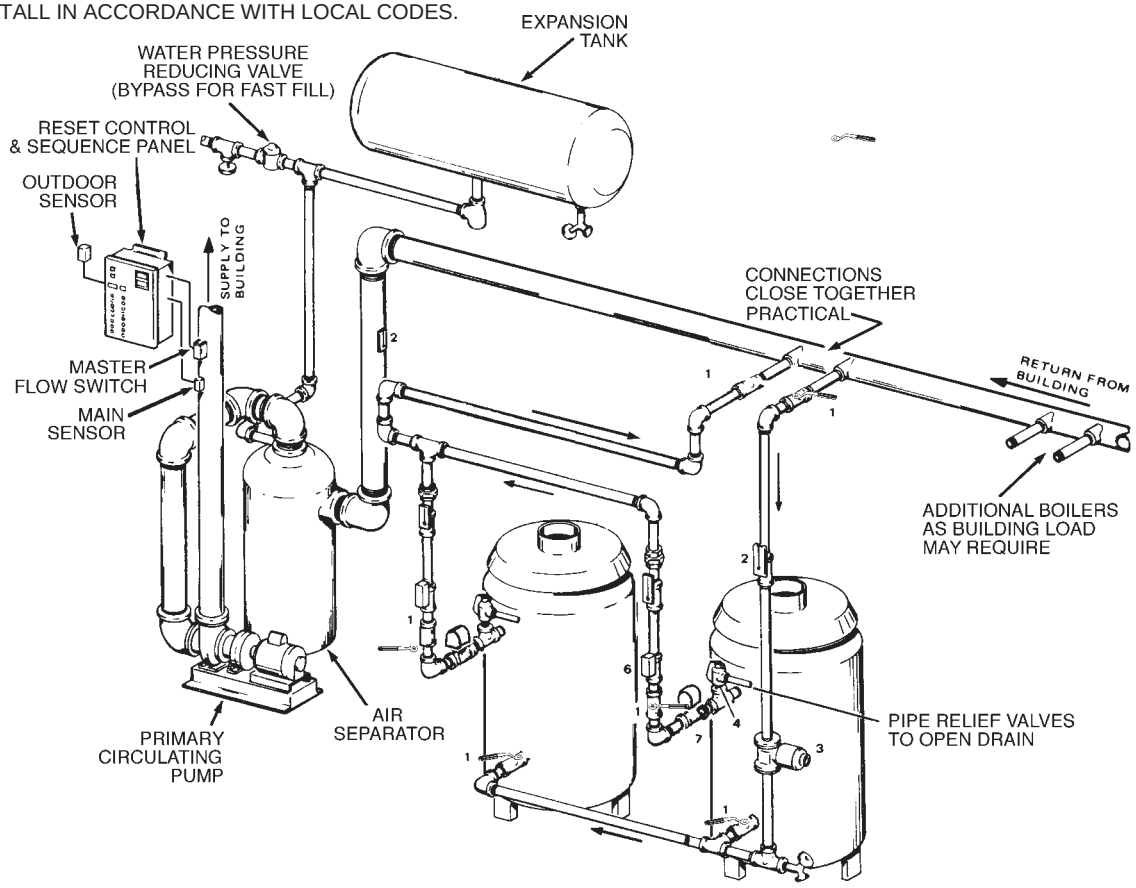
A.O. SMITH

LINEAR-TEMP* SYSTEM

300-2, 399-2, 420-2, 520-2 OR 670-2

APPLICATION TYPE DIAGRAM
SEE INSTALLATION MANUAL FOR
COMPLETE INSTRUCTIONS

INSTALL IN ACCORDANCE WITH LOCAL CODES.



SECONDARY PUMP AND PIPE SELECTION DATA FOR CONNECTIONS TO EACH PAIR OF BOILERS

Boiler Model	Temp. Rise †	Secondary Piping	Boiler Pump Selection	Boiler Inlet & Outlet
(2) HW-300	20° 30° 40°	2" 1-1/2" 1-1/4"	2" 2" SH-1	1-1/4"
(1) HW-300 with (1) HW-399 **	20° 30° 40°	2-1/2" 2" 1-1/2"	60-13 2-1/2" 2"	HW-300 1-1/4" HW-399 1-1/2"
(1) HW-300 with (1) HW-420 **	20° 30°	2-1/2" 2"	60-13" 2-1/2"	HW-300 1-1/4" HW-420 1-1/2"
(2) HW-399	20° 30° 40°	2" 2" 1-1/2"	60-14 2-1/2" 2"	1-1/2"
(2) HW-420	20° 30° 40°	2" 2" 1-1/2"	60-14 2-1/2" 2"	1-1/2"
(2) HW-520	20° 30° 40°	2-1/2" 2" 2"	60-14 2-1/2" 2"	2"
(2) HW-670	20° 30° 35° 40°	3" 2-1/2" 2-1/2" 2-1/2"	60-19 60-14 60-13 2-1/2"	2"

1. BALL VALVE
2. THERMOMETER
3. BOILER CIRCULATING PUMP
4. RELIEF VALVE
5. SAFETY LIMIT CONTROL (If Required)
6. SAFETY FLOW SWITCH

† **NOTE:** Make most economical selection of secondary pump and piping to provide a temperature rise compatible with system design temperature and highest expected boiler inlet temperature Example system design at:

220° use 20° temp. rise
210° use 30° temp. rise
200° or less use 40° temp. rise

ASSUMING THAT PRIMARY PUMPING IS SIZED FOR A 20° TEMPERATURE DROP!

