

TORUS 650 DUAL FUEL

Category II or Category IV Appliance

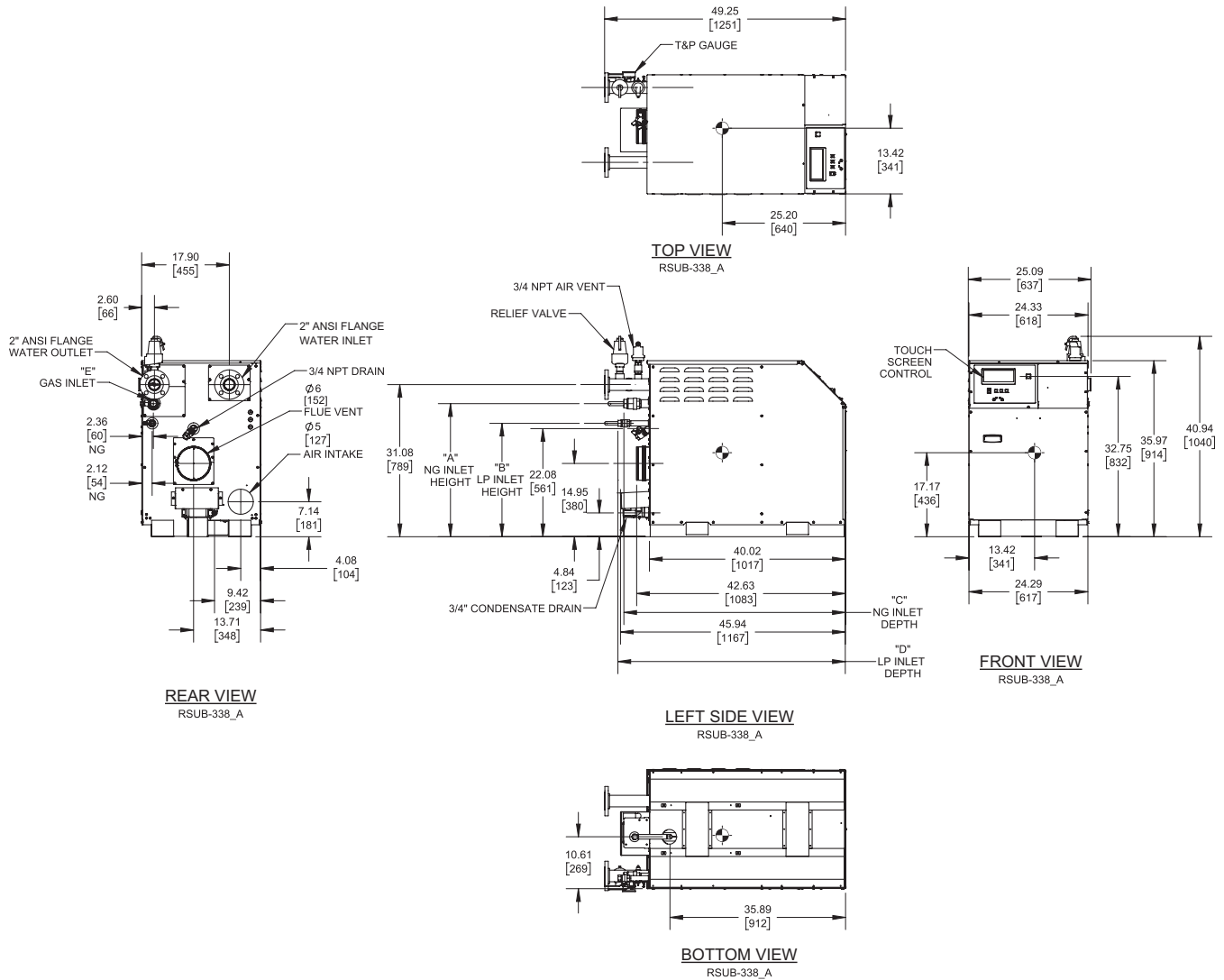
(see Installation and Operation Manual for venting information)

CODE OPTIONS


CSD-1

FIRMWARE W/REMOTE
TEST MANUAL RESET LWCO
High and Low Gas Pressure Switches

INDOOR UNIT



Notes:

1. Dimensions are approximate and should not be used to "rough-in" equipment.
2. Dimensions are subject to change without notice.
3. All dimensions are in inches (mm).
4.  Symbol indicates center of gravity.

