



Replacement parts

⚠️WARNING DO NOT SERVICE THE BOILER WITHOUT A WM97+ MAINTENANCE KIT AVAILABLE

The WM97+ maintenance kit includes components that may have to be replaced when accessing or disassembling parts of the boiler. Failure to replace damaged components and to use only the parts specifically intended for the boiler can result in severe personal injury, death or substantial property damage. See Figure 93, page 95 for part number.

REPLACEMENT PART NUMBERS

Weil-McLain part numbers are found in this manual and in *Weil-McLain Boilers and Controls Repair Parts Lists*.

WHEN OPERATING THE BOILER ON PROPANE GAS

⚠️WARNING ALL WM97+ boilers must be converted in order to operate with propane gas.

Figure 92 Propane conversion kits and instructions

Boiler model	Kit part #	Kit location	Installation instructions
WM97+70	540-202-834	Shipped loose with boiler	See page 12
WM97+110	540-202-835	Shipped loose with boiler	See page 12

⚠️WARNING Failure to adhere to these guidelines can result in severe personal injury, death or substantial property damage.

OBTAIN PARTS ONLY THROUGH WEIL-McLAIN

Replacement parts must be purchased through a local Weil-McLain distributor. When ordering, specify boiler model and size and include description and part number of replacement part. Results from using modified or other manufactured parts will not be covered by warranty and may damage boiler or impair operation.

THE BOILER CONTAINS CERAMIC FIBER MATERIALS

The boiler contains ceramic fiber materials. Use care when handling these materials per instructions on page 76 of this manual. Failure to comply could result in severe personal injury.

REINSTALL JACKET DOOR

Inspect boiler jacket front door gaskets and reinstall boiler jacket front door after start or servicing. The boiler front door must be securely fastened to the boiler to prevent boiler from drawing air from inside the boiler room. This is particularly important if the boiler is located in the same room as other appliances. Failure to keep the door securely fastened could result in severe personal injury or death.

BEFORE SERVICING or MAKING CONNECTIONS —

ALWAYS TURN POWER OFF TO THE BOILER TO PREVENT ELECTRICAL SURGES, WHICH CAN DAMAGE BOILER COMPONENTS.

LABEL WIRES BEFORE REMOVING

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation.



Replacement parts *(continued)*

Figure 93 Miscellaneous parts and kits

Item	Description	Part Number	Item	Description	Part Number
CHEMICALS			VENT/AIR TERMINATION PARTS AND KITS available from Weil-McLain		
100	Antifreeze, Sentinel X500	592-900-004	180	Weil-McLain sidewall vent/air cap termination kit for PVC vent and air pipes	383-500-397
	Corrosion inhibitor, Sentinel X100	592-900-002		Includes W-M sidewall vent/air termination cap, inside and outside cover plates, and mounting hardware; openings are sized for 3" PVC pipe (requires field-installed 3 x 2 adapter if using 2" vent/air pipes)	
	Sentinel X100 Quick Test Kit	592-900-005	190		Weil-McLain sidewall vent/air cap termination kit for AL29-4C vent pipe and PVC air pipe
	Cleaner, Sentinel X400	592-900-003		Includes W-M sidewall vent/air termination cap, inside and outside cover plates, and mounting hardware; openings are sized for 3" PVC pipe (requires field-installed 3 x 2 adapter if using 2" vent/air pipes)	
BOILER ACCESSORIES			200		Sidewall separate pipes vent/air termination kits (includes two cover plates)
110	WM97+ maintenance kit — igniter, igniter gasket, venturi gasket, cover plate gasket, venturi-gas valve o-ring, refractory, silicone, inhibitor test kit, clips	383-700-165		Kit for 2" PVC vent and air pipes	383-700-171
120	Wall-mount kit (supplied with boiler) — wall mount bracket and hardware	383-700-118	Kit for 3" PVC vent and air pipes	383-500-100	
130	Condensate trap kit (supplied with boiler) — condensate trap assembly and flexible line	560-907-722	Kit for 3" AL29-4C SS vent pipe and PVC air pipe.	383-700-172	
CONDENSATE HANDLING ACCESSORIES			210	PVC concentric vent kit — horizontal or vertical (includes components for concentric assembly)	
140	Condensate neutralizer kit	383-500-631		Kit for 2" PVC vent and air pipes	383-700-167
POLYPROPYLENE VENT/AIR TERMINATIONS PARTS AND KITS available from M&G Simpson-Duravent ONLY			220	Bird screens	
150	M&G Simpson-Duravent PolyPro SIDEWALL concentric vent/air kit (color: white)			For 2" PVC vent and air pipes	560-907-728
	2" polypropylene pipe	24PPS-HK	For 3" PVC vent and air pipes	383-500-105	
160	M&G Simpson-Duravent PolyPro VERTICAL concentric vent/air kit; color = black (VK suffix) or terra cotta (TC suffix)				
	2" polypropylene pipe	24PPS-VK			
170	3" polypropylene pipe	35PPS-HK			
	M&G Simpson-Duravent PolyPro SIDEWALL separate air and vent pipes				
	2" polypropylene pipe	2PPS-HTP			
	3" polypropylene pipe	3PPS-HTP			

