



80 Water & steam boilers

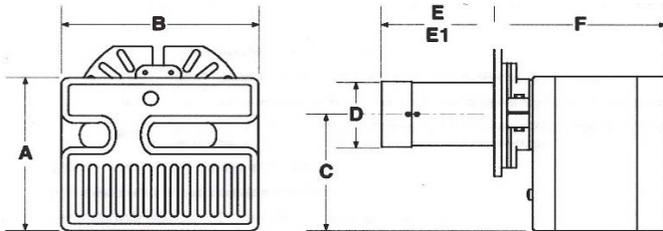
for use with Gas, Light Oil, & Gas/Light Oil - Fired Burners

Burner specifications and data

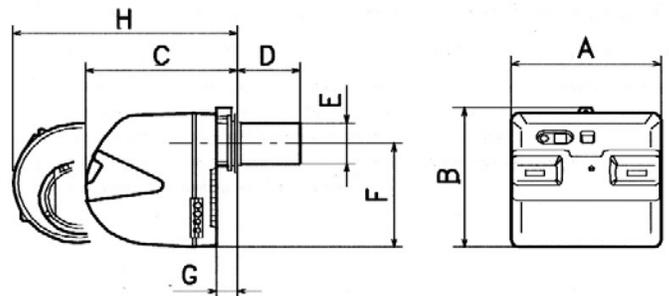
Riello burner

Models **F & RL** Flame retention burner for light oil firing

Model F10 - F20



Model RL 28 - 38



Dimensions (inches)

Burner model number	A	B	C	D	E	F*	Approximate shipping weight
F10	10.31	12.00	8.03	3.94	5.00	12.44	37
F15	11.75	13.78	9.06	4.69	5.00	14.22	42
F20	11.75	13.78	9.06	4.69	5.00	14.22	44

* For total distance to front of boiler add for burner mounting plate spacer:
 F10: 2.00"
 F15, F20: 2.38"

Dimensions (inches)

Burner model number	A	B	C*	D	E	F	G	H*	Approximate shipping weight
RL28/2	18.75	18.75	18.44	8.50	5.50	13.88	2.13	26.50	80
RL38/2	18.75	18.75	18.44	8.50	5.50	13.88	2.13	26.50	84
RL28/M	18.75	18.75	18.44	9.50	5.50	13.88	2.13	26.50	86
RL38/M	18.75	18.75	18.44	9.50	5.50	13.88	2.13	26.50	90

* For total distance to front of boiler add 5.75" for burner mounting plate spacer.



Boiler model number	Burner Input	Positive pressure in firebox In. w.c.	Standard burner model designation			Standard combustion control		Standard control system		Burner motor H.P.		Standard motor voltage	
	No. 2 oil GPH		On-Off	LHL	MOD	On-Off	LHL/MOD	On-Off	LHL/MOD	On-Off	LHL/MOD	On-Off	LHL/MOD
380	2.40	0.28	F10	–		530 SE/C	–	OO	–	1/8	–	120/60/1	–
480	3.40	0.28	F15	–		530 SE/C	–	OO	–	1/8	–	120/60/1	–
580	4.45	0.28	F15	–		530 SE/C	–	OO	–	1/8	–	120/60/1	–
680	5.50	0.27	F20	–		530 SE/C	–	LFS	–	1/8	–	120/60/1	–
780	6.50	0.27	–	RS28/2	RS28/M	–	LAL 2.25	–	LHL/MOD	–	1/2	–	120/60/1
880	7.50	0.27	–	RS28/2	RS28/M	–	LAL 2.25	–	LHL/MOD	–	1/2	–	120/60/1
980	8.50	0.27	–	RS28/2	RS28/M	–	LAL 2.25	–	LHL/MOD	–	1/2	–	120/60/1
1080	9.60	0.26	–	RS38/2	RS38/M	–	LAL 2.25	–	LHL/MOD	–	1/2 or 3/4	–	120/60/1 or 3 phase*
1180	10.60	0.26	–	RS38/2	RS38/M	–	LAL 2.25	–	LHL/MOD	–	1/2 or 3/4	–	120/60/1 or 3 phase*
1280	11.60	0.26	–	RS38/2	RS38/M	–	LAL 2.25	–	LHL/MOD	–	1/2 or 3/4	–	120/60/1 or 3 phase*