GAS OPTION	"A"	"B"	"C"	"D"	"E"
NG	27.17 in / 690.12 mm	-	45.25 in / 1149.3 mm	-	1 1/4 NPT
LP	-	23.16 in / 588.26 mm	-	46.46 in / 1180.1 mm	3/4 NPT

BOILER CERTIFIED RATINGS & CAPACITIES

Fuel Type	Natural/Propane Gas	Boiler FLA	12.0*
Input BTU/hr.	650,000 / 190.49 kW	Boiler HP	18.70
Output BTU/hr.	625,950 / 183.45 kW	Min. Gas Pressure Required	4"W.C.
Electrical Requirements	120 VAC/60 Hz/1PH	Max. Gas Pressure Allowed	14" W.C.
		Operating Weight	499.54 lbs / 226.59 kg

BOILER TRIM & CONTROLS

Main Gas Valve	Dungs MBC	Air Switch	Huba
Firing Valve	Apollo	Flow Switch	SIKA
Ignition Control	Fenwal	Blocked Flue Switch	Cleveland NS2
Operating Control	HeatNet®	Blower Motor	Ametek
High Limit	Jumo	L.W.C.O.	800
Main Ball Valve	Apollo	Relief Valve (WB)	3/4" x 3/4" set @ 50 psi
Pump contactor strongly recommended for water heater applications.		Relief Valve (WW)	1" x 1" set @ 125 psi

A.S.M.E.

ASME Sect IV Fire Side	52.2 Sq. Ft. / 4.85 Sq. M.	Design Data	Max. 160 psig & 210°F
Htg Surface		Water Volume	5.6 gal. / 21.19 Liters
ASME Sect IV Water Side	47.25 Sq. Ft. / 4.39 Sq. M.	pH Level	6.5-8.5
Htg Surface			

* Add circulator amps.

BOILER TEMPERATURE RISE / PRESSURE DROP (Based on Full Input)

20°F / 11.1°C				30°F / 16.7°C				40°F / 22.2°C			
Flow Rate		Pressure Drop		Flow Rate		Pressure Drop		Flow Rate		Pressure Drop	
GPM	L/s	Ft	kPa	GPM	L/s	Ft	kPa	GPM	L/s	Ft	kPa
62.6	4.0	12.2	36.3	41.7	2.6	5.4	16.2	31.3	2.0	3.1	9.2
Flow GPM (Boiler)		Temp. Rise (°F) (Boiler**)		Vent Length (Equiv. Ft.)		Air Inlet Length (Equiv. Ft.)					
Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
31.3	62.6	20	40	6	100	0	100				

** Min/Max delta t reflects boiler operation at full input. For applications requiring operation above/below these parameters please consult factory.

WATER HEATER HOURLY RECOVERY CAPACITY (GPH & LPH)

40°F	22°C	60°F	33°C	80°F	44°C	100°F	56°C	120°F	67°C	140°F	78°C
1892	7153	1262	4768	946	3576	757	2861	631	2384	541	2044

Water Heater Min Flow Rates

Normal (4 to 12) gpg				Hard (12 to 15) gpg			
Flow Rate		Pressure Drop		Flow Rate		Pressure Drop	
gpm	L/s	Ft	kPa	gpm	L/s	Ft	kPa
48.7	3.1	7.4	22.0	65.0	4.1	13.1	39.2

REP FIRM _____
SUBMITTED BY _____
JOB NAME _____
ARCHITECT _____
ENGINEER _____
CONTRACTOR _____
DATE _____

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(see Installation and Operation Manual for venting information)