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Replacement parts *(continued)*

Figure 94 Jacket parts (see Figure 95, page 97 for illustration)

Item	Name	Description / contents	Part Number	Model	
				70	110
100	Front door	Front door, seals, logo, and labels	383-700-116	●	●
110	Front door to jacket seals	Seals for front door to jacket	383-700-117	●	●
120	Wall-mount bracket (wall side)	Bracket and hardware	383-700-118	●	●
130	Wall-mount bracket (boiler side)	Bracket and hardware	383-700-119	●	●
140	Gaskets - upper panel to cabinet	Gaskets - top panel to cabinet	383-700-120	●	●
150	Gasket - heat exchanger to bottom panel	Gasket - condensate trap to bottom panel	383-700-121	●	●
160	Door latch	Latch and hardware	383-700-122	●	●
170	Gasket internal flue pipe to adapter	Gasket fits inner diameter of boiler flue pipe	590-318-051	●	●
180	Flue pipe adapter	Top flue adapter with internal gasket	560-907-719	●	●
190	Boiler flue pipe	Internal flue pipe and gasket	560-907-720	●	●
200	Air inlet adapter	Top air inlet adapter with internal gasket	560-907-718	●	●
210	Gasket - pipe adapter to cabinet	Gasket - flue adapter to cabinet	590-300-031	●	●
220	Gasket - pipe adapter to system pipe	Gasket fits inner diameter of top adapter	590-318-052	●	●
230	Front door to display seal	One seal (attached to control housing)	590-300-025	●	●

Replacement parts *(continued)*

Figure 95 Jacket assembly (see Figure 94, page 96 for part numbers)



WH-051



Replacement parts *(continued)*

Figure 96 Heat exchanger parts (see Figure 97, page 99 for illustration)

Item	Name	Description / contents	Part Number	Model	
				70	110
100	Heat exchanger	Heat exchanger only	319-100-000	●	●
105	Heat exchanger with condensate dish, assembled (includes items 100, 120, 130 and 140)	Heat exchanger, condensate dish, and condensate dish gaskets, temperature sensors (2), hardware	383-700-175	●	●
110	Heat exchanger assembly (includes items 120 through 230, below:)	Heat exchanger, condensate dish, cover plate, burner, igniter, sight glass, refractory, water sensors, gaskets, silicone, and hardware	383-700-101	●	●
120	Condensate dish	Condensate dish, gaskets, and hardware	383-700-102	●	●
130	Condensate dish to heat exchanger gasket	Gasket to seal heat exchanger to condensate dish	383-700-103	●	●
140	Condensate dish to flue pipe gasket	Gasket to seal condensate dish to internal flue pipe	383-700-104	●	●
150	Refractory insulation	Refractory & silicone	383-700-105	●	●
160	Heat exchanger cover plate	Cover plate, refractory, silicone, and gaskets	383-700-108	●	●
170	Cover plate gasket	Gasket heat exchanger to cover plate	383-700-109	●	●
180	Sight glass kit	Bracket, glass, gaskets, and hardware	383-700-110	●	●
190	Sight glass	Glass	591-419-202	●	●
200	Sight glass gaskets	Upper and lower gaskets	383-700-112	●	●
210	Igniter kit	Igniter, gasket and screws	383-700-113	●	●
220	Igniter gasket	Igniter to cover plate gasket	590-300-034	●	●
230	Suppressor	Spark suppressor for igniter	590-318-008	●	●
240	Burner	Burner, gasket, and hardware	383-700-106	●	●
250	Burner gasket	Burner gasket	383-700-107	●	●
260	Heat exchanger water temperature sensor	One sensor (boiler inlet or outlet water temperature)	511-724-296	●	●