* 208/60/3, 240/60/3, 480/60/3, 575/60/3 burner motor voltage must be specified

- Notes**
- 1 Burner capacities listed for elevations up to 2,000 feet. For higher elevations, contact local Weil-McLain distributor/agent or sales office.
 - 2 Light oil based on No. 2 fuel oil with heating value of 140,000 Btu per gallon
 - 3 Boiler-burner unit to be adjusted to achieve +0.10 inches W.C. pressure at flue collar, resulting in positive pressure in firebox as listed.
 - 4 All settings and pressures shown are for initial start-up. Final values should be confirmed with combustion analysis.
 - 5 Light Oil Control Systems:
 - OO: On - Off operation. Single-position air damper.
 - LFS: On-off operation, low fire start, high fire run. Two position air, two position oil.
 - LHL: Low-high-low-off firing conditions – two position air & fuel controlled by separate motor, open damper pre-purge.
 - MOD: On-off operation with proven low fire start and full modulating firing conditions. Proportional motor drives fuel metering valve and combustion air damper according to firing conditions, open damper pre-purge.
 - 6 120/60/1 control circuit is used for all burners
 - 7 All 3 phase models require a separate 120/60/1 control voltage supply.
 - 8 Two stage units require a single SPDT controller for LHL firing rate operation.
 - 9 Models 780 through 1280 require a 120v bumping type signal or PID control type for modulation.
 - 10 Models 780 through 1280 include a motor relay or contactor
 - 11 Combustion Controls:
 - Riello model 530 SE/C electro-mechanical combination flame safeguard control/ignition transformer monitors the oil burner flame with cad-cell, provides interrupted ignition and pre-purge. Post purge relay option available upon request.
 - Siemens LAL 2.25 flame safeguard control monitors the oil burner flame with visual diagnostic window, provides pre-purge and post purge, provides switching necessary to allow firing rate motor to be driven to both low fire and high fire positions, prevent start up if pre-ignition interlocks are open and has low fire start proven circuit. In the event pre-ignition interlock circuit or running interlock circuit does not “prove”, system will lock out on safety. Infra red detector is standard.
 - 12 Other flame safeguards make and models available upon request on models 780 through 1280.
 - 13 Burners will be completely assembled and wired and factory tested fired.
 - 14 R Series Burners listed by Underwriters Laboratories, Inc. for the US and Canada, Fire Marshall Commonwealth of Massachusetts, City of New York MEA and others.
 - 15 40 Series F Burners listed by Underwriters Laboratories, Inc. for the US, Fire Marshall Commonwealth of Massachusetts, City of New York MEA, CSA and others.
 - 16 Special controls can be provided to meet other code requirements not listed. Consult local Weil-McLain distributor/agent or sales offices.
 - 17 All models will be provided with direct spark ignition. Electric gas pilot is not available.
 - 18 40 Series F burner motors run at 3250 RPM. R Series burner motors run at 3400 RPM.
 - 19 Combustion air damper position indicator reads 0-90° on RL28-38 and is found internally.
 - 20 On all modulating units air settings adjusted on cam profile.

Burner Specification and Data Sheet



Burner Specifications and Data Sheet – On-Off & Low Fire Start

Boiler model number	Burner model number	Combustion head setting	Combustion air settings		Oil nozzles					Oil pressures PSIG	Fuel unit direct coupled	
			Low fire	High fire	Qty	GPH @ 100 PSIG	Brand	Type	Spray angle	Supply	Type	Gear GPH
380	F10	4.0	—	4.0	1	2.00	Delavan	B	60°	145	RBL 6007	15
480	F15	2.0	—	3.0	1	2.50	Delavan	B	60°	185	RBL 6007	15
580	F15	3.0	—	4.0	1	3.50	Delavan	B	60°	160	RBL 6007	15
680	F20	3.0	3.0	5.0	1	4.00	Delavan	B	60°	105 - 190	RBL 6030	15

Burner Specifications and Data Sheet – 2 Stage

Boiler model number	Burner model number	Combustion head setting	Combustion air settings		Oil nozzles					Oil pressures PSIG	Fuel unit direct coupled	
			Low fire	High fire	Qty	GPH @ 100 PSIG	Brand	Type	Spray angle	Supply	Type	Gear GPH
780	RL28/2	3.0	35	70	1 1	3.00 2.00	Delavan	B	30° 90°	175	AL 65 C	22
880	RL28/2	5.0	40	80	1 1	3.00 2.75	Delavan	B	30° 90°	175	AL 65 C	22
980	RL28/2	3.0	35	70	1 1	3.50 3.00	Delavan	B	30° 90°	175	AL 65 C	22
1080	RL38/2	5.0	40	80	1 1	4.00 3.25	Delavan	B	30° 90°	175	AL 65 C	22
1180	RL38/2	6.0	30	60	1 1	4.00 4.00	Delavan	B	30° 90°	175	AL 65 C	22
1280	RL38/2	6.0	35	70	1 1	4.50 4.50	Delavan	B	30° 90°	175	AL 65 C	22

Burner Specifications and Data Sheet – Full Modulation

Boiler model number	Burner model number	Combustion head indications	Combustion air indications		Servo motor cam positions fuel settings			Oil nozzles					Oil pressures PSIG		Fuel unit direct coupled		
			Low fire	High fire	Blue	Orange	Red	Qty	GPH @ 100 PSIG	Brand	Type	Spray angle	Supply	Return		Suntec type	Gear GPH
														Low fire	High fire		
780	RL28/M	3.0	20	70	0	15	90	1	4.00	Hago	BPS	45°	300	70-100	180	AL 95 C	32
880	RL28/M	5.0	25	80	0	15	90	1	5.00	Hago	BPS	45°	300	70-100	180	AL 95 C	32
990	RL28/M	6.0	20	70	0	15	90	1	5.50	Hago	BPS	45°	300	70-100	180	AL 95 C	32
1080	RL38/M	4.0	25	80	0	15	90	1	6.00	Hago	BPS	45°	300	70-100	180	AL 95 C	32
1180	RL38/M	5.0	20	60	0	15	90	1	6.50	Hago	BPS	45°	300	70-100	180	AL 95 C	32
1280	RL38/M	6.0	25	70	0	15	90	1	8.00	Hago	BPS	45°	300	70-100	180	AL 95 C	32

Flame Safeguards Provided with Listed Control Systems by Code

Boiler model number	UL		FM		CSD-1		IRI		CSA	
	00	LHL/MOD	00	LHL/MOD	00	LHL/MOD	00	LHL/MOD	00	LHL/MOD
380 - 680	530 SE/C	—	—	—	530 SE/C	—	—	—	530 SE/C	—
780 - 1280	—	LAL 2.25	—	LAL 2.25	—	LAL 2.25	—	LAL 2.25	—	—



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