia. Rope Gasket - Clean-Cut Cover	100095-01	2	2	2	2	
1CC	222B Heater Carton Assembly	104939-01	1	1	1	1	
1DD	Tapped Heater Cover Plate - Rear Heater	7036031	1	1	1	1	
1EE	Heater Cover Plate Gasket	8036068	1	1	1	1	
1FF	Cap Screw, 3/8" -16" x 7/8" Lg., Plated, ASME Grade SA307B	80861337	6	6	6	6	
1GG	5/16" Flat Washer, SAE, Plated	80860647	6	6	6	6	

SECTION XII: REPAIR PARTS (continued)

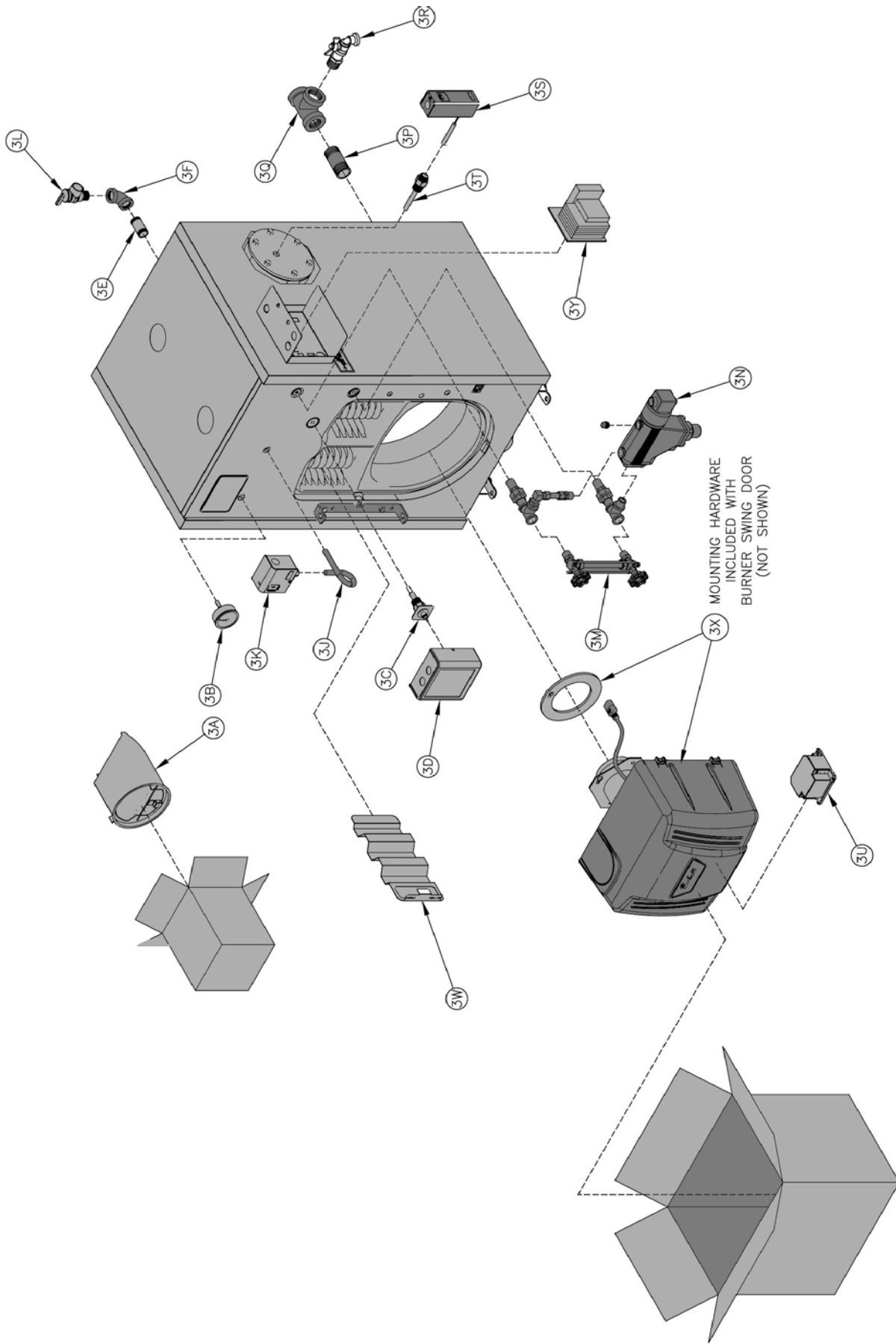


Jacket Assembly

SECTION XII: REPAIR PARTS (continued)