Replacement parts *(continued)*

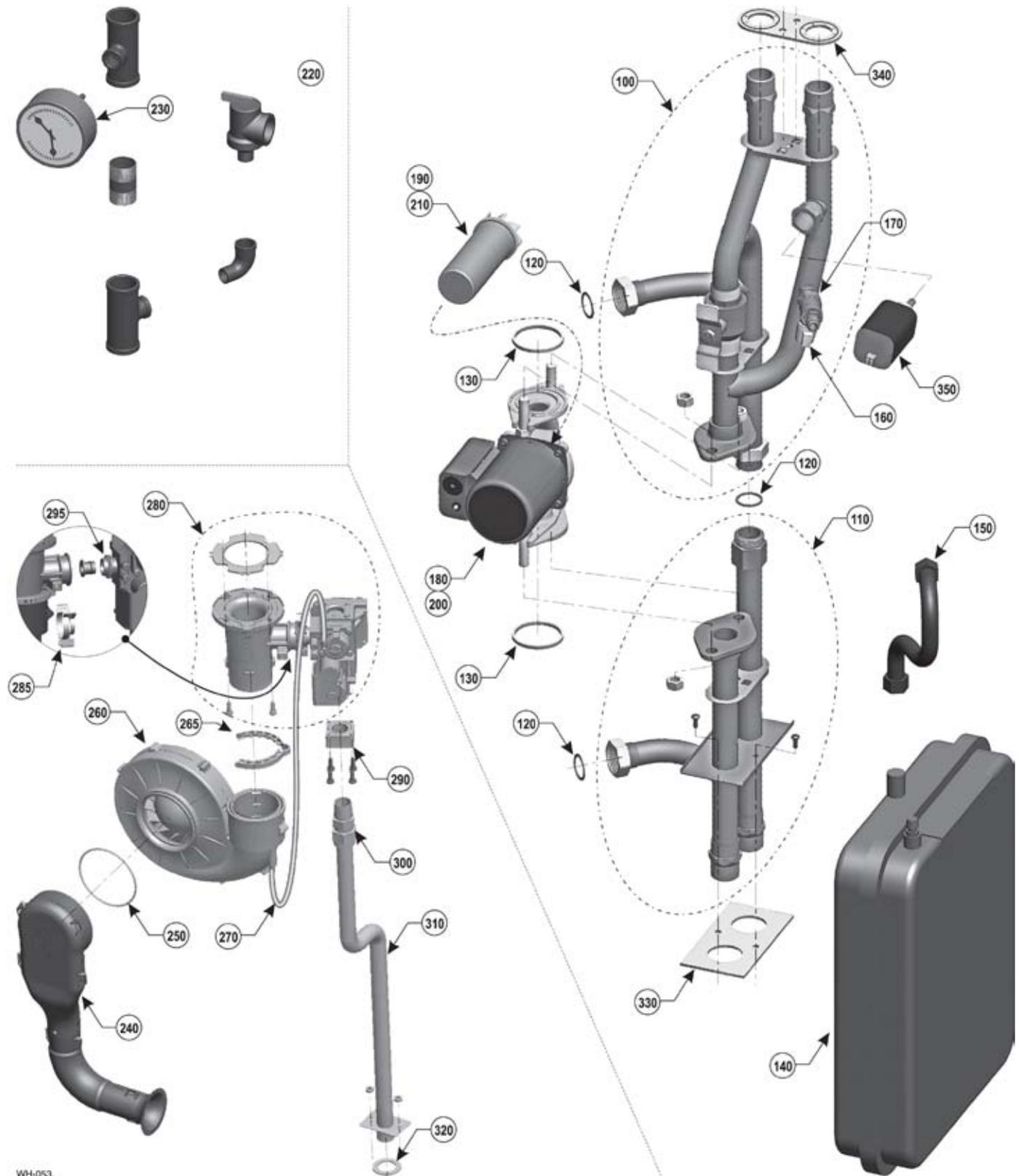
Figure 98 Piping components (see Figure 99, page 101 for illustration)

