

UniTemp 80

Apartments, condominiums,
hotels, motels - 10 to 400 units

Guaranteed 80% draw without
temperature drop

Low operating cost

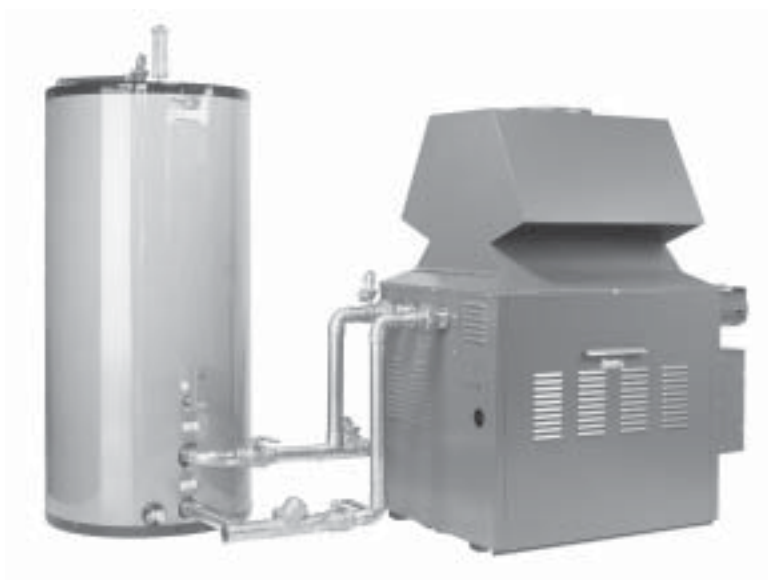
Easy maintenance

Indoor or outdoor
installation

24 VAC control

Exceeds ASHRAE 90-80A and
California Title 24 standards

Economaster II energy-saving
pump control



The Raypak UniTemp 80 is an economical water heater-tank system designed to supply 140°F hot water in residential buildings of 10-400 units. The UniTemp 80 system couples a Raytherm atmospheric water heater with an appropriately sized storage tank to create a system which guarantees 80% draw without a drop in temperature.

The key to the UniTemp 80's effectiveness is the water heater. The Raytherm water heater is 82% efficient— the highest rating for atmospheric water heaters. Its copper fin tube heat exchanger and bronze headers virtually eliminate corrosion and scale build-up. A standard Economaster II control regulates pump operation, shutting down the water heater when there is no demand. This eliminates standby stack losses, saves fuel, and prolongs the life of the water heater.

In the UniTemp 80 concept, the water heater and storage tank are separate, so the tank is not subject to scaling from direct firing. This separation also simplifies and reduces the cost of maintenance, since the heat exchanger, controls, and tank are readily accessible and individually replaceable.

Compact and lightweight, Raytherm water heaters can fit into tight spaces, and are light enough for rooftop or penthouse installations. Except for the largest units (2.1 to 4 million BTUH input), all models are available for indoor or outdoor installation.

Raypak[®]
A Rheem[®] Company

UniTemp 80 for Apartments and Condominiums.