Item No.	Description	Part No.	MST288	MST396	MST513	MST629
2. JACKET ASSEMBLY						
2A	Jacket Front Panel Assembly w/Insulation	100575-01	1	1	1	1
2B	Power Outlet Receptacle, w/Harness	100605-01	1	1	1	1
2C	#8 x 1/2" Type AB Truss Head w/Shoulder, Sheet Metal Screw, Plated	100038-01	10	10	10	10
2D	Jacket Rear Panel Assembly w/Insulation	100578-01	1	1	1	1
2E	External Wiring Enclosure	100602-01	1	1	1	1
2F	Tap End Stud, 5/16" -18 x 3" Lg., Plain	100046-01	2	2	2	2
2G	5/8" O.D. x 2-5/32" Lg. Jacket Spacer	100035-01	2	2	2	2
2H	Acorn Nut, 5/16" -18, Plated	100047-01	2	2	2	2
2J	3" Thick Fiberglass Insulation Wrapper	100614-03	1	1	---	---
		100614-04	---	---	1	---
		100614-05	---	---	---	1
2K	Jacket Left Side Panel - 3 Section	100581-03	1	1	---	---
	Jacket Left Side Panel - 4 Section	100581-04	---	---	1	---
	Jacket Left Side Panel - 5 Section	100581-05	---	---	---	1
2L	Jacket Right Side Panel - 3 Section	100583-03	1	1	---	---
	Jacket Right Side Panel - 4 Section	100583-04	---	---	1	---
	Jacket Right Side Panel - 5 Section	100583-05	---	---	---	1
2M	Jacket Top Panel - 3 Section	100585-03	1	1	---	---
	Jacket Top Panel - 4 Section	100585-04	---	---	1	---
	Jacket Top Panel - 5 Section	100585-05	---	---	---	1
2N	Beckett Burner Plastic Enclosure Backer Plate	102233-01	1	1	1	1
2P	Beckett Burner Plastic Enclosure Cover	102232-01	1	1	1	1
2Q	Beckett Burner Plastic Enclosure Name Plate	102231-01	1	1	1	1
2R	Sheet Metal Screw, Plated, Phillips Truss Head, Type AB, #8 x 1/2" Lg.	80860000	2	2	2	2
2S	Sheet Metal Screw, Plated, Phillips Pan Head, Type B, #8 x 1/2" Lg.	80860019	1	1	1	1

SECTION XII: REPAIR PARTS (continued)