Item	Name	Description / contents	Part Number	Model	
				70	110
100	Upper water pipes	Upper pipe assembly and gaskets (1 pump, 2 water)	383-700-144	●	●
110	Lower water pipes	Lower pipe assembly and gaskets (1 pump, 2 water)	383-700-145	●	●
120	Water gaskets	Seal pipe to heat exchanger or upper pipe to lower pipe	590-300-036	●	●
130	Pump gasket	Gasket to seal pump flange to pipe flange	590-317-543	●	●
140	Expansion tank	12 Liter (3.2 gallons) expansion tank - pre-charged to 12 psi	383-700-148	●	●
150	Expansion tank line	Flared fitting stainless steel flex line	560-900-022	●	●
160	Expansion tank shutoff valve	Female NPT to flare manual ball valve	511-246-399	●	●
170	Expansion tank adapter	Female NPT to male flare	562-302-577	●	●
180	WM97+70 boiler circulator	Taco 007 & gaskets	383-700-152	●	
190	WM97+70 boiler circulator cartridge	Replacement cartridge for wet-rotor 007 circulator	511-405-142	●	
200	WM97+110 boiler circulator	Taco 0015 & gaskets	383-700-153		●
210	WM97+110 boiler circulator cartridge	Replacement cartridge for wet-rotor 0015 circulator	511-405-143		●
220	Relief valve	30 Psi relief valve — shipped loose for field installation	383-500-095	●	●
230	Pressure & temperature gauge	Shipped loose for field installation	380-000-000	●	●
240	Air inlet silencer	Silencer	383-700-155	●	●
250	Silencer o-ring	O-ring	590-318-049	●	●
260	Blower	Blower & clip	383-700-157	●	●
265	Blower retainer clip	Clip	562-650-115	●	●
270	Reference tube	Tube to connect blower to gas valve	590-300-001	●	●
280	Valve/venturi assembly	Gas valve, venturi (027), gasket, o-ring, clip, and screws	383-700-159	●	
		Gas valve, venturi (040), gasket, o-ring, clip, and screws	383-700-160		●
285	Gas valve retainer clip	Clip	562-650-116	●	●
290	Gas valve adapter block	Threaded block, o-ring, and screws	563-910-031	●	●
295	Gas valve outlet o-ring	O-ring	590-318-045	●	●
300	Gas flex line adapter	NPT to flare adapter	562-302-576	●	●
310	Gas flex line	Gas line, seal, and hardware	383-700-163	●	●
320	Gas flex line gasket	Gasket gas flex line to cabinet	590-300-027	●	●
330	Gasket - lower pipe	Gasket - lower pipe to cabinet	590-300-037	●	●
340	Gasket - upper pipe	Gasket - upper pipe to cabinet	590-318-050	●	●
350	Low water cutoff	Low water cutoff	571-100-006	●	●

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Replacement parts *(continued)*

Figure 99 Piping assemblies (see Figure 98, page 100 for part numbers)