A Division of Mestek, Inc.
Westfield, MA 01085
(833) 265-5371

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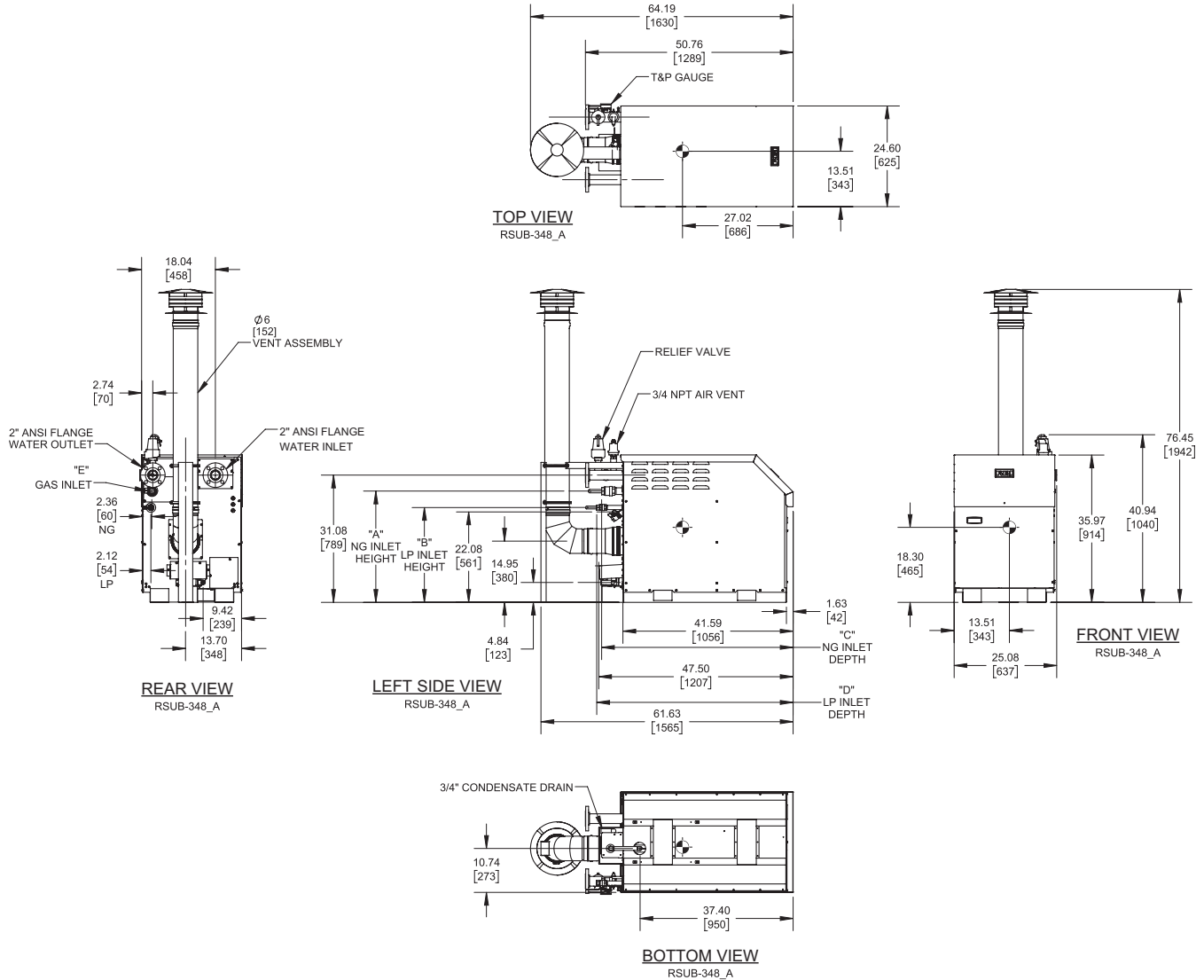
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NG	27.17 in / 690.12 mm	-	46.81 in / 1189.0 mm	-	1 1/4 NPT
LP	-	23.16 in / 588.26 mm	-	50.00 in / 1270.0 mm	3/4 NPT

BOILER CERTIFIED RATINGS & CAPACITIES

Fuel Type	Natural/Propane Gas	Boiler FLA	12.0*
Input BTU/hr.	650,000 / 190.49 kW	Boiler HP	18.70
Output BTU/hr.	625,950 / 183.45 kW	Min. Gas Pressure Required	4"W.C.
Electrical Requirements	120 VAC/60 Hz/1PH	Max. Gas Pressure Allowed	14" W.C.
		Operating Weight	530.99 lbs / 240.85 kg

BOILER TRIM & CONTROLS

Main Gas Valve	Dungs MBC	Air Switch	Huba
Firing Valve	Apollo	Flow Switch	SIKA
Ignition Control	Fenwal	Blocked Flue Switch	Cleveland NS2
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Flow GPM (Boiler)		Temp. Rise (°F) (Boiler**)		Vent Length (Equiv. Ft.)		Air Inlet Length (Equiv. Ft.)	
Min	Max	Min	Max	Min	Max	Min	Max
31.3	62.6	20	40	Factory Supplied		0	

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REP FIRM	_____	TORUS 650 DUAL FUEL
SUBMITTED BY	_____	
JOB NAME	_____	
ARCHITECT	_____	
ENGINEER	_____	
CONTRACTOR	_____	
DATE	_____	Category II or Category IV Appliance (see Installation and Operation Manual for venting information)
		 A Division of Mestek, Inc. Westfield, MA 01085 (833) 265-5371