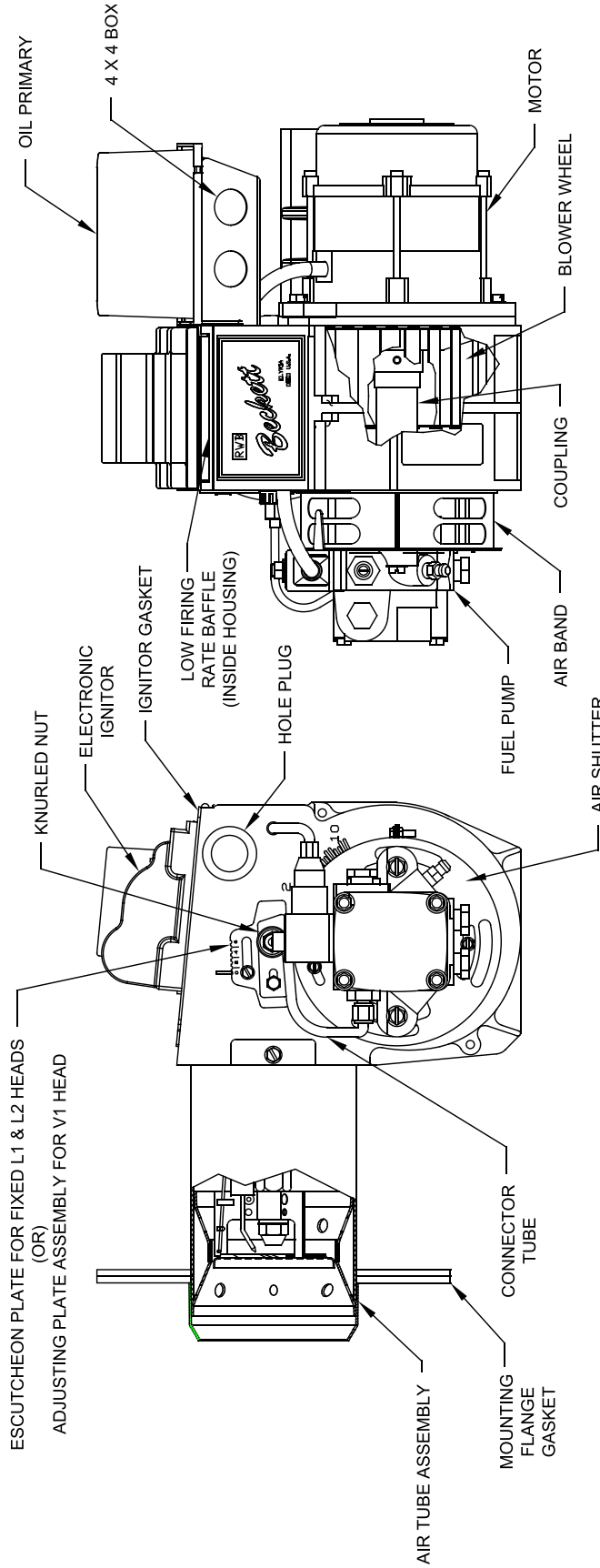


MST288 Thru MST629 Steam Boilers - Trim and Controls

SECTION XII: REPAIR PARTS (continued)

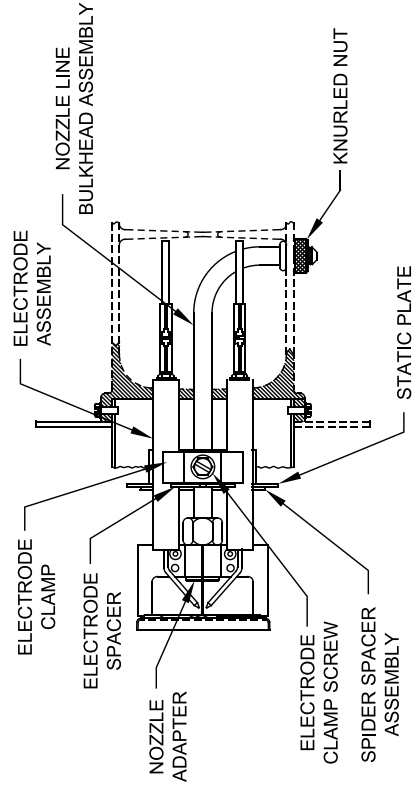
Item No.	Description	Part No.	MST288	MST396	MST513	MST629
3. MST - TRIM AND CONTROLS						
3A	6" RC-STD Draft Regulator	8116288	1	1	1	---
	7" RC-STD Draft Regulator	8116289	---	---	---	1
3B	Pressure Gauge	100325-01	1	1	1	1
3C	Probe, Hydrolevel EL-1214 (for Hydrolevel CG450)	80160629	1	1	1	1
3D	Low Water Cut-off, Hydrolevel CG450 (less Probe)	107293-01	1	1	1	1
	Low Water Cut-off, McDonnell & Miller PSE-801	104207-01				
3E	Nipple, 3/4" NPT x 3" Lg.	806600002	1	1	1	1
3F	Elbow, 3/4" NPT x 90	806601502	1	1	1	1
3J	Syphon, 1/4" NPT x 1-7/8" x 4" x 90, Brass	806603039	1	1	1	1
3K	Pressure Limit, Honeywell L404F1367	80160369	1	1	1	1
3L	Safety Valve, 3/4" NPT, 15 PSI, Conbraco 13-511-08	81660530	1	1	1	1
3M	Gauge Glass Set, 6", Conbraco 20-104-10	8056091	1	1	1	1
3N	Low Water Cut-off, McDonnell & Miller 67	80160597	1	1	1	1
3P	Nipple, 1-1/2" NPT x 5" Lg.	808600060	1	1	1	1
3Q	Tee, 1-1/2" x 1-1/2" x 3/4"	806601105	1	1	1	1
3R	Drain Valve, 3/4" NPT, Conbraco 35-302-03	806603061	1	1	1	1
3S	Limit, Honeywell L4006A2015	80160400	1	1	1	1
3T	Well, 1/2" NPT x 3", Honeywell 123872A	80160497	1	1	1	1
3U	Oil Primary Control, Honeywell R7284P1080	103880-01	1	1	1	1
3W	Stainless Steel 2nd Pass Flueway Baffle	100042-01	---	1	1	1
3X	Beckett AFG Oil Burner w/Gasket for:					
	MST288 Spec. No. BCB9006	103895-03	1	---	---	---
	MST396 Spec. No. BCB9504	104508-03	---	1	---	---
	MST513 Spec. No. BCB9505	104509-04	---	---	1	---
	MST629 Spec. No. BCB9506	104510-05	---	---	---	1
(NOTE: See Pages 62 and 63 for Burner Parts Breakdown)						
3Y	Fan Center, Honeywell R8285C w/Connectors	100640-01	1	1	1	1