WH-053



Replacement parts *(continued)*

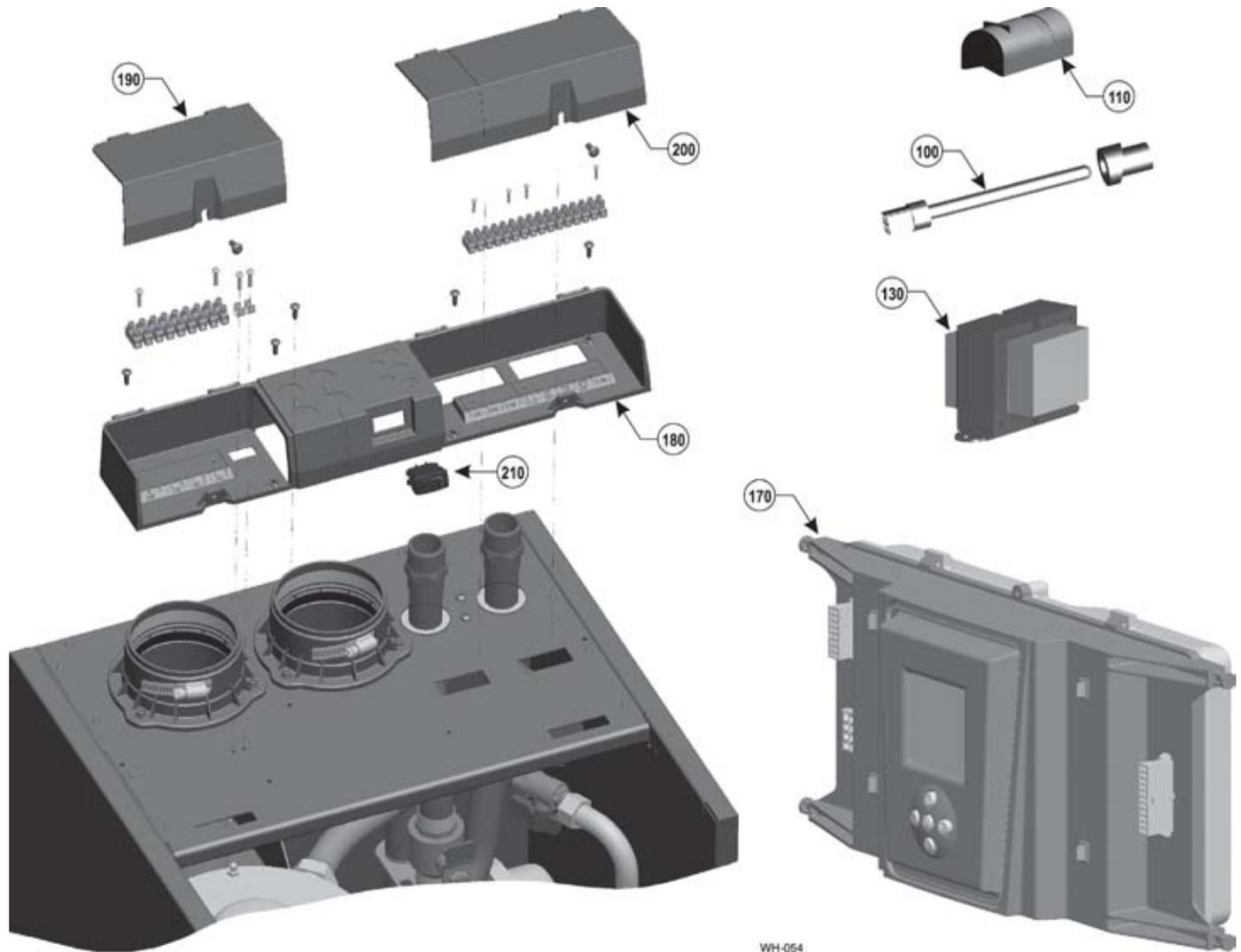
Figure 100 Controls and electrical components (see Figure 101, page 103 for illustration)

Item	Name	Description / contents	Part Number	Model	
				70	110
100	Flue temperature sensor	One sensor	511-724-292	●	●
110	Outdoor temperature sensor	One sensor	510-312-218	●	●
120	Low water cutoff (not shown here — see Figure 98, page 100)	Low water cutoff	571-100-006	●	●
130	Transformer 120v/24v	50 Va transformer	511-802-015	●	●
140	Wire harness — line voltage, 12-pin connector (not shown)	Wire harness with terminal strips	591-391-969	●	●
150	Wire harness — low voltage, 16-pin connector (not shown)	Wire harness	591-391-968	●	●
160	Wire harness — low voltage, 22-pin connector (not shown)	Wire harness with terminal strips	591-391-967	●	●
165	Ignition cable (not shown)	Ignition cable	383-500-619	●	●
170	Control assembly	Ignition control, user display, pump control, wire harnesses, plastic, gasket, label	383-700-139	●	●
180	Electrical enclosure	Plastic electrical enclosure	383-700-140	●	●
190	Line voltage lid (left side)	Lid & label	383-700-173	●	●
200	Low voltage lid (right side)	Lid & label	383-700-174	●	●
210	On/off power switch		511-624-646	●	●
220	F1 - 3 amp, fast blow ato (5 fuses) (not shown here — see Figure 86, page 83)	5 Fuses	383-500-603	●	●
230	F2 - 12 amp, slow-blow ag (5 fuses) (not shown here — see Figure 86, page 83)	5 Fuses	383-500-604	●	●