Secondary flow rate should not create a temperature rise that will force boiler temperatures up to the 240° maximum setting of limit controls.

** Flow rates through unequal models must be adjusted to establish equal temperature rise.

* Trademark A.O. Smith Corporation

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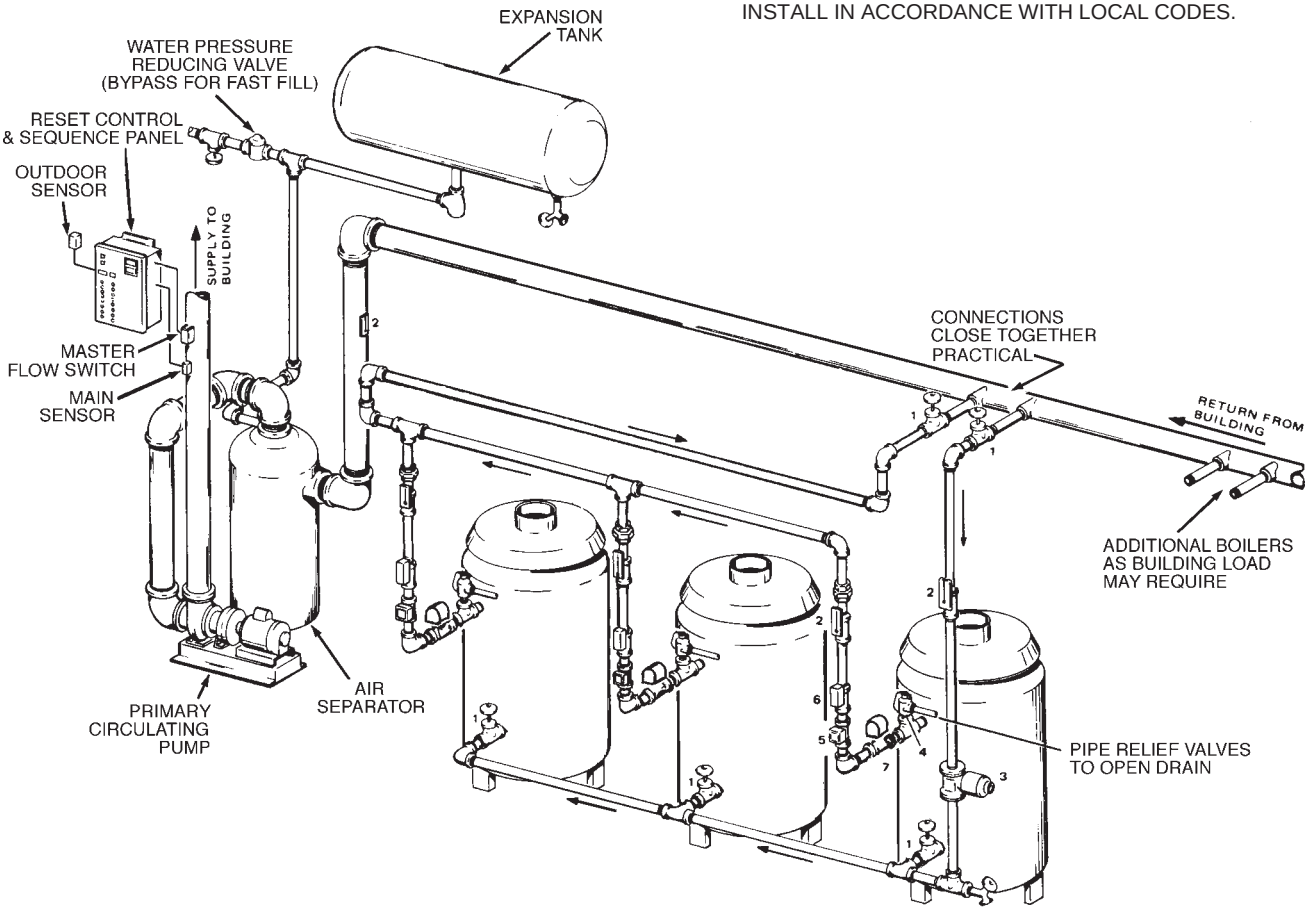

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Boiler Model	Temp. Rise	Secondary Piping	Boiler Pump Selection	Boiler Inlet & Outlet
(2) HW-399	20°	2"	60-14	1-1/2"
	30°	2"	2-1/2"	
	40°	1-1/2"	2"	
(2) HW-420	20°	2"	60-14	1-1/2"
	30°	2"	2-1/2"	
	40°	1-1/2"	2"	
(2) HW-520	20°	2-1/2"	60-14	2"
	30°	2"	2-1/2"	
	40°	2"	2"	
(2) HW-670	20°	3"	60-19	2"
	30°	2-1/2"	60-14	
	35°	2-1/2"	60-13	
	40°	2-1/2"	2-1/2"	

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