SECTION XII: REPAIR PARTS (continued)



SIDE VIEW

FRONT VIEW



NOZZLE DETAIL

Beckett AFG Burner

SECTION XII: REPAIR PARTS (continued)

BECKETT OIL BURNER PART NOS. FOR MEGASTEAM™ SERIES BOILERS

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	MST288	MST396	MST513	MST629
Air Tube Combination	AFG70MMAQN	AFG70MMAQN	AFG70MLASN	AFG70MKASN
Beckett's Spec. No.	BCB9006	BCB9504	BCB9505	BCB9506
Air Band	3492	3492	3492	3492
Air Band Nut	4150	4150	4150	4150
Air Band Screw	4198	4198	4198	4198
Air Shutter	3709	3709	3709	3709
Air Shutter Screw	4198	4198	4198	4198
Blower Wheel	2999	2999	2999	2999
Coupling	2454	2454	2454	2454
Low Firing Rate Baffle	3708	Less	Less	Less
Bulkhead Knurled Locknut	3666	3666	3666	3666
Connector Tube Assembly	5636	5636	5636	5636
Electrode Clamp	149	149	149	149
Electrode Clamp Screw	4219	4219	4219	4219
Electrode Insulator Assembly	5780	5780	5780	5780
Support / Spacer Assembly	5992	5992	5992	5992
Escutcheon Plate	---	---	---	---
Adjusting Plate Assembly	5941	5941	5941	5941
Head	5913	5913	5913	5913
Head Screws	4221	4221	4221	4221
Flange Gasket	3811	3811	3811	3811
AFG Housing	5874GY	5874GY	5874GY	5874GY
Motor	21805E/218	21805E/218	21805E/218	21805E/218
Nozzle Adapter	213	213	213	213
Nozzle Line Electrode Assembly	NL70MD	NL70MD	NL70MD	NL70MD
Oil Pump, Clean Cut, Single Stage	21844	21844	21844	21844
Oil Pump, Clean Cut, Two-Stage	21941	21941	21941	21941
Static Plate	3383	3383	3383	3383
Ignitor	51771U	51771U	51771U	51771U
Ignitor Hinge Screw	42176	4217	4217	4217
Ignitor Holding Screw	4292	4292	4292	4292
Ignitor Gasket Kit	51304	51304	51304	51304
Wire Guard	10251	10251	10251	10251
Junction Box	3741	3741	3741	3741
Flame Detector	7006Q	7006Q	7006Q	7006Q
Oil Solenoid Valve Coil	21775U	21775U	21775U	21775U
Oil Solenoid Valve Cord	21807	21807	21807	21807

SECTION XII: REPAIR PARTS (continued)

RIELLO OIL BURNER PART NUMBERS FOR MEGASTEAM 3-PASS OIL 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)* 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 MEGASTEAM 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
East Longmeadow, MA 01028
Telephone: (413) 525-7700
Facsimile: (413) 525-8306

SECTION XII: REPAIR PARTS (continued)

TABLE 11: BECKETT AFG BURNER SPECIFICATIONS

Boiler Model	Burner Input (gph)	Head Type (setting)	Air Shutter (setting)	Air Band (setting)	Nozzle	Pump Pressure (psi)	Approx. Shipped CO ₂ (%)	Baffle Location (pass)	Approx. Stack Temp. Increase Without Baffles (F) ²	Baffles IN Minimum Breach Pressure ("w.c.) ³	Baffles OUT Minimum Breach Pressure ("w.c.) ³	Baffles IN Minimum Overfire Pressure ("w.c.) ³	Baffles OUT Minimum Overfire Pressure ("w.c.) ³
MST288	0.75	L1	6'	1	0.60 x 60A Delavan	150	11.5	---	---	0	0	---	0.010
MST396	1.05	L1	9	0	0.75 x 60B Delavan	180	11.5	2nd	20	0	0	0.040	0.020
MST513	1.35	V1 (2)	7	1	1.00 x 60B Hago	180	11.5	2nd	40	0	0	0.040	0.030
MST629	1.65	V1 (3)	10	3	1.25 x 60B Hago	180	11.5	2nd	52	0	0	0.050	0.030