Replacement parts *(continued)*

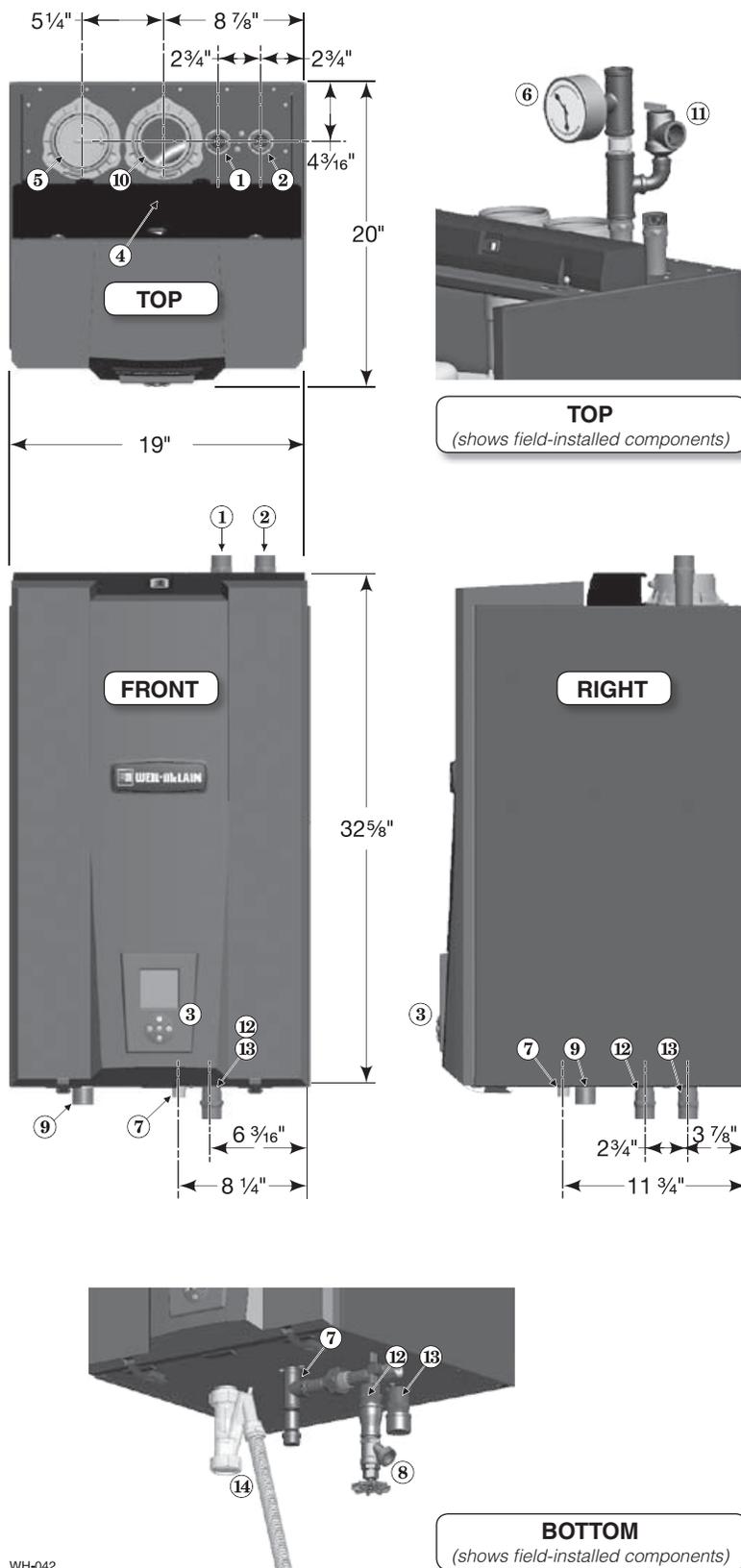
Figure 101 Controls and electrical assemblies (see Figure 100, page 102 for part numbers)