WATER HEATER-STORAGE TANK COMBINATIONS FOR 40°, 60°F MAKEUP WATER

NUMBER OF UNITS	1-2 BEDROOMS, 1 BATH					2-3 BEDROOMS, 2 BATHS				
	100°F RISE		80°F RISE		TANK CAPACITY	100°F RISE		80°F RISE		TANK CAPACITY
	INDOOR WATER HEATER	OUTDOOR WATER HEATER	INDOOR WATER HEATER	OUTDOOR WATER HEATER		INDOOR WATER HEATER	OUTDOOR WATER HEATER	INDOOR WATER HEATER	OUTDOOR WATER HEATER	
10	133	133	133	133	80	182/181	182/181	133	133	80
15	133	133	133	133	80	260/261	260/261	182/181	182/181	80
20	182/181	182/181	182/181	133	80	330/331	330/331	260/261	260/261	115
25	260/261	260/261	182/181	182/181	80	400/401	400/401	260/261	260/261	115
30	260/261	260/261	182/181	182/181	115	514	514	330/331	330/331	175
35	330/331	330/331	260/261	260/261	115	624	624	400/401	400/401	175
40	330/331	330/331	260/261	260/261	115	624	624	514	514	235
45	400/401	400/401	260/261	260/261	175	724	724	514	514	235
50	514	514	330/331	330/331	175	824	824	514	514	235
55	514	514	330/331	330/331	175	824	824	624	624	235
60	514	514	330/331	330/331	175	962	926	624	624	335
65	624	624	400/401	400/401	235	962	1083	724	724	335
70	624	624	400/401	400/401	235	1125	1083	724	724	335
75	624	624	514	514	235	1125	1083	724	724	379
80	624	624	514	514	261/275	1223	1178	824	824	379/335
85	724	724	514	514	235/189	1223	1287	824	824	524/379
90	724	724	514	514	235/189	1336	1287	962	926	390/524
95	724	724	514	514	335/235	1336	1414	962	926	524/390
100	824	824	624	624	261/235	1468	1414	962	926	524/390
110	824	824	624	624	335/235	1631	1571	1125	1083	524/390
120	962	926	624	624	335/261	1631	1758	1125	1178	606/524
130	962	1083	724	724	335/261	1826	1758	1223	1178	534
140	1125	1083	724	724	335	1826	1758	1336	1287	712/534
150	1125	1083	824	824	379/335	2100	2/1083	1336	1414	606
160	1223	1178	824	824	379/335	2100	2/1083	1468	1571	712/534
170	1223	1178	824	824	534/379	2500	2/1083	1468	1571	712
180	1336	1287	962	926	390/335	2500	2/1178	1631	1571	712/606
190	1336	1414	962	926	534/379	2500	2/1178	1631	1758	712
200	1468	1414	962	926	534	2500	2/1287	1826	1758	922/712
210	1468	1414	962	1083	534/379	3001	2/1287	1826	1758	922/712
220	1468	1571	1125	1083	534/390	3001	2/1414	1826	2/926	803/712
230	1631	1571	1125	1083	534/390	3001	2/1414	1826	2/926	806/922
240	1631	1571	1125	1083	534/390	3001	2/1414	2100	2/1083	922/712
250	1631	1758	1125	1083	534	3001	2/1571	2100	2/1083	922/712
260	1631	1758	1125	1178	606/534	3001	2/1571	2100	2/1083	1017/803
270	1826	1758	1125	1178	534	3001	2/1571	2100	2/1083	1164/922
280	1826	1758	1223	1178	534	3500	2/1571	2100	2/1083	922/1017
290	1826	1758	1223	1178	534	3500	2/1571	2500	2/1083	1017/803
300	1826	1758	1223	1287	606/534	3500	2/1758	2500	2/1083	1017/922
325	2100	2/926	1336	1287	606/534	3500	2/1758	2500	2/1178	1164/922
350	2100	2/1083	1336	1414	606	3500	2/1758	2500	2/1178	1260/922
400	2100	2/1083	1468	1414	712/534	4001	3/1278	2500	2/1287	1164

NOTE: Water heater size recommendations include 2-1/2 GPM draw for each shower head and allowance for residential dishwashers and individual laundry room equipment.

UniTemp 80 for Motels and Hotels.

WATER HEATER-STORAGE TANK COMBINATIONS FOR 40°, 60°F MAKEUP WATER

Table includes allowance for a maximum draw of 2-1/2 GPM per shower head.

NUMBER OF UNITS	1-2 BEDROOM 1 BATH				TANK CAPACITY
	100°F RISE		80°F RISE		
	INDOOR WATER HEATER	OUTDOOR WATER HEATER	INDOOR WATER HEATER	OUTDOOR WATER HEATER	
10	133	133	133	133	80
15	133	133	133	133	80
20	180/181	180/181	133	133	80
25	260/261	260/261	181/182	181/182	80
30	260/261	260/261	181/182	181/182	115/80
35	330/331	330/331	260/261	260/261	115/80
40	330/331	330/331	260/261	260/261	115/80
45	400/401	400/401	260/261	260/261	115
50	514	514	330/331	330/331	139/115
55	514	514	330/331	330/331	175/139
60	514	514	330/331	330/331	175
65	624	624	400/401	400/401	175
70	624	624	400/401	400/401	1189/175
75	624	624	514	514	235/175
80	624	624	514	514	261/175
85	724	724	514	514	235/189
90	724	724	514	514	235/189
95	724	724	514	514	335/235
100	824	824	624	624	261/235
110	824	824	624	624	335/235
120	962	926	624	624	335/261
130	962	1083	724	724	374/261
140	1125	1083	724	724	335
150	1125	1083	824	824	379/335
160	1223	1178	824	824	379/335
170	1223	1287	824	824	534/379
180	1336	1287	962	926	390/335
190	1336	1414	962	926	535/379
200	1468	1414	962	926	535/379

STANDARD EQUIPMENT

- All copper and bronze heat exchanger
- 24 VAC combination gas valve/pressure regulator (Models 133 to 2500)
- 100% pilot safety
- Automatic high limit tankstat
- Temperature/pressure gauge
- 125 psi ASME pressure relief valve
- 115V/24 VAC transformer
- Electronic intermittent pilot ignition (Models 133-4001)
- Flow switch (except Model 133)
- Economaster II pump control

OPTIONAL EQUIPMENT

- Cast iron headers (Models 181 to 4001)
- Temperature and pressure valve for storage tank
- Thermometer for storage tank

HOW TO USE THE TABLES

Apartment / Condominium

If building contains a mix of 1-bath and 2-bath units, consider all units as 2-bath when selecting water heater/tank combination.

If number of units falls between numbers shown on table, always use the larger number for sizing.

Example:

A 92-unit apartment building has:

1-bath units: 60
 2-bath units: 32
 Total Units: 92

Makeup water temperature is 40°F.

Consider all 92 units as 2-bath. Under the units column in the table, the closest number, not less than 92 is 95. Follow the 95 line, and under the 100°F Rise sections, read:

Storage tank size: 390 gallons

and under the 2-bath column, read:

Indoor water heater model: WH-1125

Outdoor water heater model: WH-1083

Motels / Hotels

If number of units in complex falls between the numbers shown on the table, always use the larger number for sizing.

UniTemp 80 THE COMPONENTS

RAYTHERM WATER HEATERS

Raytherm water heaters are designed for use with a storage tank. Raytherm offers superior thermal efficiency (82%), with the proven reliability and performance for which Raypak is renowned. With 32 models ranging from 136,000 to 4,000,000 BTUH input, the economy and benefit of the UniTemp 80 concept is applicable to virtually any multi-unit residential complex.



STORAGE TANKS

Raypak offers 80- and 115-gallon glass-lined, non-code tanks. ASME code tanks are available in all sizes with glass, phenolic or cement linings; galvanized or black prime coat in certain sizes. All tanks are furnished with threaded openings for thermometer, relief valve, recirculation line and tankstat. Tank return and outlet openings are available threaded or flanged to meet job requirements.



ECONOMASTER II ENERGY-SAVING PUMP CONTROL

A standard accessory to the water heater in a UniTemp 80 installation, the Raypak Economaster II control automatically senses the residual heat in the water heater, keeps the pump running until all the useable heat has been absorbed and stored in the tank, then shuts off the pump until the next call-for-heat. Economaster II is a true energy-saver: flue losses are minimized and electricity is saved because the pump does not run constantly. Economaster II is factory-installed.

PIPING

All piping between water heater and tank is to be supplied by the installer. Refer to the piping schematic for location and description of unions, valves and pumps.

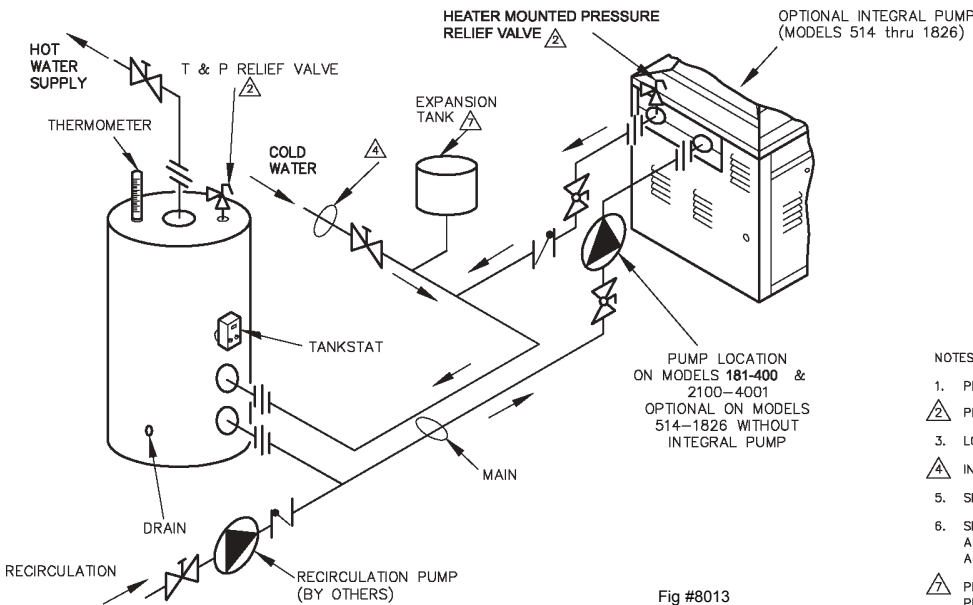


Fig #8013

	MINIMUM PIPE SIZES	
	BRANCH	MAIN
133	1"	1-1/4"
181-400	1-1/4"	1-1/2"
514-824	1-1/2"	2"
926-1826	2"	2-1/2"
2100-4001	2-1/2"	3"

NOTES:

1. PLUMB SWING CHECK VALVE IN GRAVITY CLOSED POSITION.
2. PIPE ALL RELIEF VALVES TO DRAIN, OR AS LOCAL CODES REQUIRE.
3. LOCATE TEE AS CLOSE AS POSSIBLE TO TANK.
4. INSTALL COLD WATER BETWEEN HEATER OUTLET AND TANK.
5. SEE CHART "MINIMUM PIPE SIZES" FOR MINIMUM PIPE SIZES.
6. SIZING BASED ON HEATER AND TANK BEING PLACED FIVE FEET APART, IF DISTANCE IS GREATER, THE PUMP MUST BE SIZED TO ACCOMMODATE INCREASE IN PIPING RELATED LOSSES.
7. PROVIDE FOR THERMAL EXPANSION OF HOT WATER IF A BACKFLOW PREVENTER, CHECK VALVE, WATER METER OR PRESSURE-REDUCING VALVE IS INSTALLED IN THE COLD WATER LINE.

For more information on available options, pump sizing and controls for your particular application, contact your Raypak representative or call the factory. Raypak, Inc. reserves the right to make product changes or improvements at any time without notice.