Notes

- 1) MST288 at 0.75 GPH firing rate utilizes a low fire baffle.
- 2) The increased stack temperature with the baffles removed is an approximation, based on a constant supply temperature of 212°F and 11.5% CO₂. Actual field conditions may be different.
- 3) These values are minimum and could be as much as -.03" w.c., more without impacting performance. Pressures based on 11.5% CO₂. Example: MST629 could have a breach pressure of -.03" w.c. and an overfire pressure of .020" w.c.
- 4) Single stage fuel pump is standard, two stage fuel pump is optional. Burner manufacturer has preset single stage fuel pump to settings shown in table above. Two stage fuel pump is factory set at 140 PSI and must be readjusted to settings shown above during burner start-up.

TABLE 11A: RIELLO BURNER SPECIFICATIONS

Boiler Model	Burner Model	Burner Input (GPH)	Nozzle	Air Gate (setting)	Turbulator (setting)	Pump Pressure (PSI)	Combustion Head	Insertion Depth (Inch)	Approx. Shipping CO ₂ (%)	Baffle Location (Pass)	Approx. Stack Temp Increase without Baffles (°F) ⁽¹⁾	Baffles IN Min. Breach Pressure ("w.c.) ⁽²⁾	Baffles OUT Min. Breach Pressure ("w.c.) ⁽²⁾	Baffles IN Min. Overfire Pressure ("w.c.) ⁽²⁾	Baffles OUT Min. Overfire Pressure ("w.c.) ⁽²⁾
MST396	F5	1.05	0.85 x 60°B Delavan	2.7	1.0	145	LBT 10.0"	10.0	11.5	2nd	65	0	0	0.040	0.020
MST513	F5	1.35	1.10 x 60°B Delavan	4.5	3.0	150	SBT 6"	3.5	11.5	2nd	39	0	0	0.040	0.030
MST629	F5	1.65	1.35 x 60°B Delavan	3.5	4.0	145	VSBT	2.25	11.5	2nd	18	0	0	0.050	0.030

¹ The increased stack temperature with the baffles removed is an approximation based on a constant supply temperature of 180°F and 11.5% CO₂. Actual field conditions may be different.

² These values are minimum and could be as much as -.03" w.c., more without impacting performance. Pressures based on 11.5% CO₂. Example: MST629 could have a breach pressure of -.03" w.c. and an overfire pressure of .020" w.c.

SECTION XII: REPAIR PARTS (continued)

TABLE 11B: CARLIN BURNER SPECIFICATIONS

Boiler Model	Burner Input (GPH)	Burner Model	Nozzle	Head Setting	Air Setting	Pump Pressure (PSI)	Air Tube Type	Insertion Depth (Inch)	Approx. Shipped CO ₂ (%)	Baffle Location (pass)	Approx. Stack Temp. Increase Without Baffles °F (2)	Approx. Breech Pressure (" w.c.) (3)	Baffles IN Approx. Overfire Pressure (" w.c.) (3)	Baffles OUT Approx. Overfire Pressure (" w.c.) (3)
MST396	1.05	EZ-66	0.85 x 45AS Dantfoss	2.0	40	150	Conical Wrap	2-5/8	11.5	2 nd	65	0	+0.040	+0.020
MST513	1.35	EZ-66	1.10 x 45B Delavan	3.5	50	150	Conical Wrap	2-5/8	11.5	2 nd	39	0	+0.040	+0.030
MST629	1.65	EZ-66	1.35 x 45B Hago	5.5	60	150	Conical Wrap	2-5/8	11.5	2 nd	18	0	+0.050	+0.030

Notes

(2) The increased stack temperature with the baffles removed is an approximation, based on a constant supply temperature of 160°F and 11.5% CO₂. Actual field conditions may be different.

(3) These values are minimum and could be as much as -.03" w.c., more without impacting performance. Pressures based on 11.5% CO₂. Example: MST629 could have a breech pressure of -.03" w.c. and an overfire pressure of .020" w.c.

4) Single stage fuel pump is standard, two-stage fuel pump is optional. Burner manufacturer has preset single stage fuel pump to settings shown in table above. Two-stage fuel pump is factory set at 140 PSI and must be readjusted to settings shown above during burner start-up.