Dimensions

Figure 102 Dimensional data (all dimensions in inches)



LEGEND	
1	Boiler supply tapping, 1" NPT.
2	Boiler return tapping, 1" NPT.
3	Control panel, with display and navigation buttons
4	Electrical entrance openings
5	Vent connection: 3" PVC
6	Pressure/temperature gauge (shipped loose) See Figure 6, page 10 for mounting details and instructions.
7	Gas connection (note 1) (manual gas valve shipped loose for field installation) See page 44 for details and instructions.
8	Drain valve (shipped loose) See Figure 6, page 10 for mounting details and instructions.
9	Condensate drain connection (also see item 14, below)
10	Air connection: 3" PVC
11	Relief valve (shipped loose) See page 33 for mounting details. Relief valve mounts on supply pipe off of supply tee and 3/4" street elbow as shown.
12	Boiler drain line / DHW boiler water return line (if DHW tank is connected directly to the boiler) See Figure 7, page 11 for details and instructions for usage.
13	DHW boiler water supply line (if DHW tank is connected directly to the boiler) See Figure 7, page 11 for details and instructions for usage.
14	Condensate trap and flexible drain line (shipped loose) See page 43 for details and instructions. The condensate drain hose or pipe must connect to the flexible line supplied with the boiler to ensure the trap assembly can be removed easily.



Ratings — WM97+ boilers

Figure 103 Ratings and engineering data



DOE



Boiler Model Number	DOE Heating Capacity	CSA Input	CSA Output	Net I=B=R Ratings	Boiler Water Content	DOE Seasonal Efficiency	Vent/Air Pipe Size	Shipping Weight
	Btuh (Note 2)	Btuh (Note 5)	Btuh (Note 5)	Btuh (Note 3)	Gallons	AFUE, % (Note 1)	(Note 4)	Pounds
WM97+70	65,000	70,000	65,000	57	2.8	97.3	3"	136
WM97+110	101,000	110,000	101,000	88	2.8	97.0	3"	136

Notes	
1	As an Energy Star Partner, Weil-McLain has determined that WM97+ boilers meet the Energy Star guidelines for energy efficiency. NOTE: Adjusting boiler firing rate will affect AFUE rating.
2	Based on standard test procedures prescribed by the United States Department of Energy. Ratings also referred to as CSA Output. NOTE that only DOE Heating Capacity and AFUE are certified by AHRI. AFUE is also known as Annual Fuel Utilization Efficiency or Seasonal Efficiency.
3	Net I=B=R ratings are based on net installed radiation of sufficient quantity for the requirements of the building and nothing need be added for normal piping and pickup. Ratings are based on a piping and pickup allowance of 1.15. An additional allowance should be made for unusual piping and pickup loads.
4	WM97+ boilers must be direct-vented. WM97+ boilers require special venting, consistent with Category IV boiler. Use only the vent materials and methods specified in this manual. WM97+ vent/air pipes can be either 2" or 3" pipe. Vent/air pipe length limits for 2" piping are not as long as for 3" piping. All vent and air pipe elbows must be sweep elbows, NOT short-radius elbows.
5	Ratings shown are for sea level applications only. For altitudes from sea level to 5,500 feet above sea level, the WM97+ boiler requires no modifications and automatically derates itself by approximately 4% per 1000 feet above sea level.



Installation and Service Certificate

Boiler Model _____ Series _____ CP Number _____ Date Installed _____

- BTU Input _____
- Installation instructions have been followed.
 - Check-out sequence has been performed.
 - Above information is certified to be correct.
 - Information received and left with owner/maintenance person.

Installer _____

(Company) (Address)

(Phone) (Installer's Signature)

Boiler Start-Up Data					
Boiler Model	WM97+ _____	CO ₂ High fire	%	CO ₂ Low fire	%
Fuel	Natural ____ LP ____	CO High fire	ppm	CO Low fire	ppm
Was orifice changed? _____ Was gas valve throttle adjusted? _____ Natural gas input rate measured HIGH _____ CFH / LOW _____ CFH					

Control module SET-UP DATA					
BOILER Settings		HEAT Settings		DHW Settings	
Boiler Model	WM97+ _____	System Type		DHW	OFF ____ ON ____
High Altitude	Yes ____ NO ____	Boiler Circ Speed	HIGH __ LOW __ MED __ OFF __	Boiler Circ Speed	HIGH __ LOW __ MED __ OFF __
Manual Reset Temp	°F	Max Supply	°F	Boiler Supply	°F
WWSD Temp	°F	Min Supply	°F		
Adjust Outdoor	°F	Max Outdoor	°F		
Circulator Exercising		Min Outdoor	°F		
Circulator 1:	On ____ Off ____	Modulate On Diff	°F	Modulate On Diff	°F
Circulator 2:	On ____ Off ____	Modulate Off Diff	°F	Modulate Off Diff	°F
Circulator 3:	On ____ Off ____	Min On Time	minutes	Max On Time	minutes
Boiler circ:	On ____ Off ____	Boost Interval	minutes		
Freeze Protection		Pre-pump Time:	seconds	Pre-pump Time:	seconds
Circulator 1:	On ____ Off ____	Post-pump Time:	seconds	Post-pump Time:	seconds
Circulator 2:	On ____ Off ____	Maximum Rate	RPM	Maximum Rate	RPM
Circulator 3:	On ____ Off ____	Minimum Rate	RPM	Minimum Rate	RPM
Boiler circ:	On ____ Off ____				



WM97+ Gas Boiler Data Collection Sheet

Customer Info:		Maintenance Info:	
Contact:		Name:	
Contractor:		Phone:	
Job name:		Model:	
City, state:		CP#:	
Distributor:		Installed:	

System Components:		Boiler/System Piping Details (Please Sketch)
Near boiler pipe size:	Top: _____ Bottom (DHW): _____	
Boiler circulator speed:	HEATING: HIGH __ LOW __ MED __ OFF __ DHW: HIGH __ LOW __ MED __ OFF __	
DHW tank (yes/no):		
DHW direct/system:		
DHW model:		
DHW pipe size:		
DHW circulator model:		
Is there air in system?:		
Diagnostic Errors:		
Control fault:		
Ignition retries:		
Manal reset CNT:		
Auto reset CNT:		
Software Versions:		
Display:		
Main micro:		
Second micro:		

Lockout History #1	Lockout History #2	Lockout History #3
HH:MM MM/DD/YY:	HH:MM MM/DD/YY:	HH:MM MM/DD/YY:
Status:	Status:	Status:
Manual reset:	Manual reset:	Manual reset:
If yes-description:	If yes-description:	If yes-description:
Auto reset:	Auto reset:	Auto reset:
If yes-description:	If yes-description:	If yes-description:
Temperatures:	Temperatures:	Temperatures:
Status:	Status:	Status:
Boiler out 1:	Boiler out 1:	Boiler out 1:
Boiler out 2:	Boiler out 2:	Boiler out 2:
Boiler in 1:	Boiler in 1:	Boiler in 1:
Flue 1:	Flue 1:	Flue 1:
Flue 2:	Flue 2:	Flue 2:
Outdoor:	Outdoor:	Outdoor:
Inputs:	Inputs:	Inputs:
Status:	Status:	Status:
Input 1:	Input 1:	Input 1:
Input 2:	Input 2:	Input 2:
Input 3:	Input 3:	Input 3:
Manual limit:	Manual limit:	Manual limit:
Auto limit:	Auto limit:	Auto limit:
Low WTR Cutoff:	Low WTR Cutoff:	Low WTR Cutoff:
Blower tach:	Blower tach:	Blower tach:
Flame signal:	Flame signal:	Flame signal:
Outputs:	Outputs:	Outputs:
Status:	Status:	Status:
Gas valve:	Gas valve:	Gas valve:
Boiler circulator:	Boiler circulator:	Boiler circulator:
Circulator 1:	Circulator 1:	Circulator 1:
Circulator 2:	Circulator 2:	Circulator 2:
Circulator 3:	Circulator 3:	Circulator 3:
Blower signal:	Blower signal:	Blower signal:
Alarm:	Alarm:	Alarm:

