



ZONE CONTROLS WIRING GUIDE

Zone Valve Control
Switching Relay





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ZONE CONTROL PRODUCTS

Single Zone Switching Relay

<i>Product No.</i>	<i>Description</i>
SR501-5	1 Zone Switching Relay

Switching Relays – with optional communications & app control

<i>Product No.</i>	<i>Description</i>
SR502-5	2 Zone Switching Relay with Priority
SR503-5	3 Zone Switching Relay with Priority
SR504-5	4 Zone Switching Relay with Priority
SR506-5	6 Zone Switching Relay with Priority
SR502-5 with PC800-5	2 Zone Switching Relay with Priority
SR503-5 with PC800-5	3 Zone Switching Relay with Indoor & Outdoor Reset
SR504-5 with PC800-5	4 Zone Switching Relay with Indoor & Outdoor Reset
SR506-5 with PC800-5	6 Zone Switching Relay with Indoor & Outdoor Reset

Zone Valve Controls – with optional communications & app control

<i>Product No.</i>	<i>Description</i>
ZVC403-5	3 Zone Valve Control with Priority
ZVC404-5	4 Zone Valve Control with Priority
ZVC405-5	5 Zone Valve Control with Priority
ZVC406-5	6 Zone Valve Control with Priority
ZVC403-5 with PC800-5	3 Zone Valve Control with Priority
ZVC404-5 with PC800-5	4 Zone Valve Control with Indoor & Outdoor Reset
ZVC406-5 with PC800-5	6 Zone Valve Control with Indoor & Outdoor Reset

Fan Controls

<i>Product No.</i>	<i>Description</i>
HAFC201-5	Hydro Air Fan Control with Optional Time Delays

Legend

Thermostat; 568-22



Thermostat; Communicating



Thermostat; Power Stealing



Sensor; Pipe Strap-on



Sensor; Outdoor



Circulator; 00 & eSeries



Balancing Valve; TacoSetter



Mixing Valve; iSeries Mixing



Zone Valve; Zone Sentry



Zone Valve; 570 Series



Zone Valve; Motorized



Air Elimination; 4900 Air



Mag Dirt Separator; 4900 Mag



Backflow & PRV; 3450 Combo

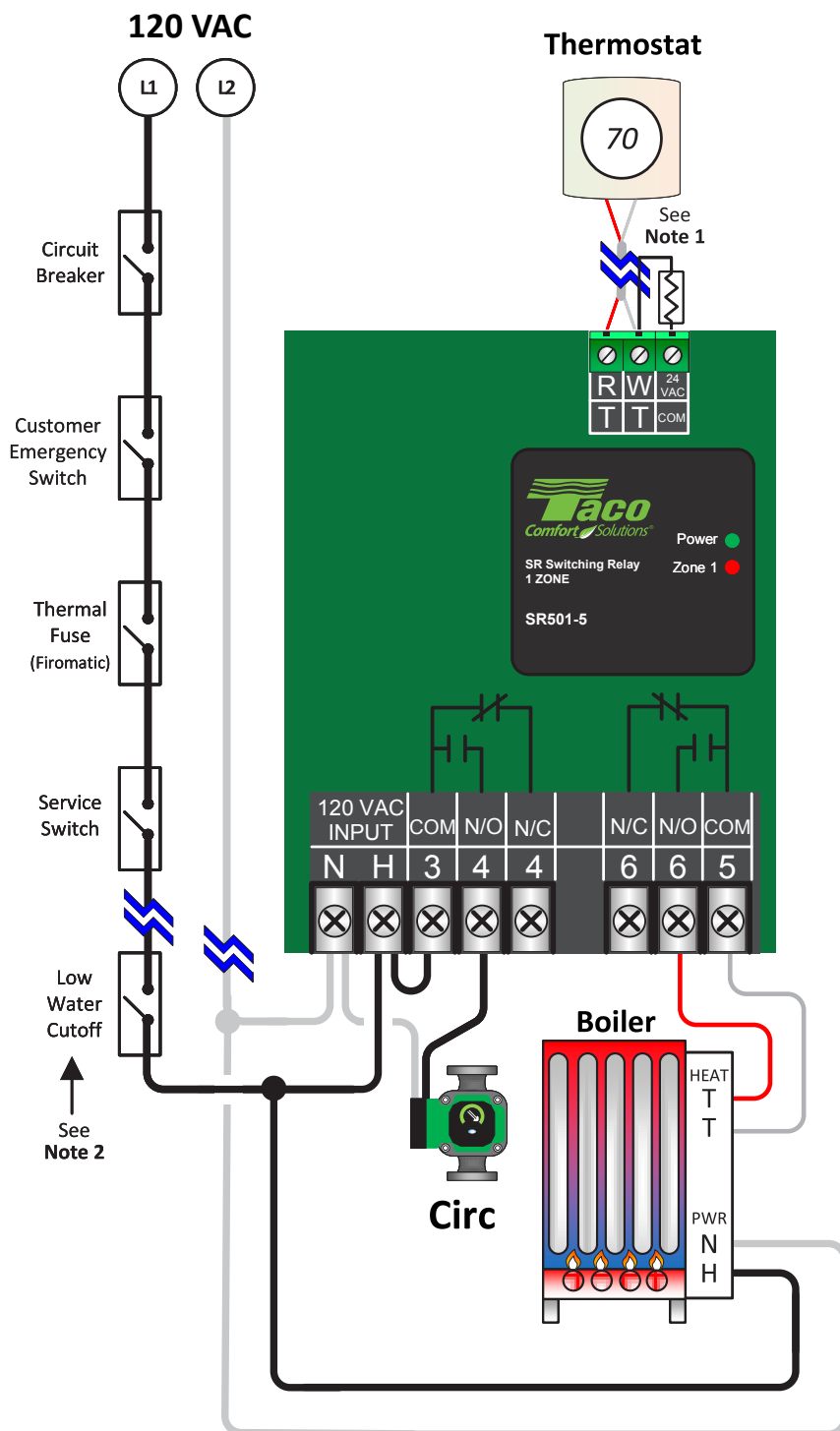




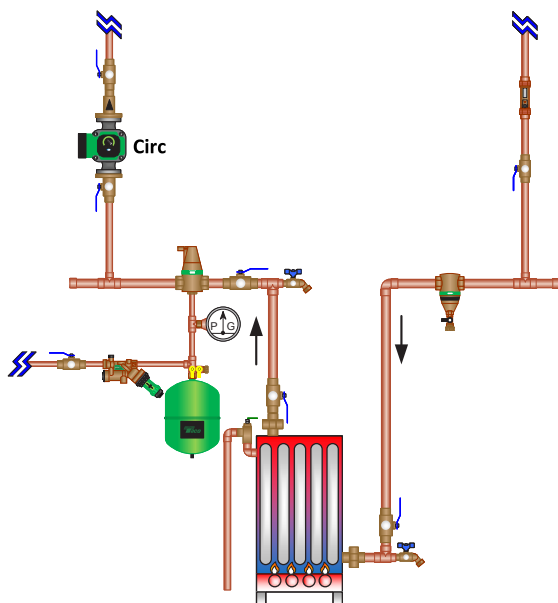
Switching Relays – Single Zone; Cold Start Application

Zoning Method	Circulators
Total Number of Zones	1
Space Heating Zones	1
Indirect Water Heater	0
Priority Zone Enabled	No
Primary Circulator	No
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	No

Electrical Diagram:



Mechanical Diagram:

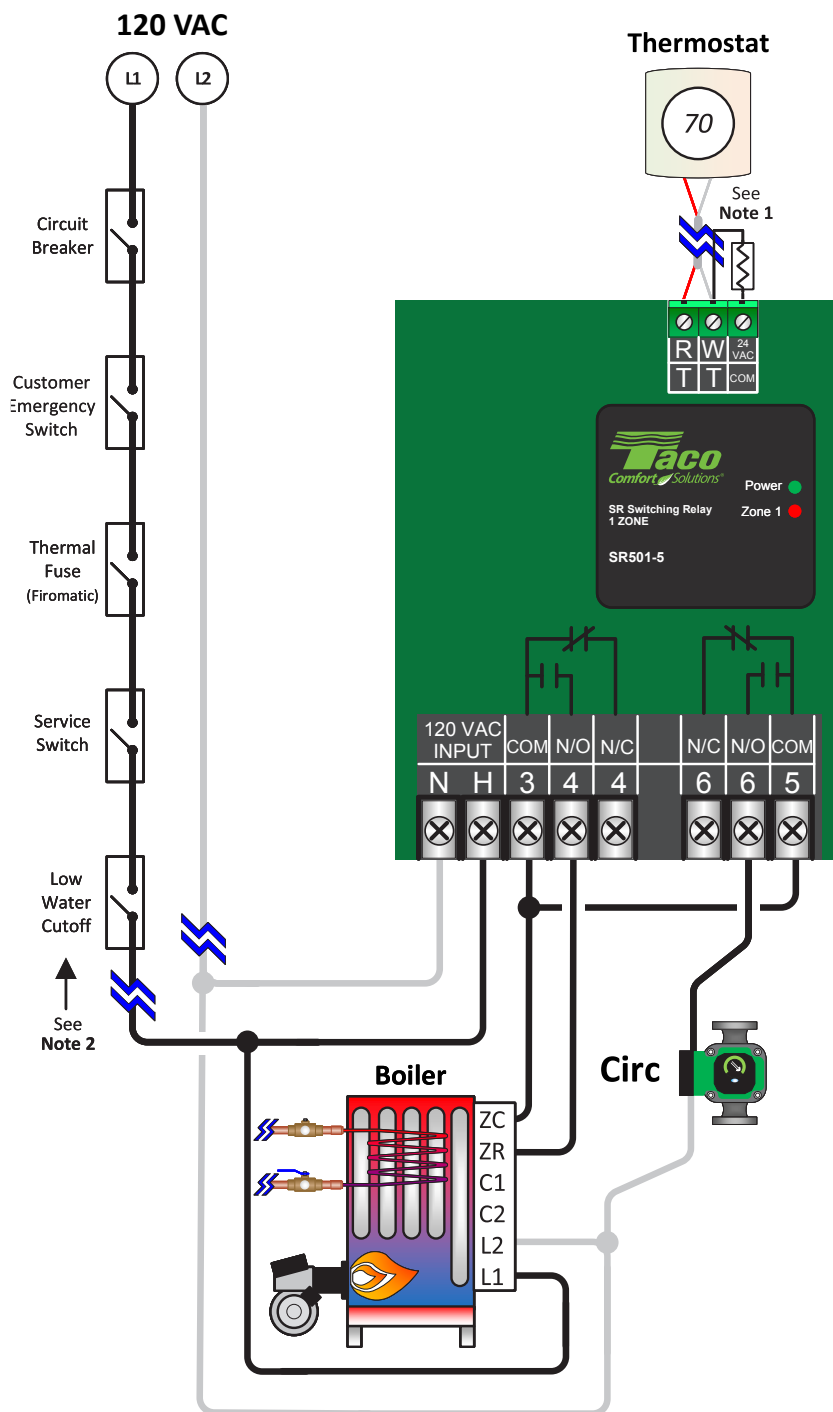




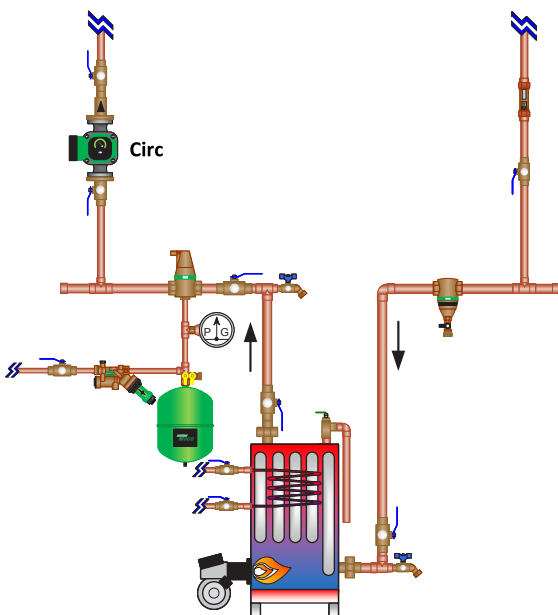
Switching Relays – Single Zone; Tankless Coil Application

Zoning Method	Circulators
Total Number of Zones	1
Space Heating Zones	1
Indirect Water Heater	0
Priority Zone Enabled	No
Primary Circulator	No
ZC and ZR Enabled	Yes
Single or Multi-Temperature	1
Special Functions Enabled	No

Electrical Diagram:



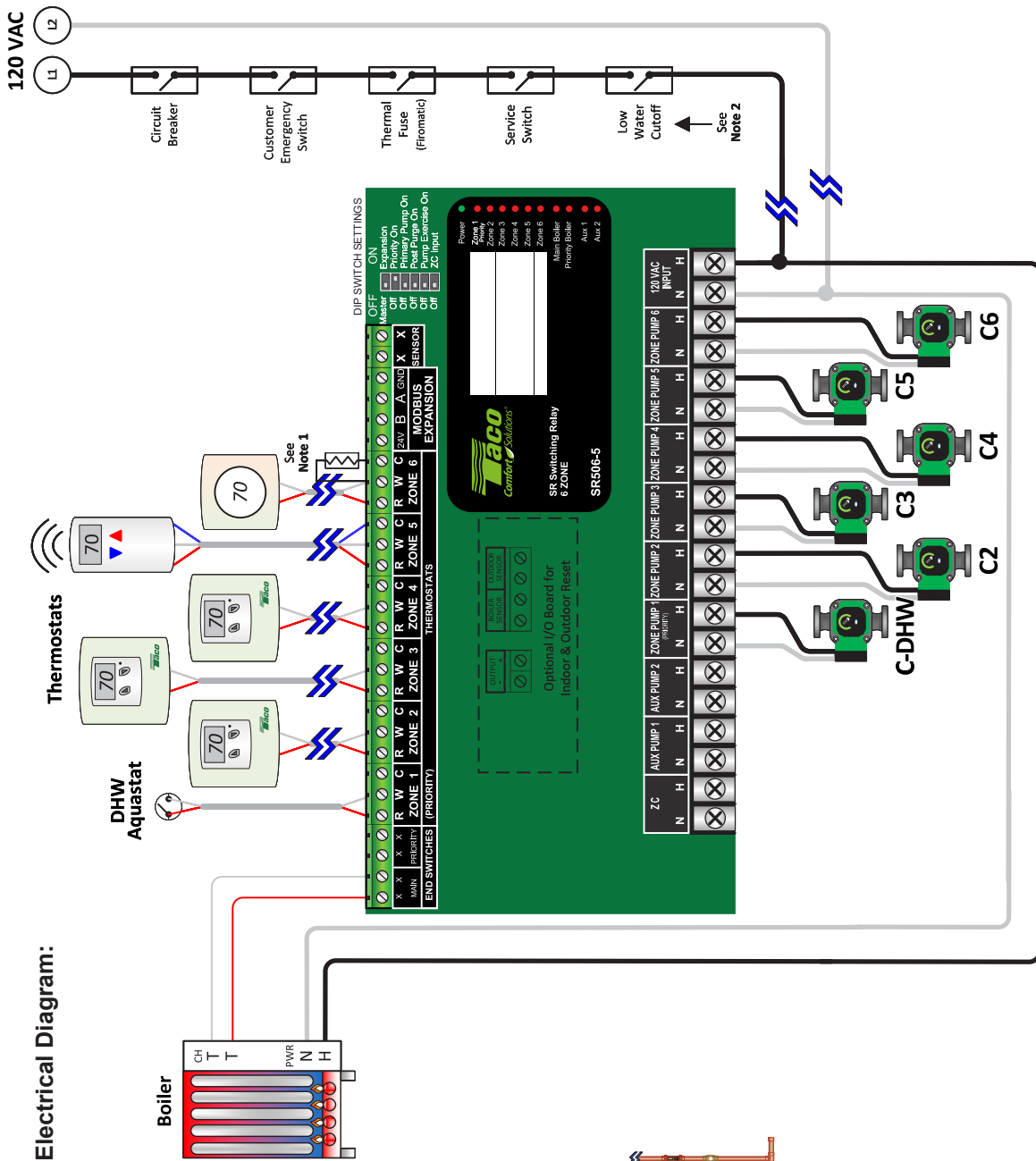
Mechanical Diagram:



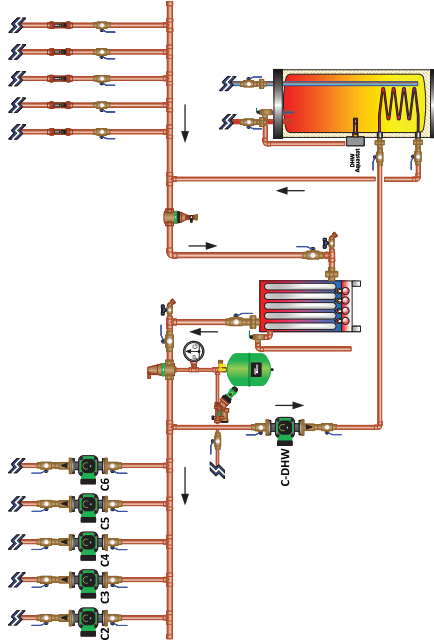
Switching Relay – Single Zone Panel Application; On/Off Boiler

Zoning Method	Circulators
Total Number of Zones	6
Space Heating Zones	5
Indirect Water Heater	1
Priority Zone Enabled	Yes
Primary Circulator	No
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	No

Electrical Diagram:



Mechanical Diagram:



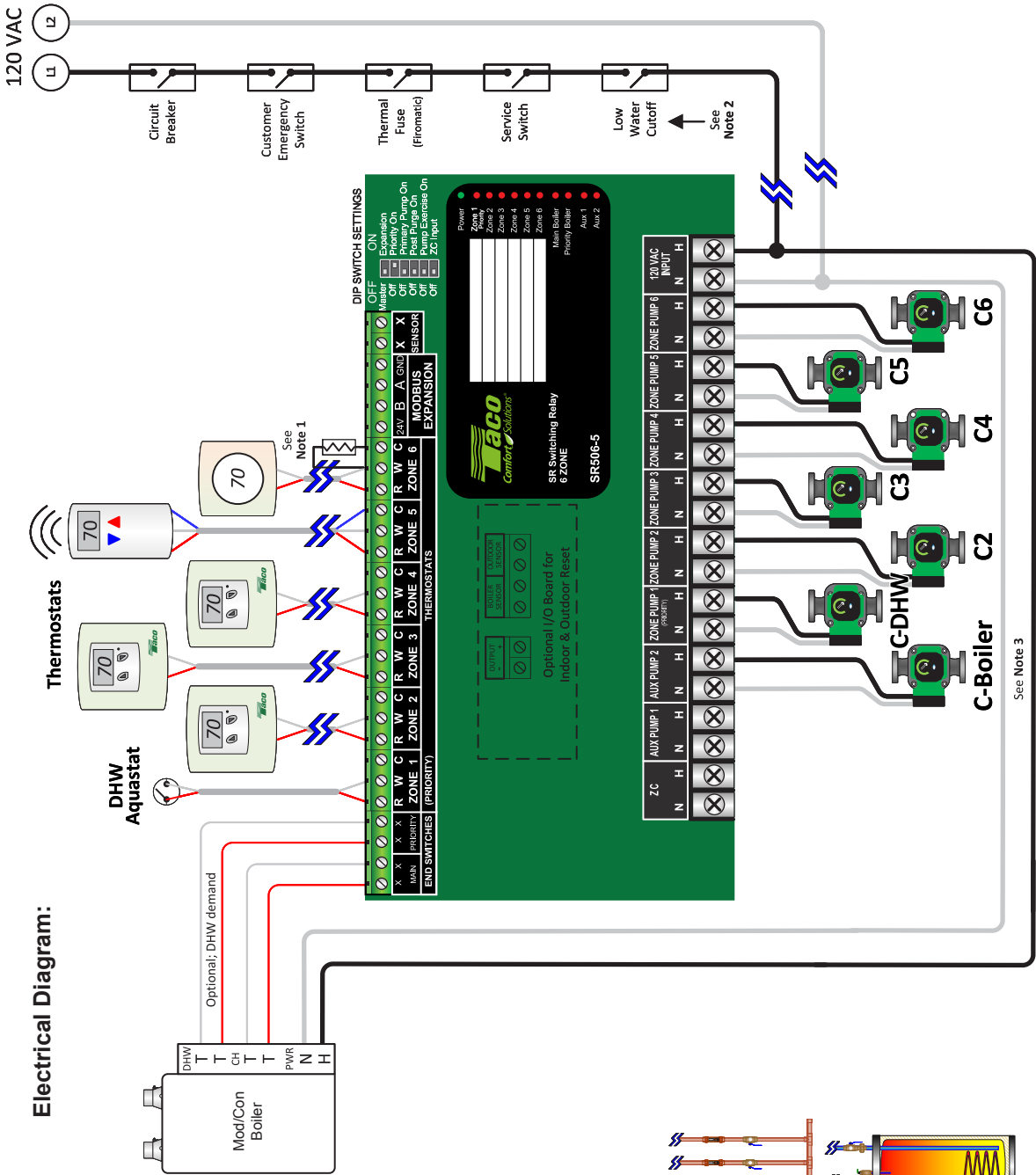
Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.
Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.
 Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.



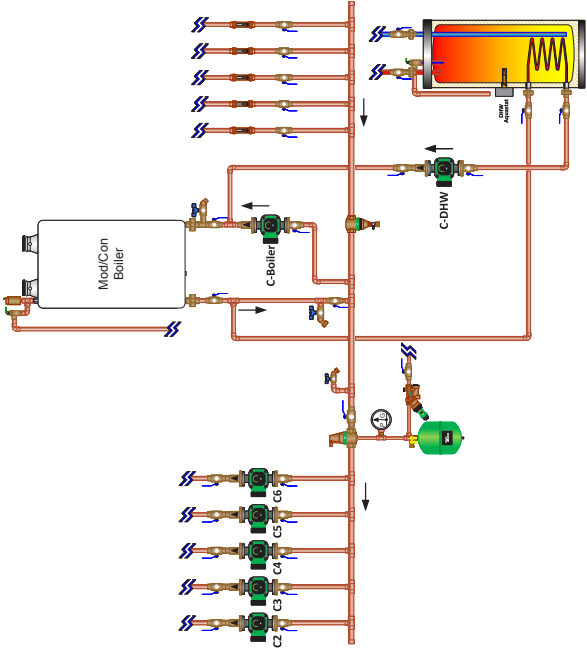
Switching Relay – Single Zone Panel Application; Mod-Con Boiler

Zoning Method	Circulators
Total Number of Zones	6
Space Heating Zones	5
Indirect Water Heater	1
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	No

Electrical Diagram:



Mechanical Diagram:



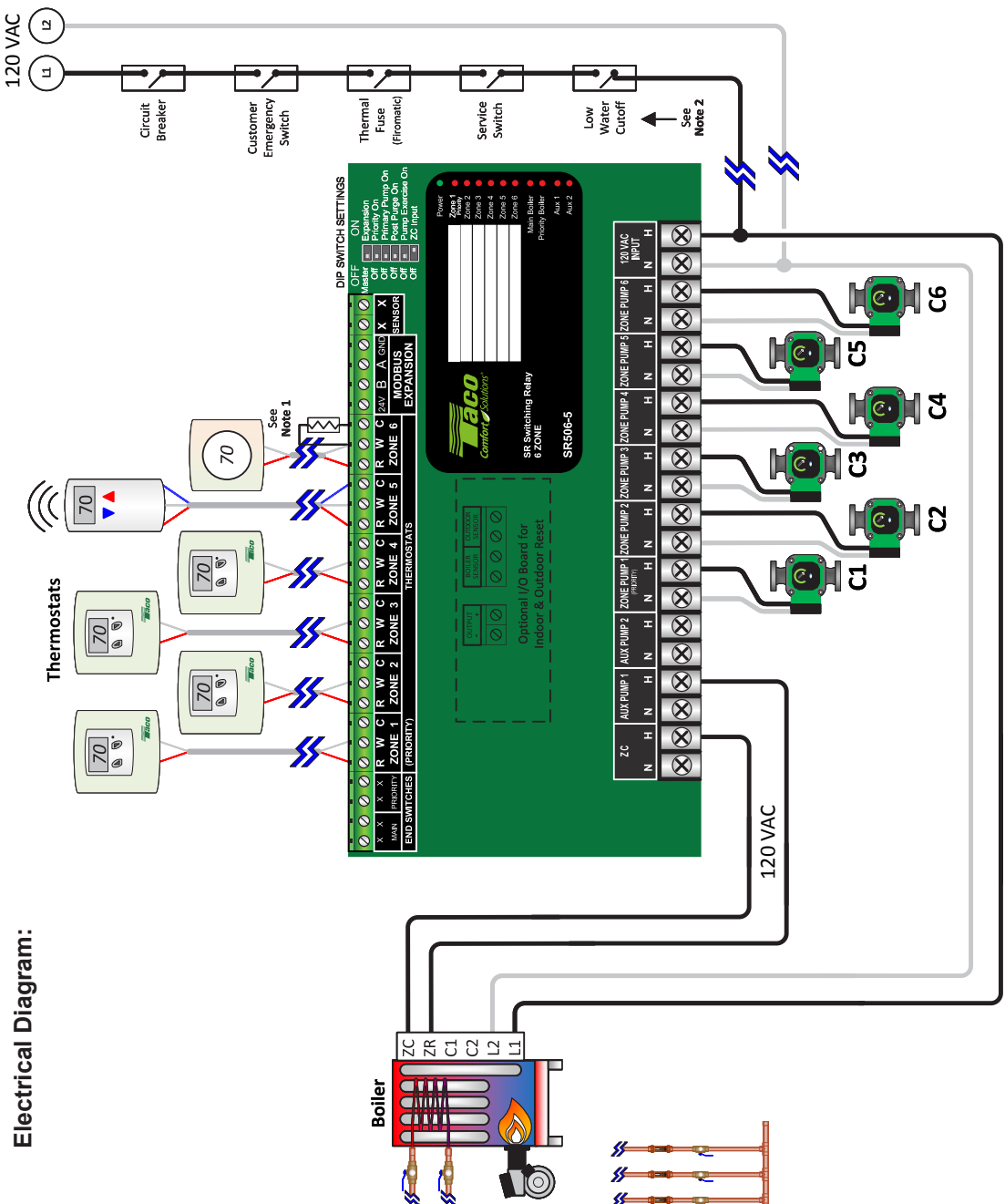
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Note 3: Follow boiler manufacturer's recommendations on powering of boiler loop circulator. Some boilers require this circulator to be wired to the boiler operating control. Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.



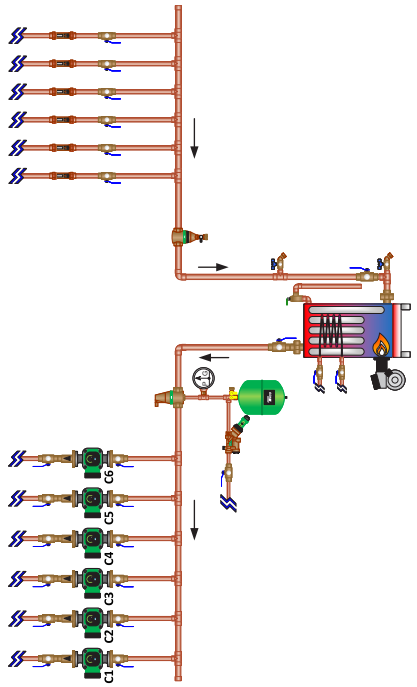
Switching Relay – Single Zone Panel Application; Tankless Coil Boiler

Electrical Diagram:

Zoning Method	Circulators
Total Number of Zones	6
Space Heating Zones	6
Indirect Water Heater	0
Priority Zone Enabled	No
Primary Circulator	No
ZC and ZR Enabled	Yes
Single or Multi-Temperature	1
Special Functions Enabled	No



Mechanical Diagram:



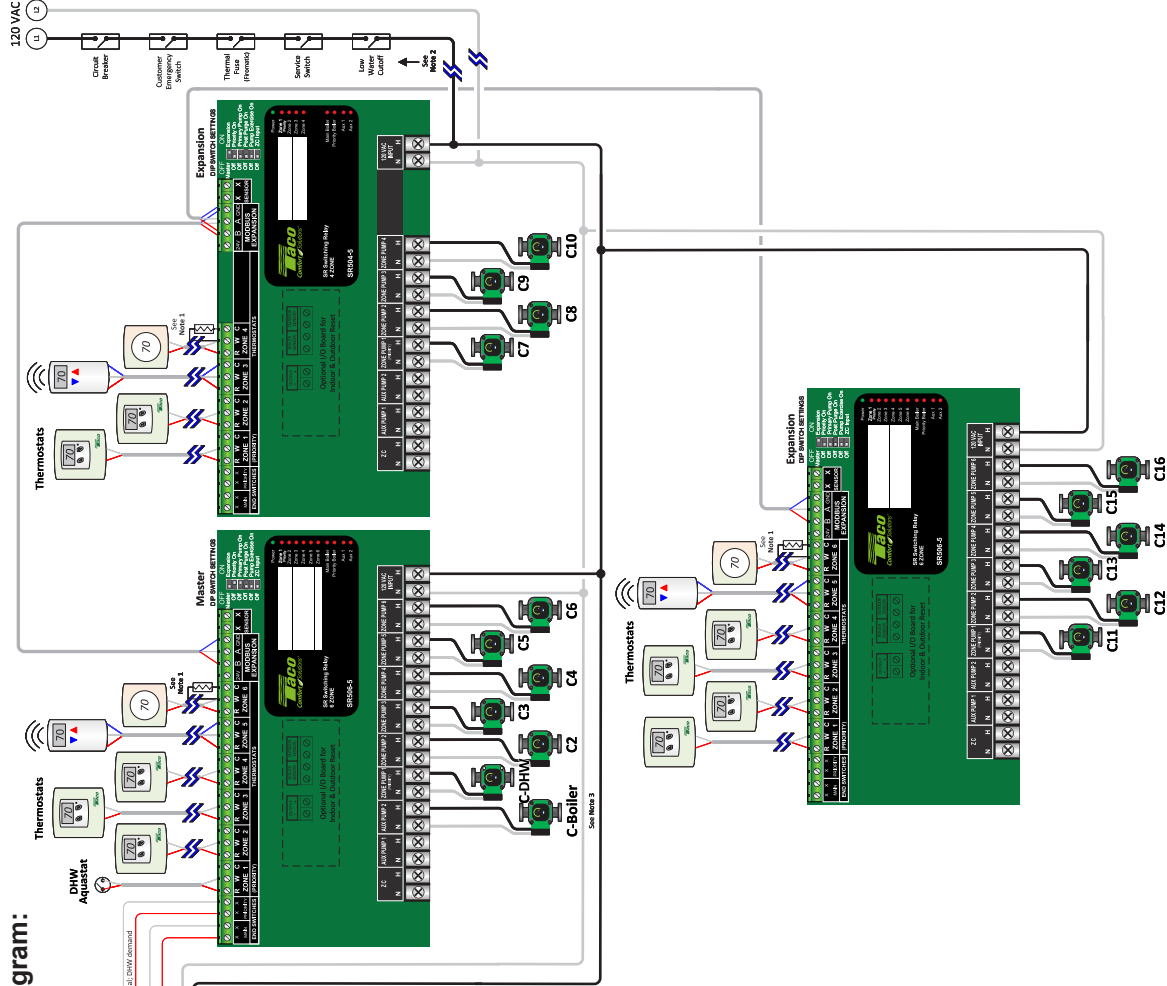
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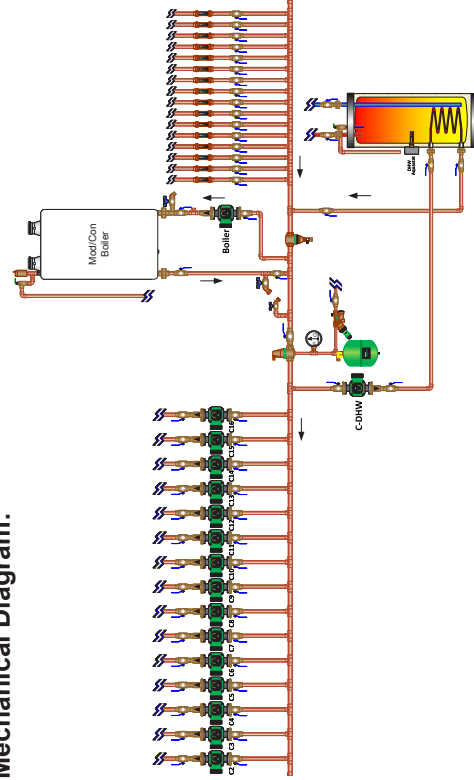
Switching Relays – Multiple Zone Panel Application

Zoning Method	Circulators
Total Number of Zones	16
Space Heating Zones	15
Indirect Water Heater	1
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	No

Electrical Diagram:



Mechanical Diagram:



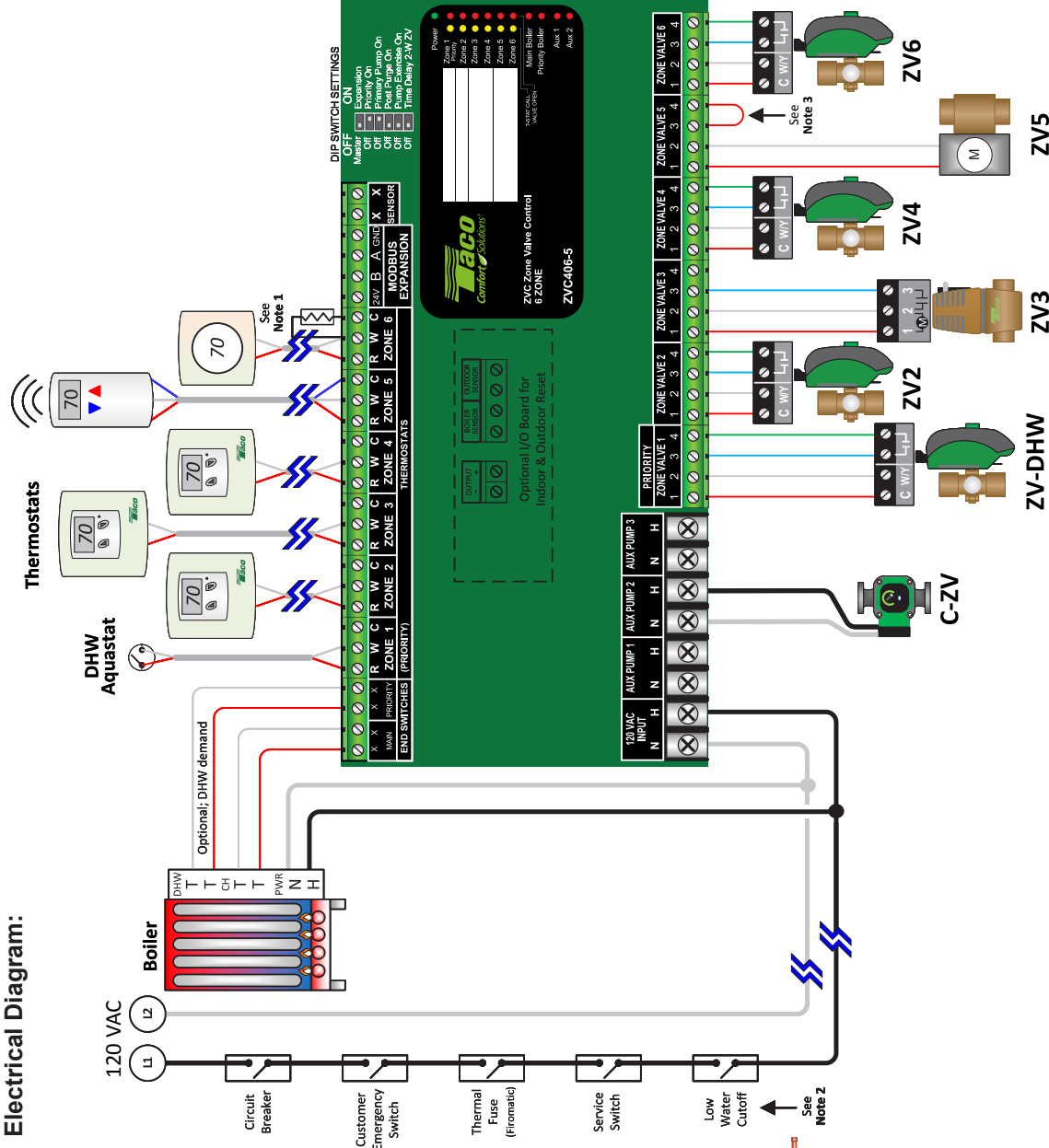
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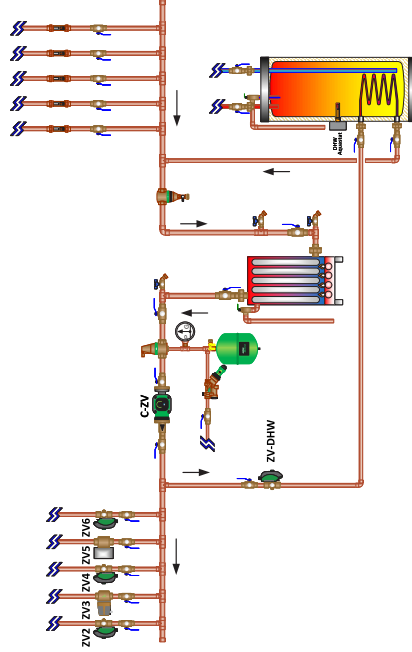
Zone Valve Controls – Single Zone Panel Application; DHW with Zone Valve

Zoning Method	ZV & Circ
Total Number of Zones	6
Space Heating Zones	5 - ZV
Indirect Water Heater	1 - ZV
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	No

Electrical Diagram:



Mechanical Diagram:



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Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

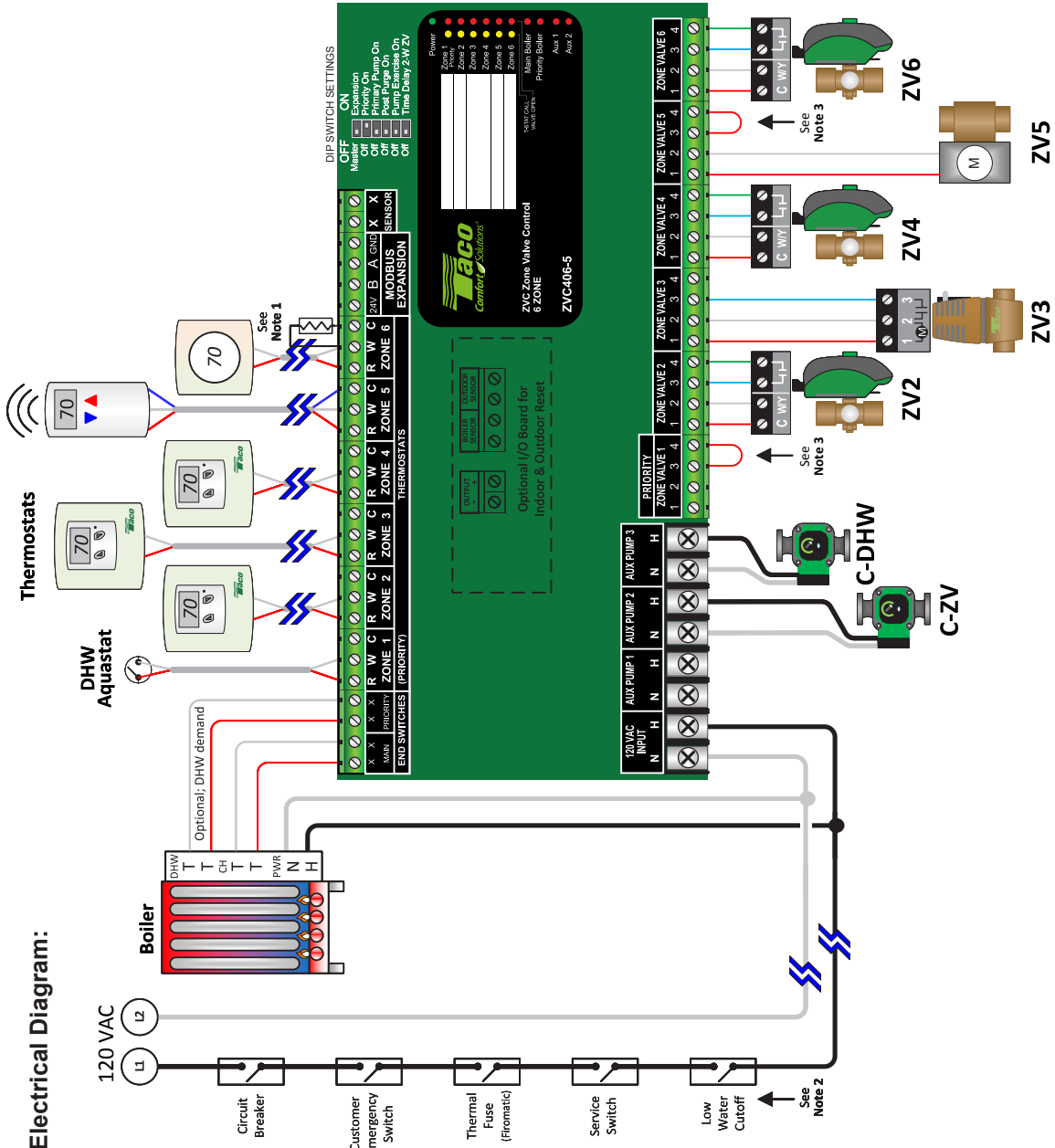
Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate.

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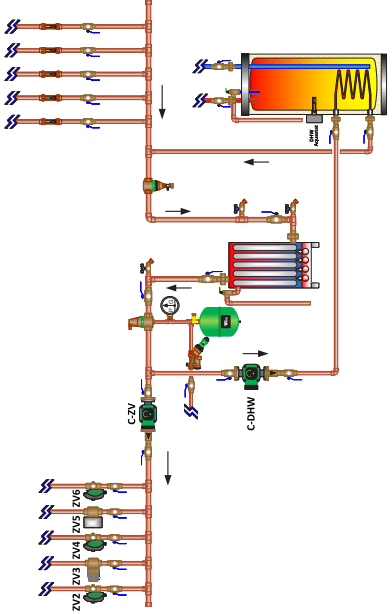
Zone Valve Controls – Single Zone Panel Application; DHW with Circulator

Zoning Method	ZV & Circ
Total Number of Zones	6
Space Heating Zones	5 - ZV
Indirect Water Heater	1 - Circ
Priority Zone Enabled	Yes
Primary Circulator	No
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	No

Electrical Diagram:



Mechanical Diagram:



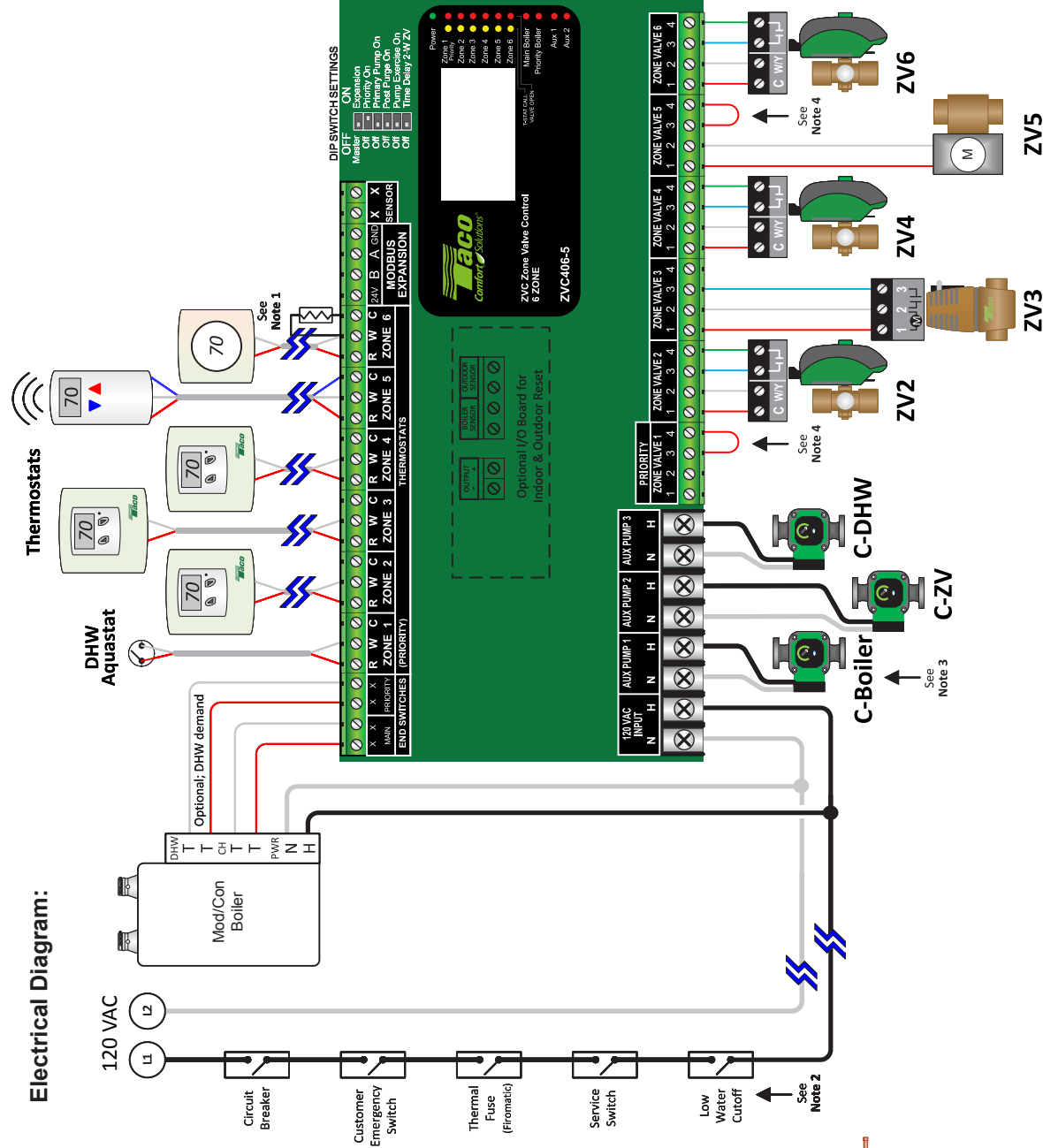
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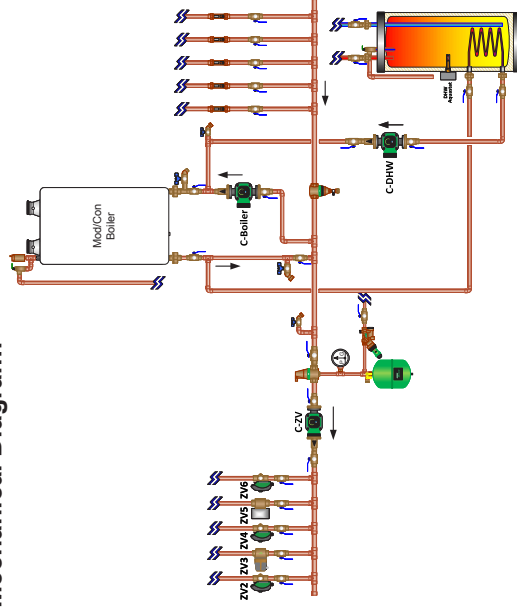
Zone Valve Controls – Single Zone Panel Application; DHW & Boiler with Circulators

Zoning Method	ZV & Circ
Total Number of Zones	6
Space Heating Zones	5 - ZV
Indirect Water Heater	1 - Circ
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	No

Electrical Diagram:



Mechanical Diagram:



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Note 1: Some “Power Stealing” style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

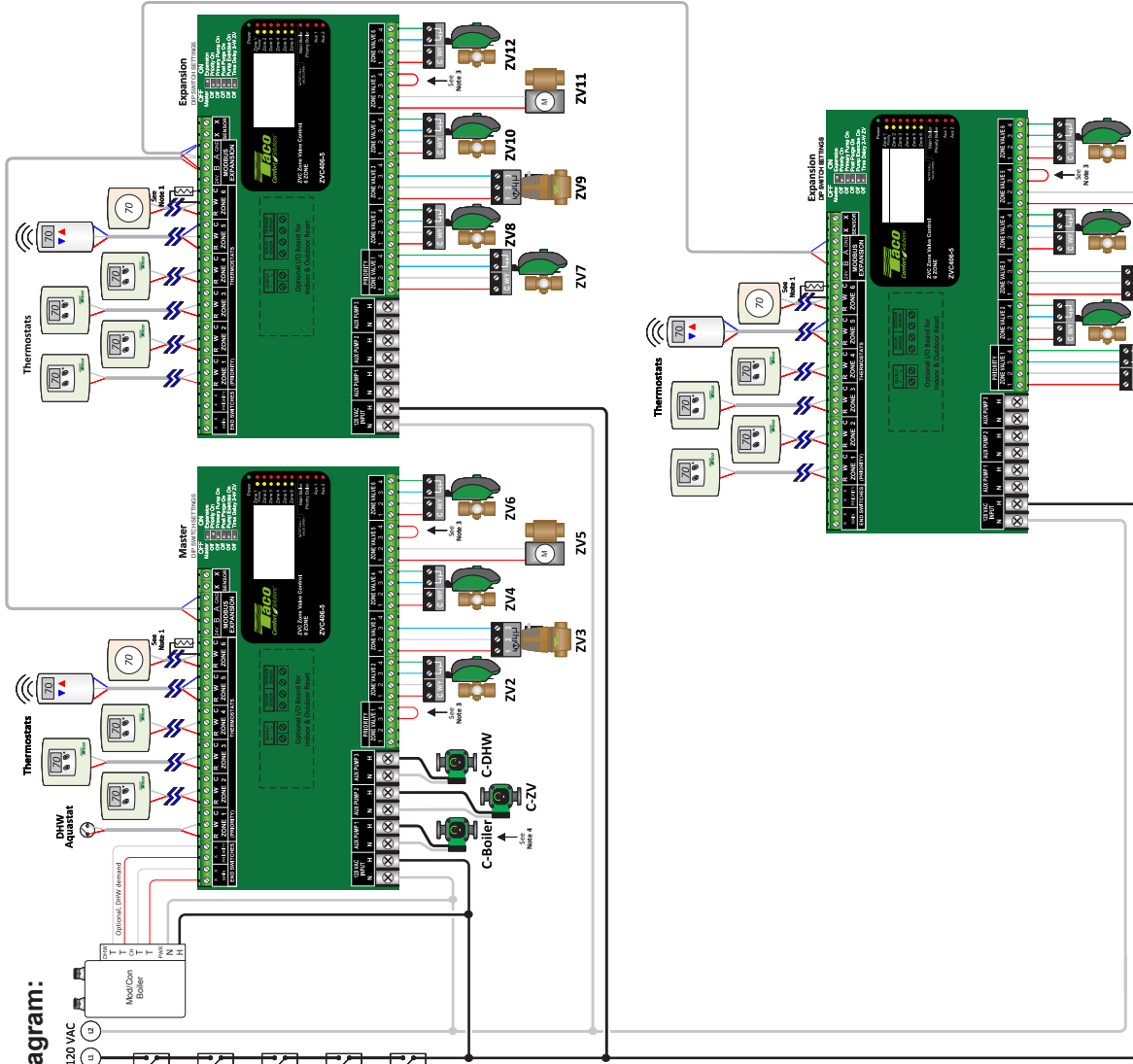
Note 3: Follow boiler manufacturer recommendations on powering of boiler loop circulator. Some boilers require this circulator to be wired to the boiler operating control.

Note 4: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate.

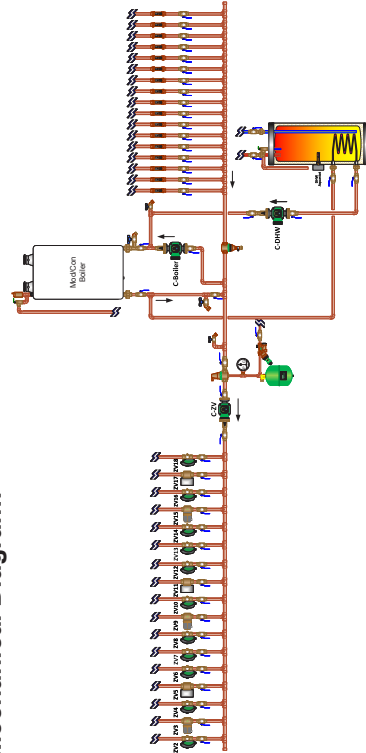
Zone Valve Controls – Multiple Zone Panel Application

Zoning Method	ZV & Circ
Total Number of Zones	18
Space Heating Zones	17 - ZV
Indirect Water Heater	1 - Circ
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	No

Electrical Diagram:



Mechanical Diagram:



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Note 3: If a 2 wire zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate.

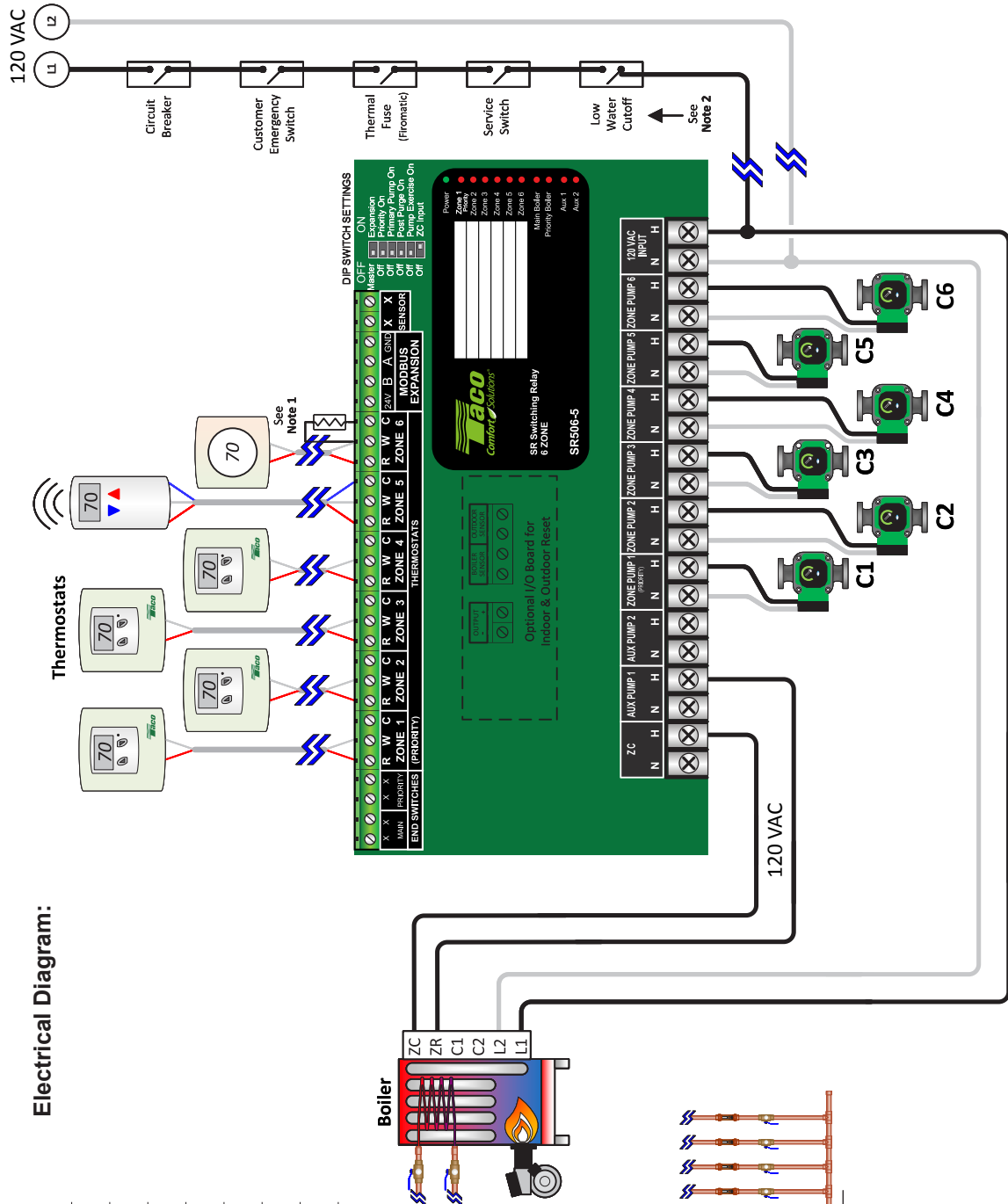
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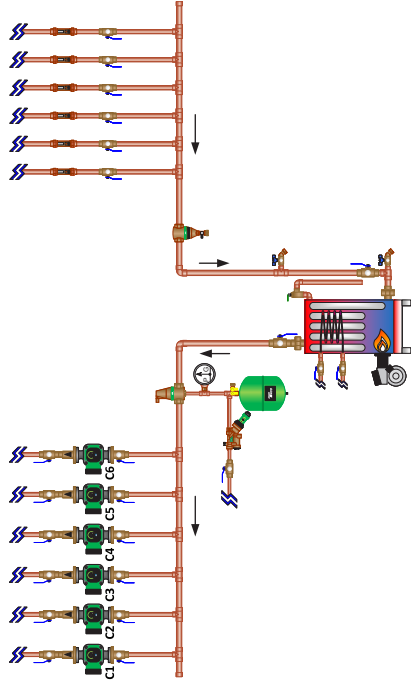
Switching Relay with Tankless Coil Boiler

Zoning Method	Circulators
Total Number of Zones	6
Space Heating Zones	6
Indirect Water Heater	0
Priority Zone Enabled	No
Primary Circulator	No
ZC and ZR Enabled	Yes
Single or Multi-Temperature	1
Special Functions Enabled	No

Electrical Diagram:



Mechanical Diagram:



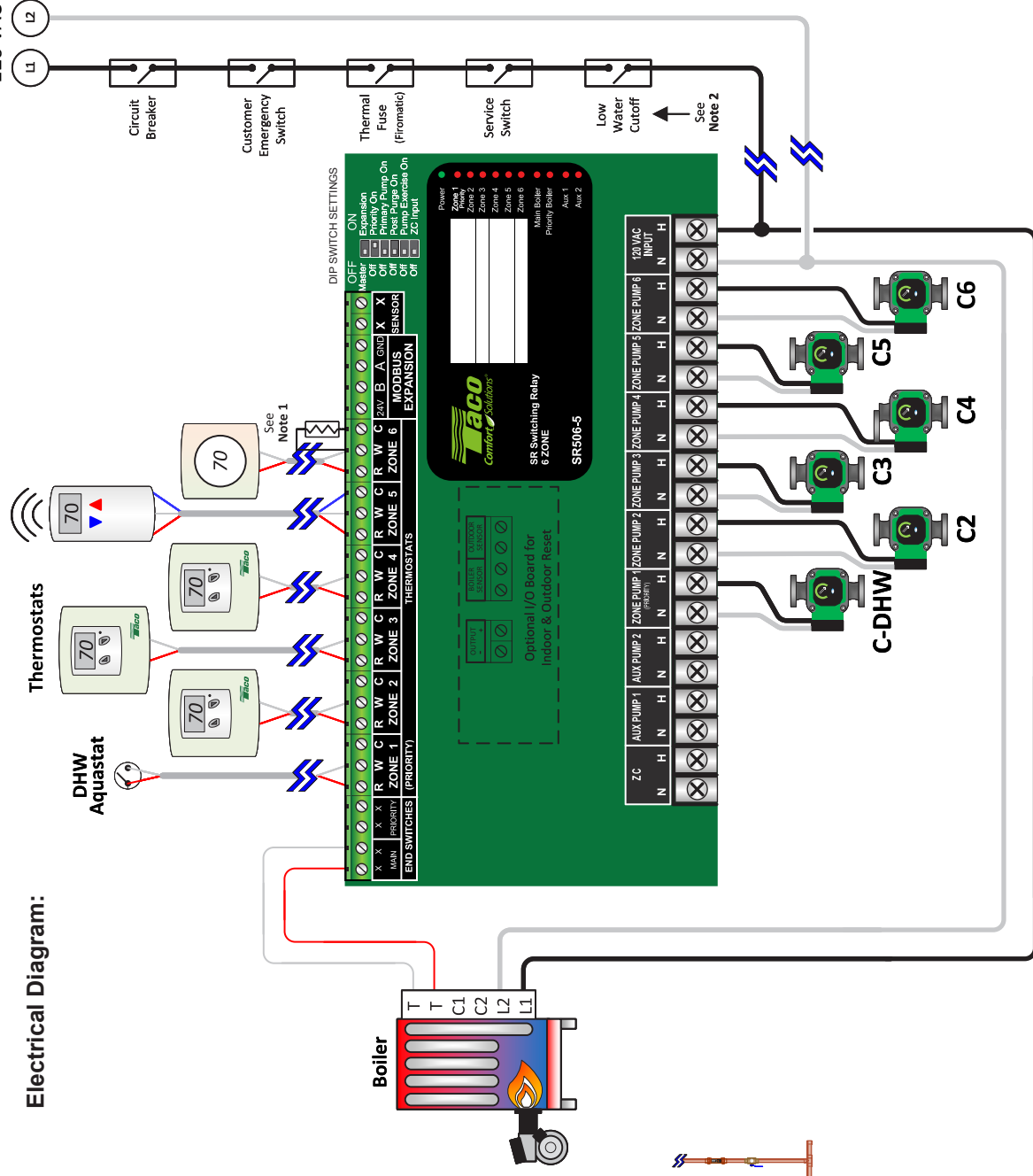
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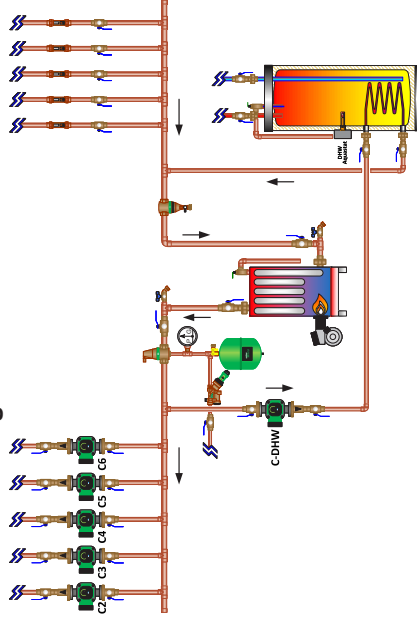
Switching Relay with Cold Start Boiler

Zoning Method	Circulators
Total Number of Zones	6
Space Heating Zones	5
Indirect Water Heater	1
Priority Zone Enabled	Yes
Primary Circulator	No
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	No

Electrical Diagram:



Mechanical Diagram:

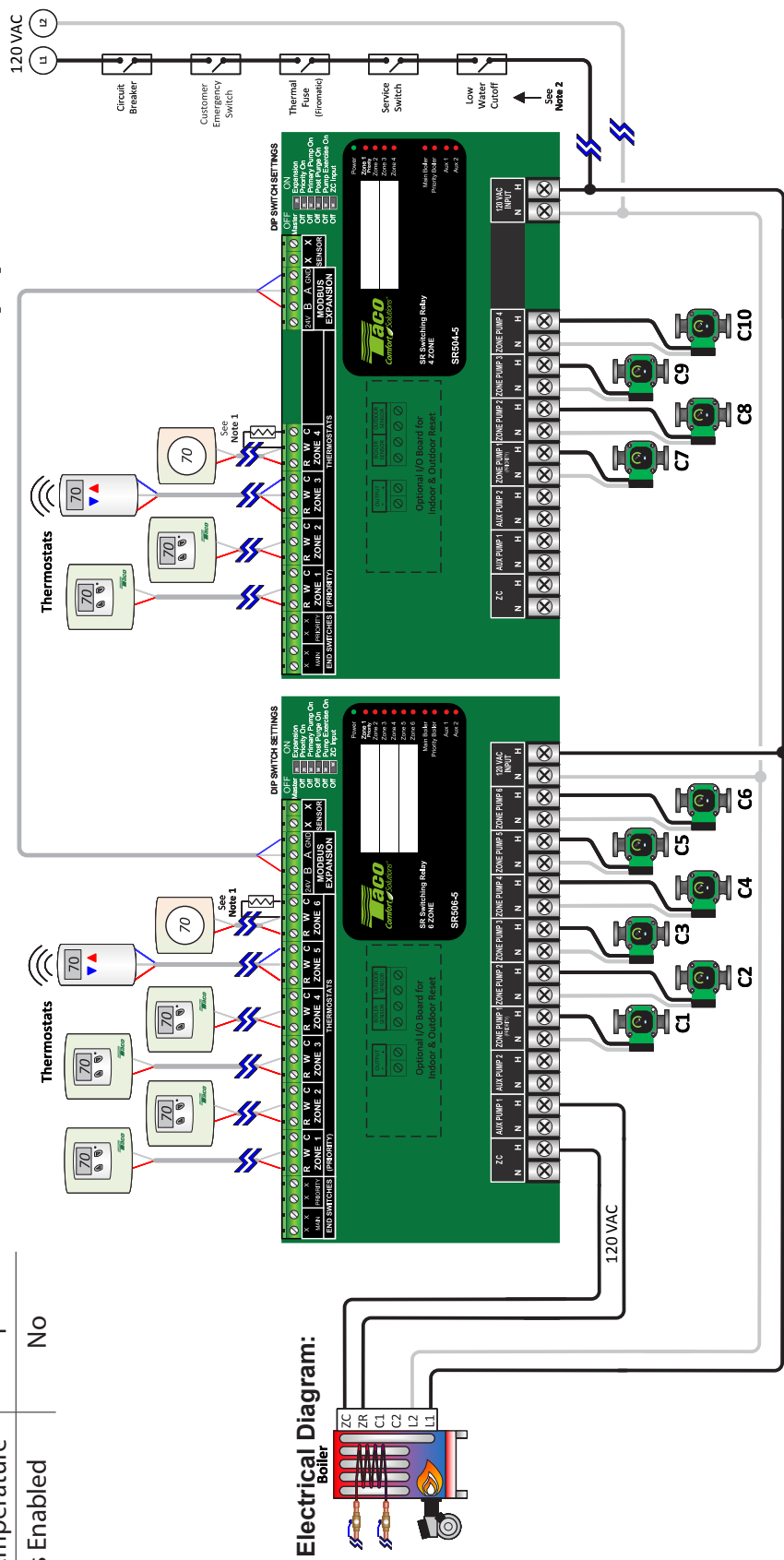
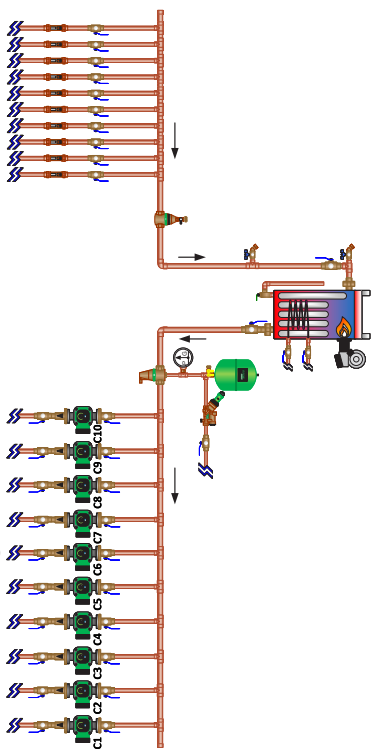


Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.
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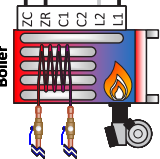
Two Switching Relays with Tankless Coil Boiler

Zoning Method	Circulators
Total Number of Zones	10
Space Heating Zones	10
Indirect Water Heater	0
Priority Zone Enabled	No
Primary Circulator	No
ZC and ZR Enabled	Yes
Single or Multi-Temperature	1
Special Functions Enabled	No

Mechanical Diagram:



Electrical Diagram:



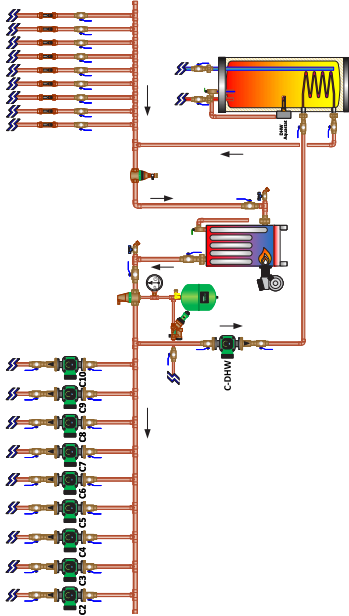
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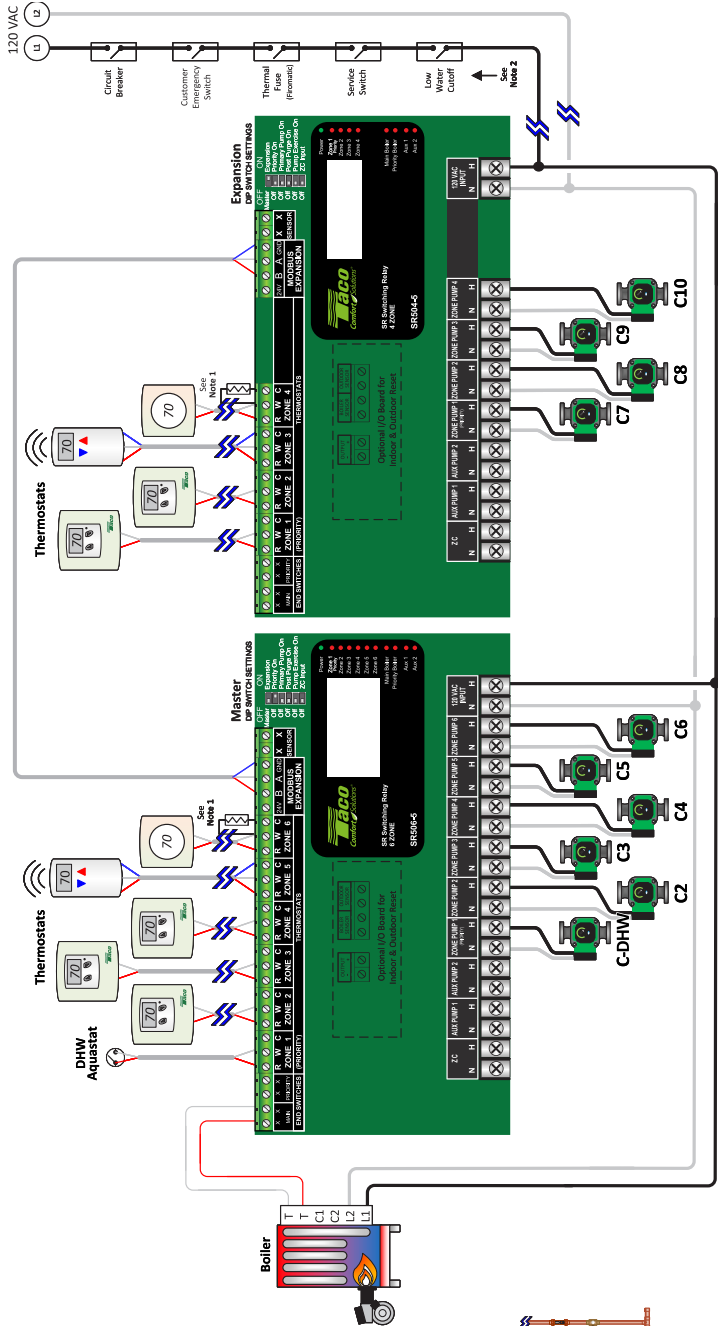
Two Switching Relays with Cold Start Boiler

Zoning Method	Circulators
Total Number of Zones	10
Space Heating Zones	9
Indirect Water Heater	1
Priority Zone Enabled	Yes
Primary Circulator	No
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	No

Mechanical Diagram:



Electrical Diagram:



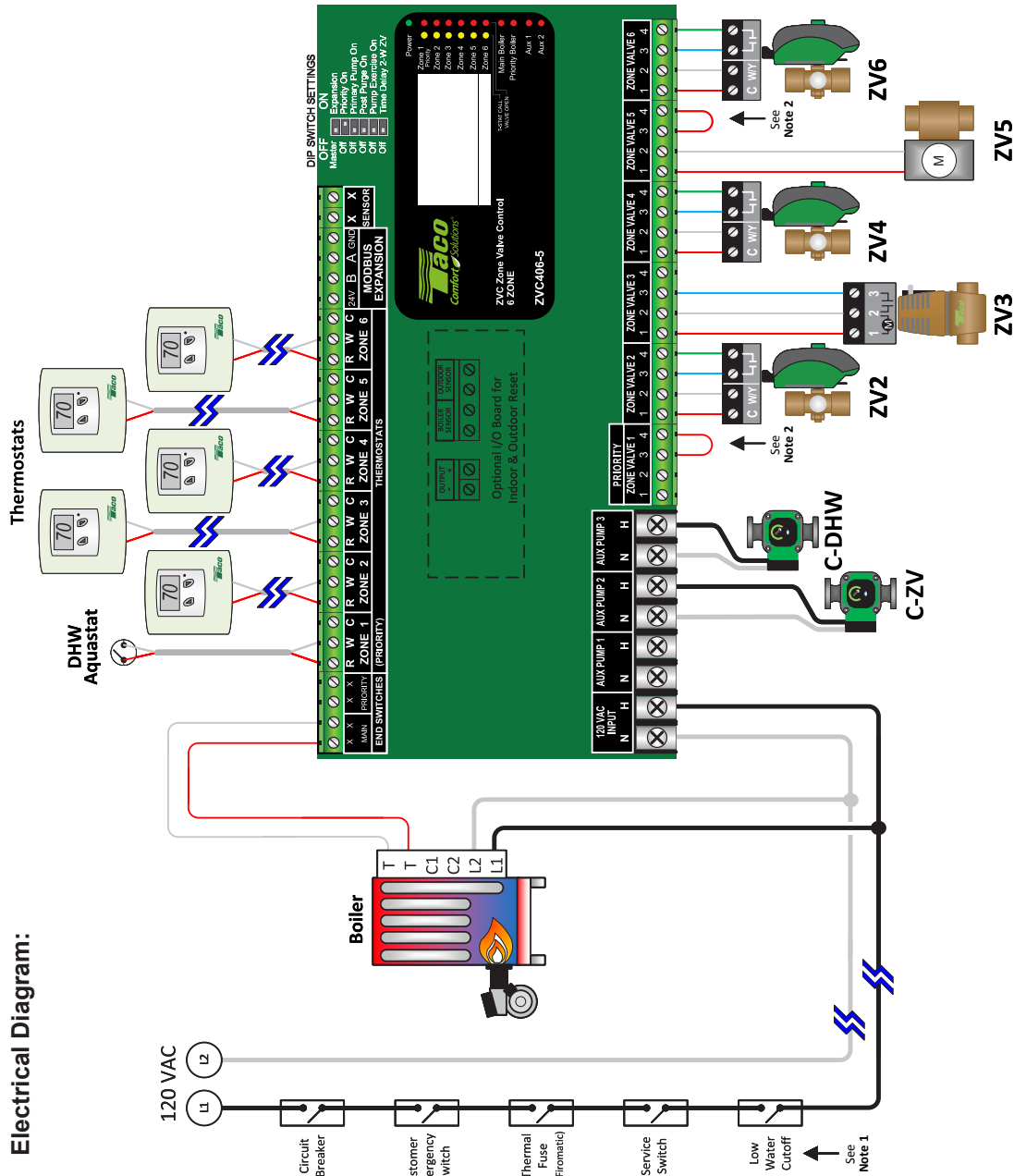
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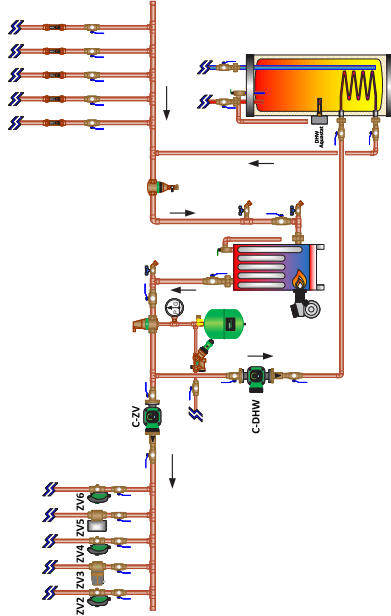
Zone Valve Control with Cold Start Boiler

Zoning Method	ZV & Circ
Total Number of Zones	6
Space Heating Zones	5 - ZV
Indirect Water Heater	1 - Circ
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	No

Electrical Diagram:



Mechanical Diagram:



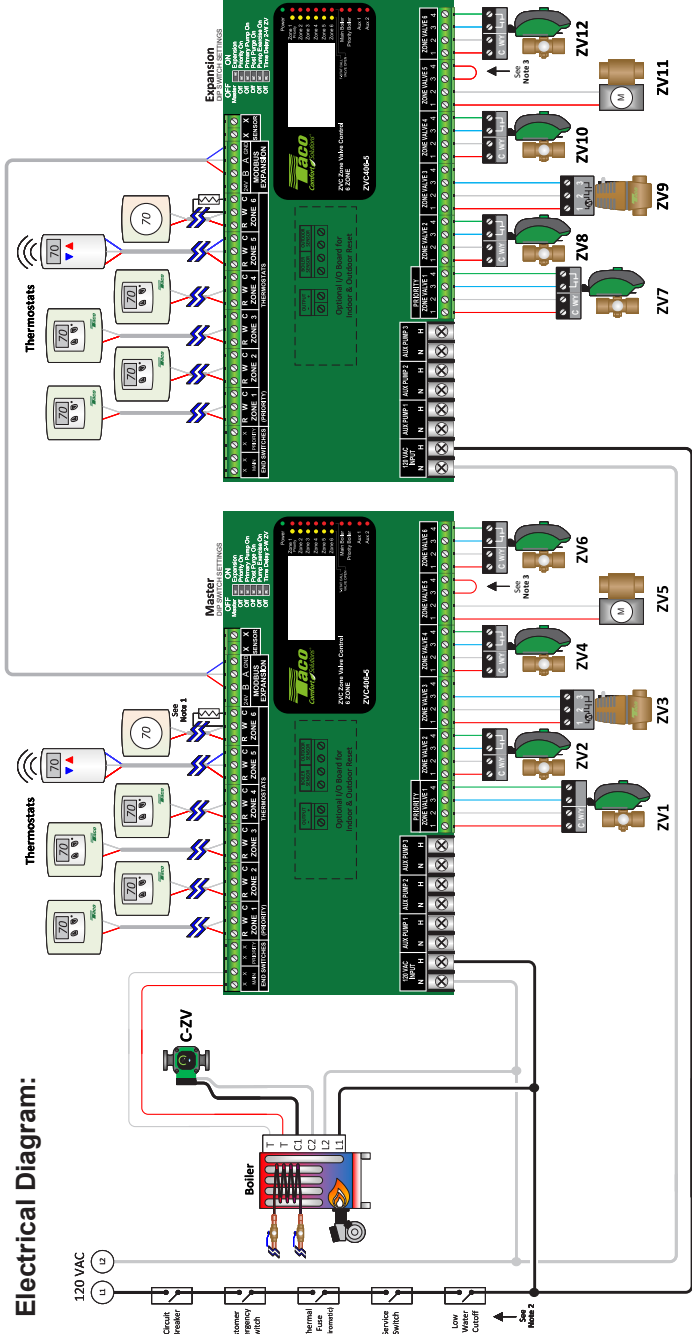
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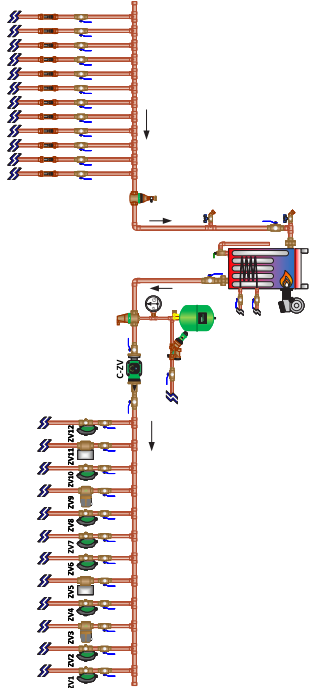
Two Zone Valve Controls with Tankless Coil Boiler

Electrical Diagram:

Zoning Method	ZV & Circ
Total Number of Zones	12
Space Heating Zones	12 - ZV
Indirect Water Heater	0
Priority Zone Enabled	No
Primary Circulator	No
ZC and ZR Enabled	Yes
Single or Multi-Temperature	1
Special Functions Enabled	No



Mechanical Diagram:



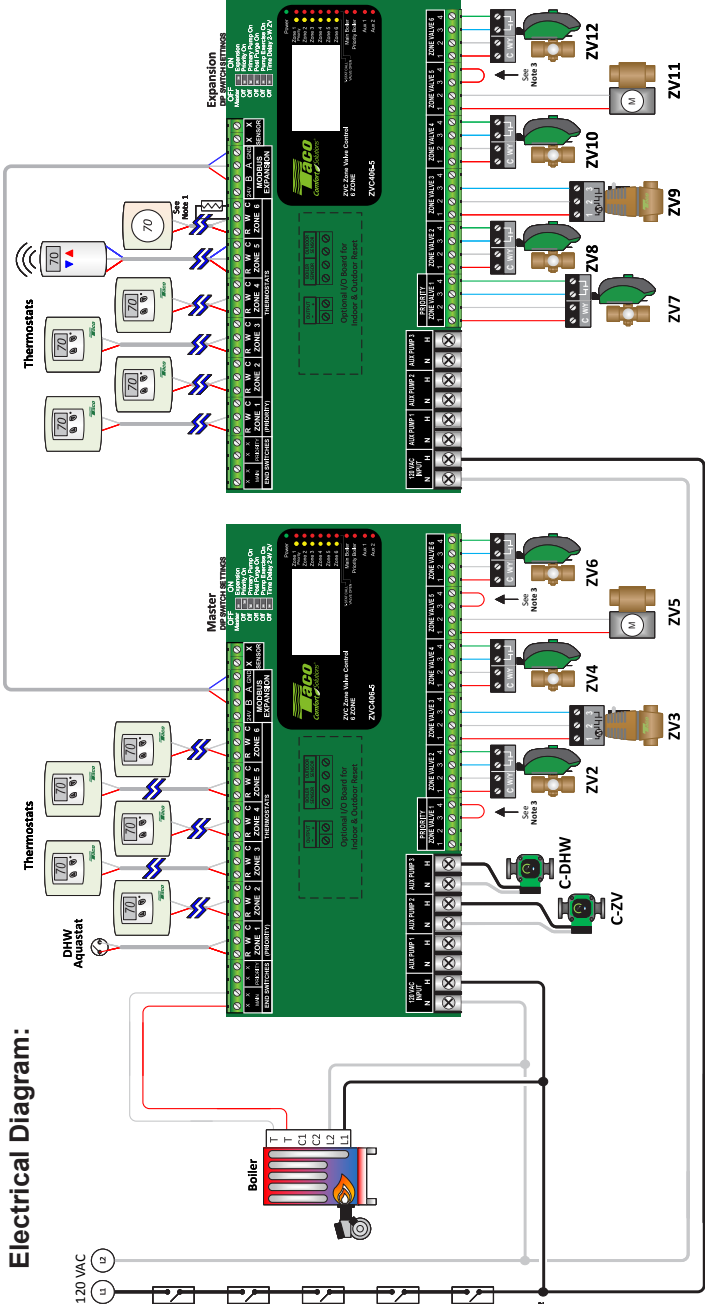
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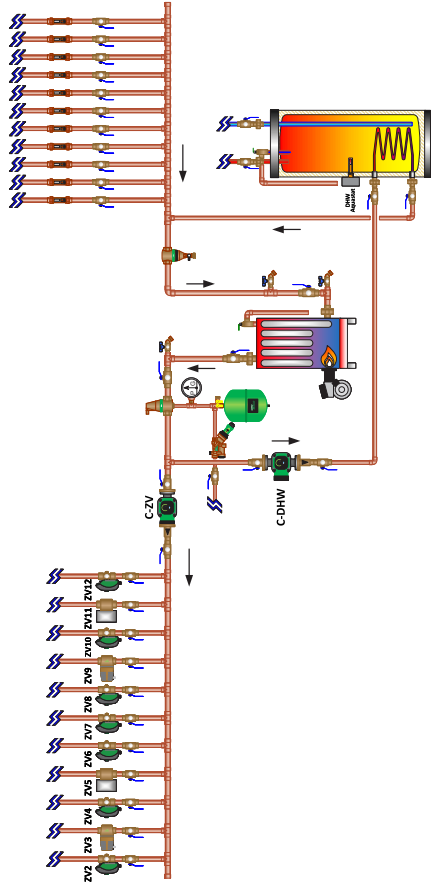
Two Zone Valve Controls with Cold Start Boiler

Zoning Method	ZV & Circ
Total Number of Zones	12
Space Heating Zones	11 - ZV
Indirect Water Heater	1 - Circ
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	No

Electrical Diagram:



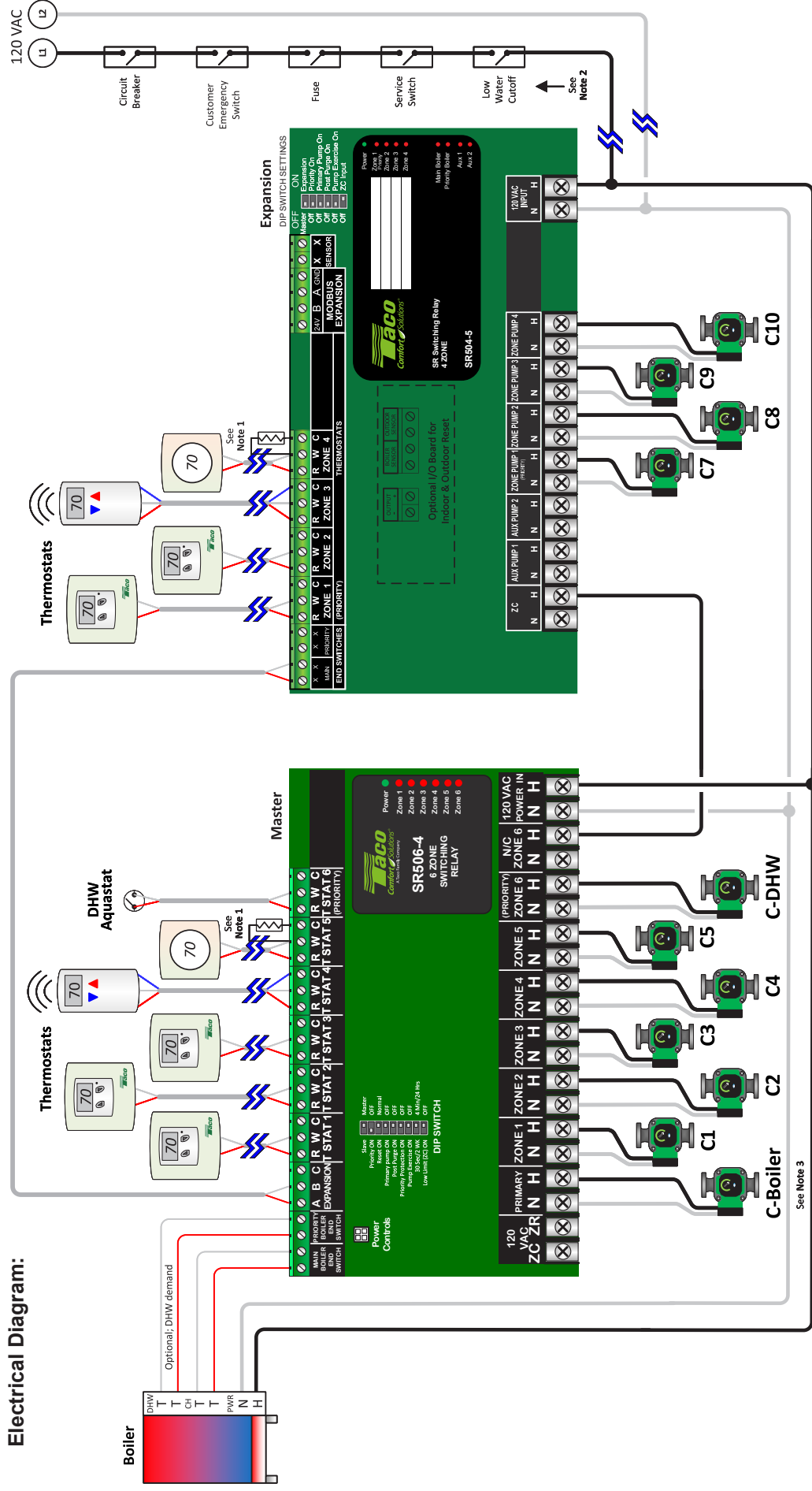
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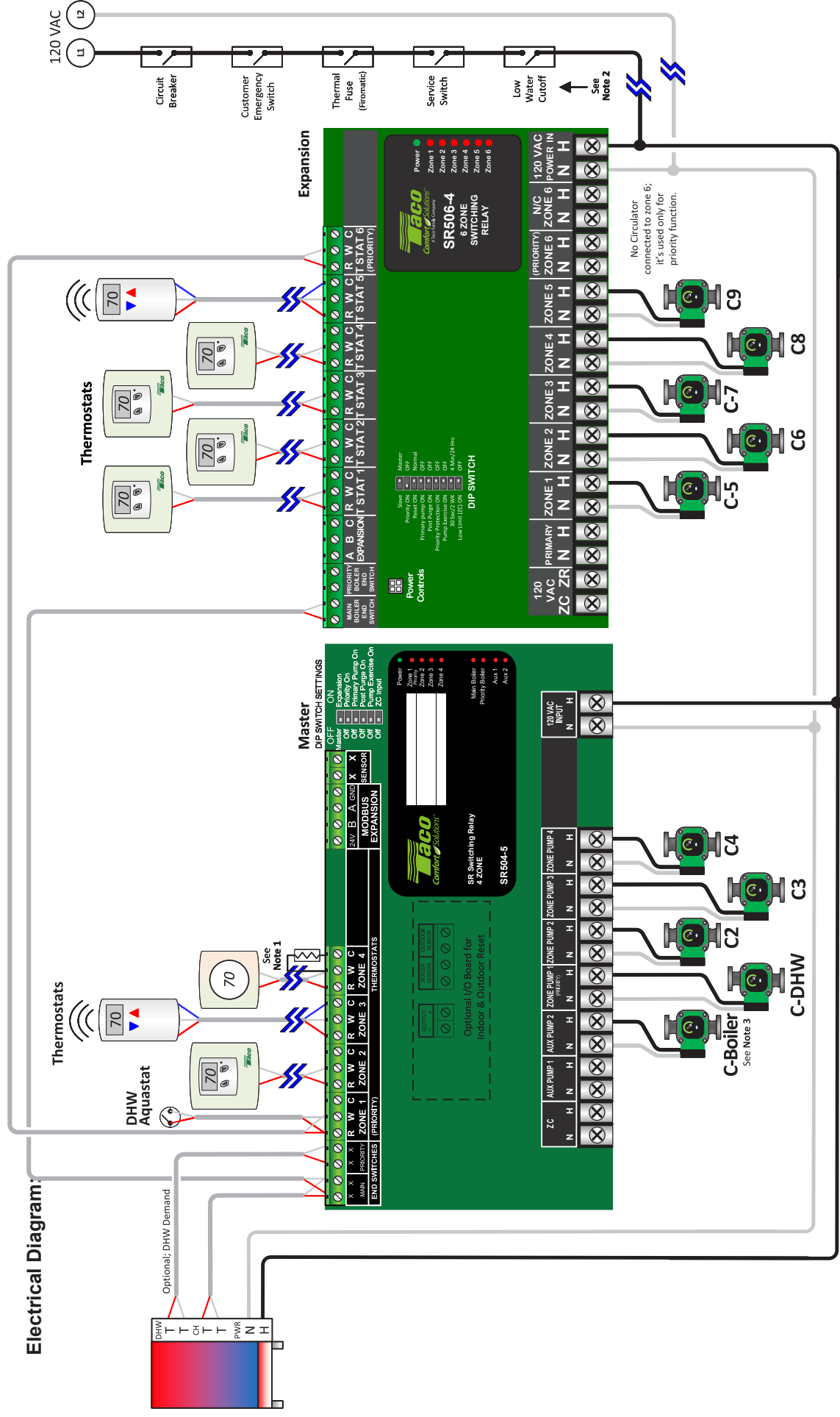
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Legacy Zone Controls – SR506-EXP-4 (Master) Connected to SR504-5 (Expansion)

Electrical Diagram:



Legacy Zone Controls – SR504-5 (Master) Connected to SR506-EXP-4 (Expansion)



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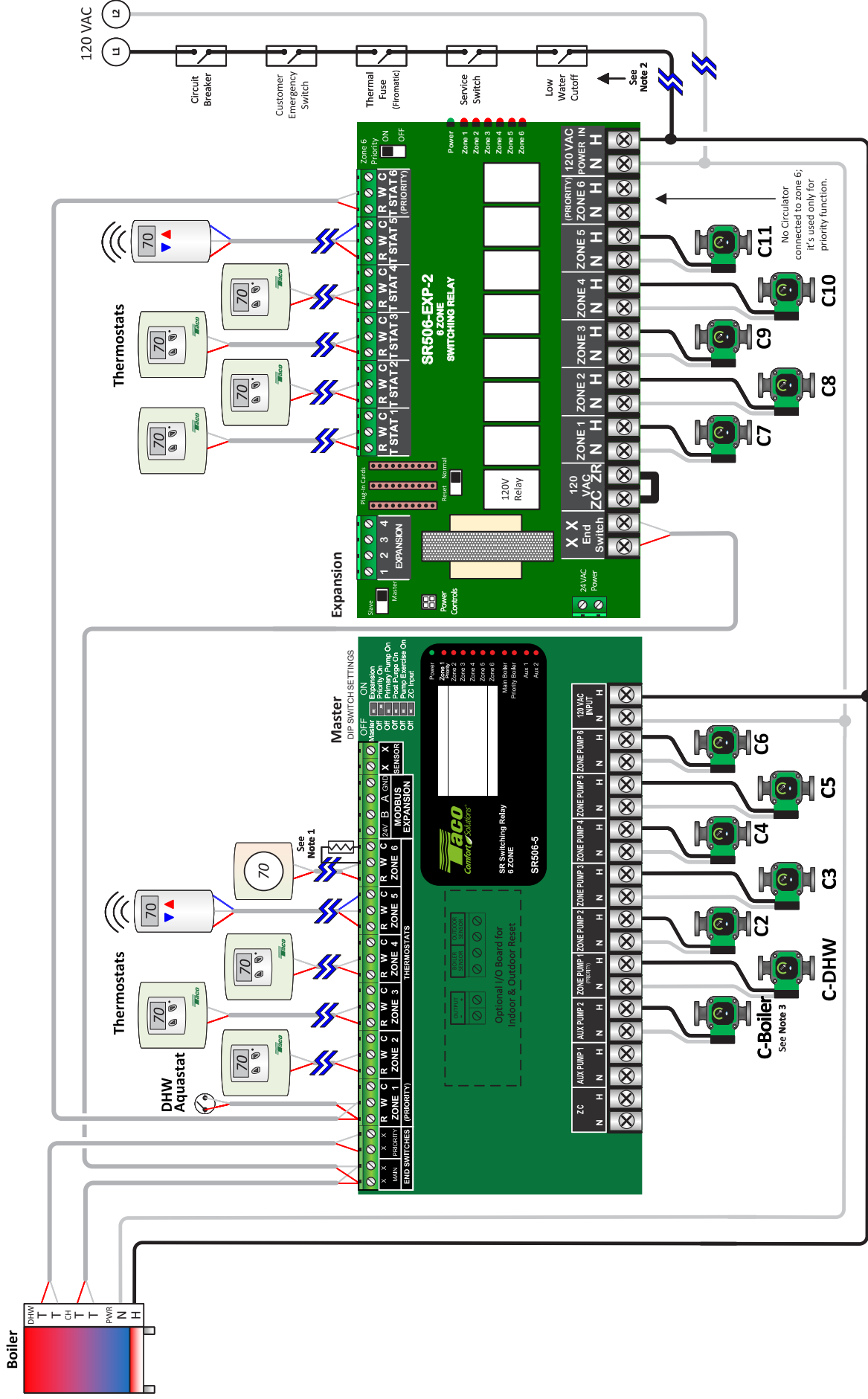
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Note 3: Follow boiler manufacturer's recommendations on powering of boiler loop circulator. Some boilers require this circulator to be wired to the boiler operating control.

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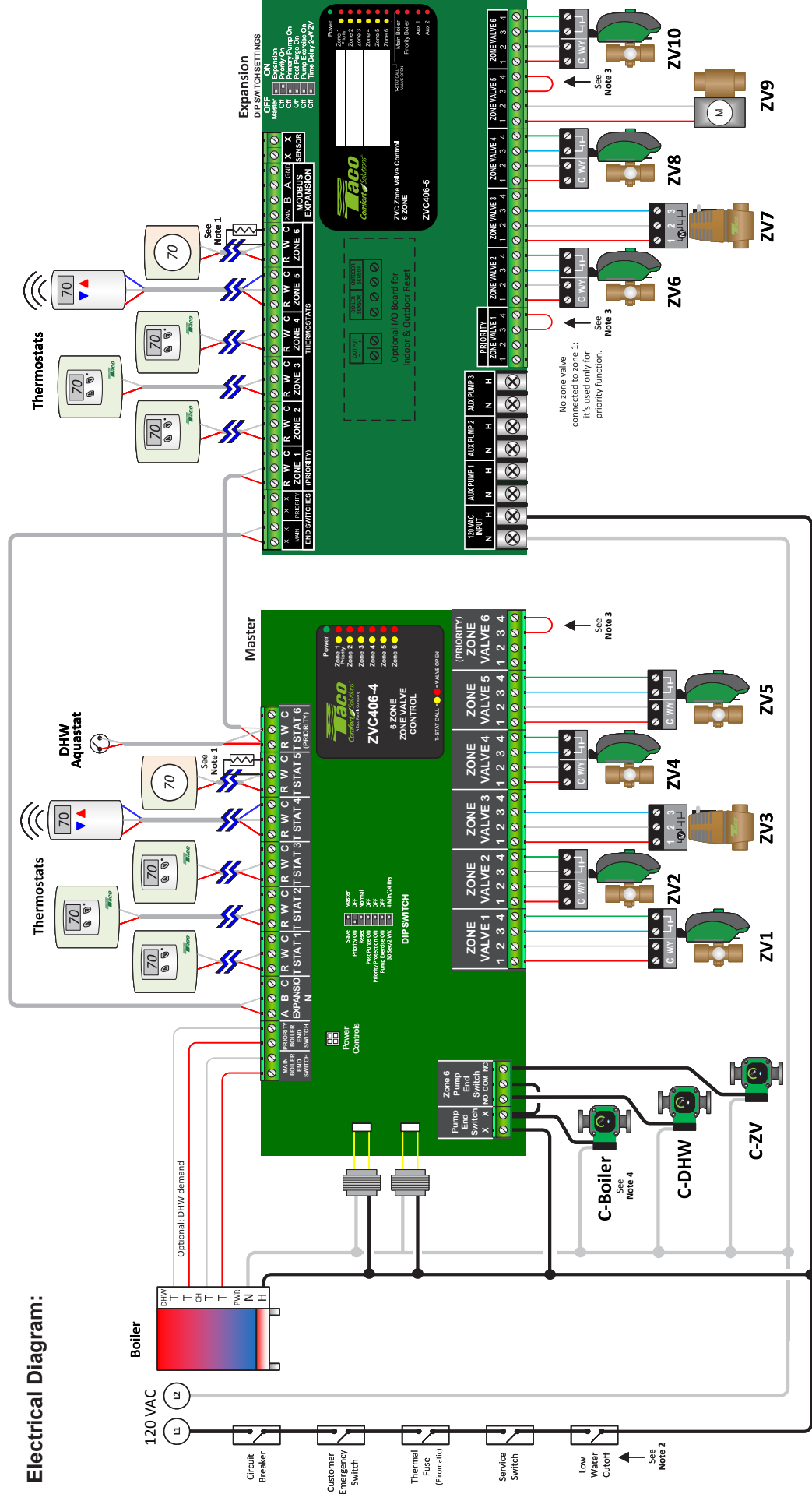
Legacy Zone Controls – SR506-5 (Master) Connected to SR506-EXP-2 (Expansion)

Electrical Diagram:



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Legacy Zone Controls – ZVC406-EXP-4 (Master) Connected to ZVC406-5 (Expansion)



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Note 1: Some "Power Sealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

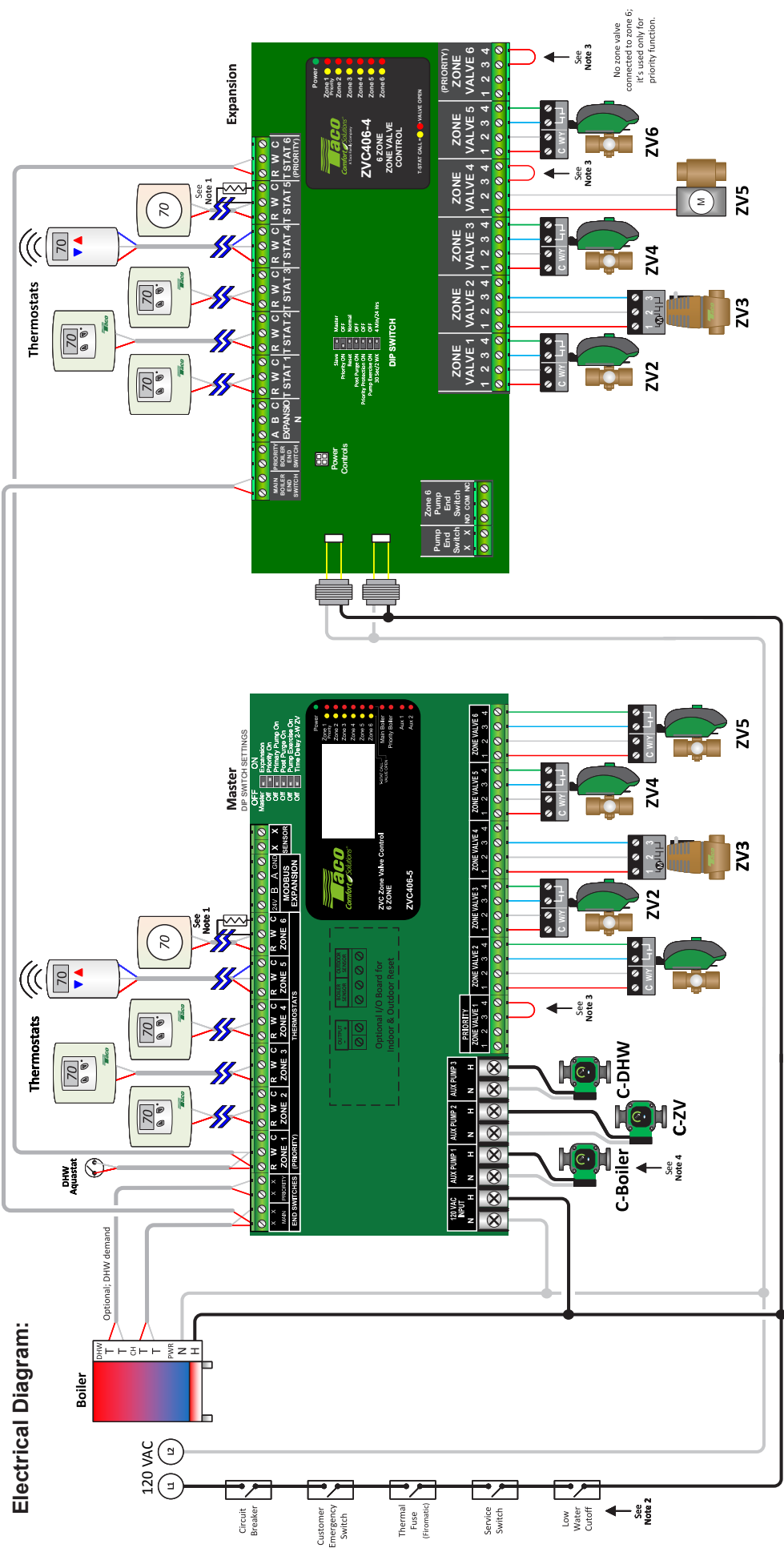
Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate.

Note 4: Follow boiler manufacturer's recommendations on powering of boiler loop circulator. Some boilers require this circulator to be wired to the boiler operating control. Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

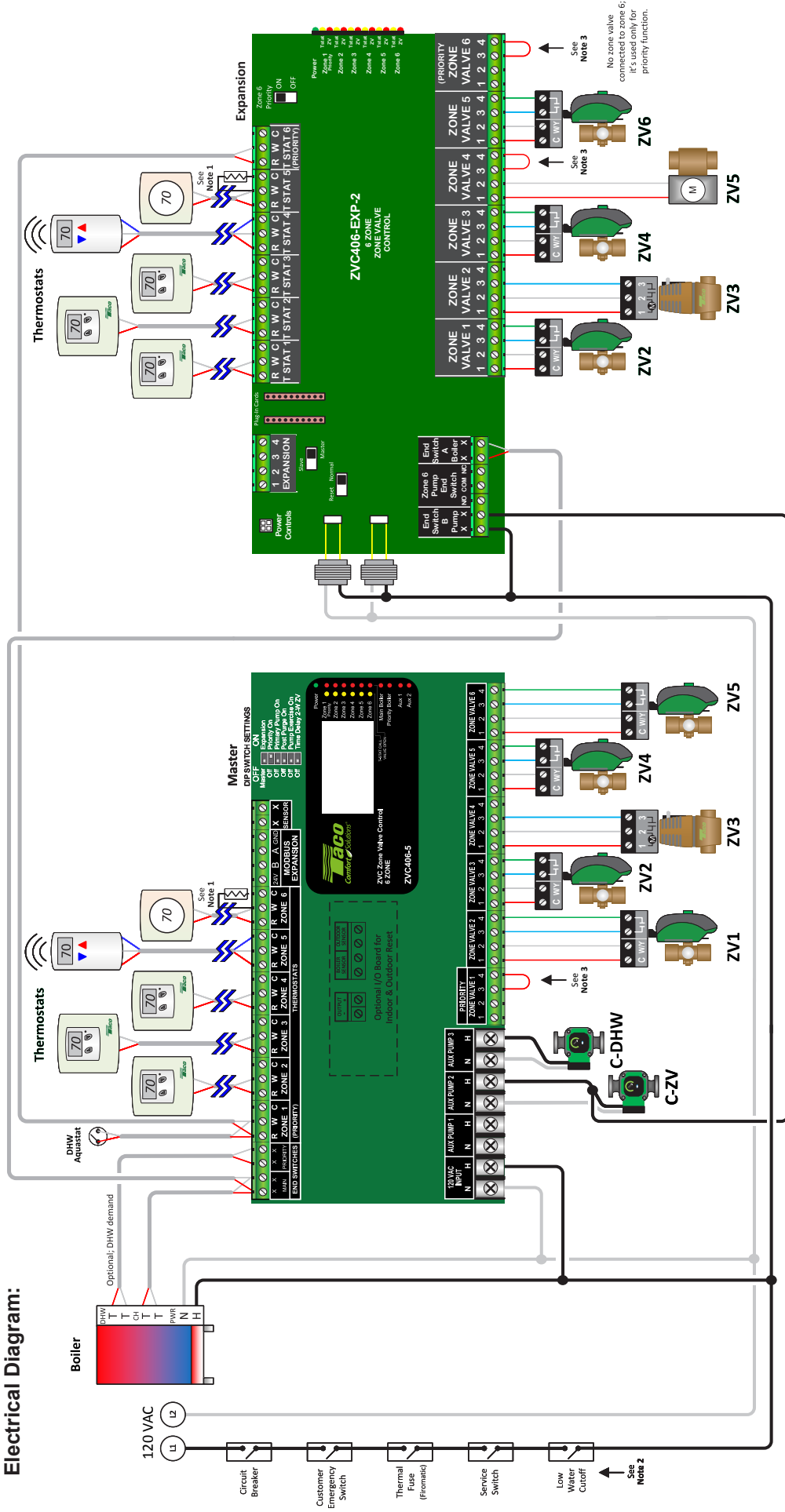


Legacy Zone Controls – ZVC406-5 (Master) Connected to ZVC406-EXP-4 (Expansion)



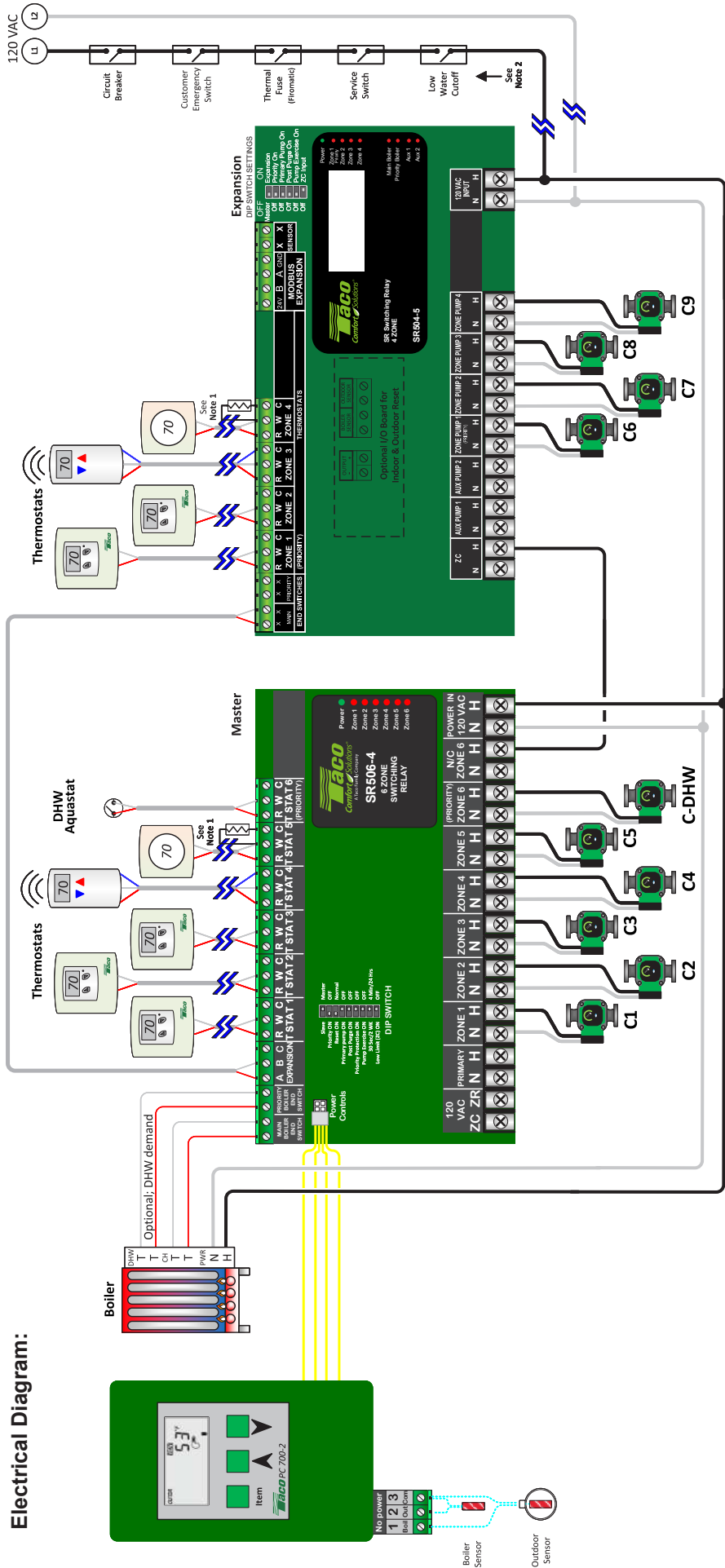
Legacy Zone Controls – ZVC406-5 (Master) Connected to ZVC406-EXP-2 (Expansion)

Electrical Diagram:



Legacy Zone Controls – SR506-EXP-4 (Master) with PC700-2 Boiler Reset Control Connected to SR504-5 (Expansion)

Electrical Diagram:

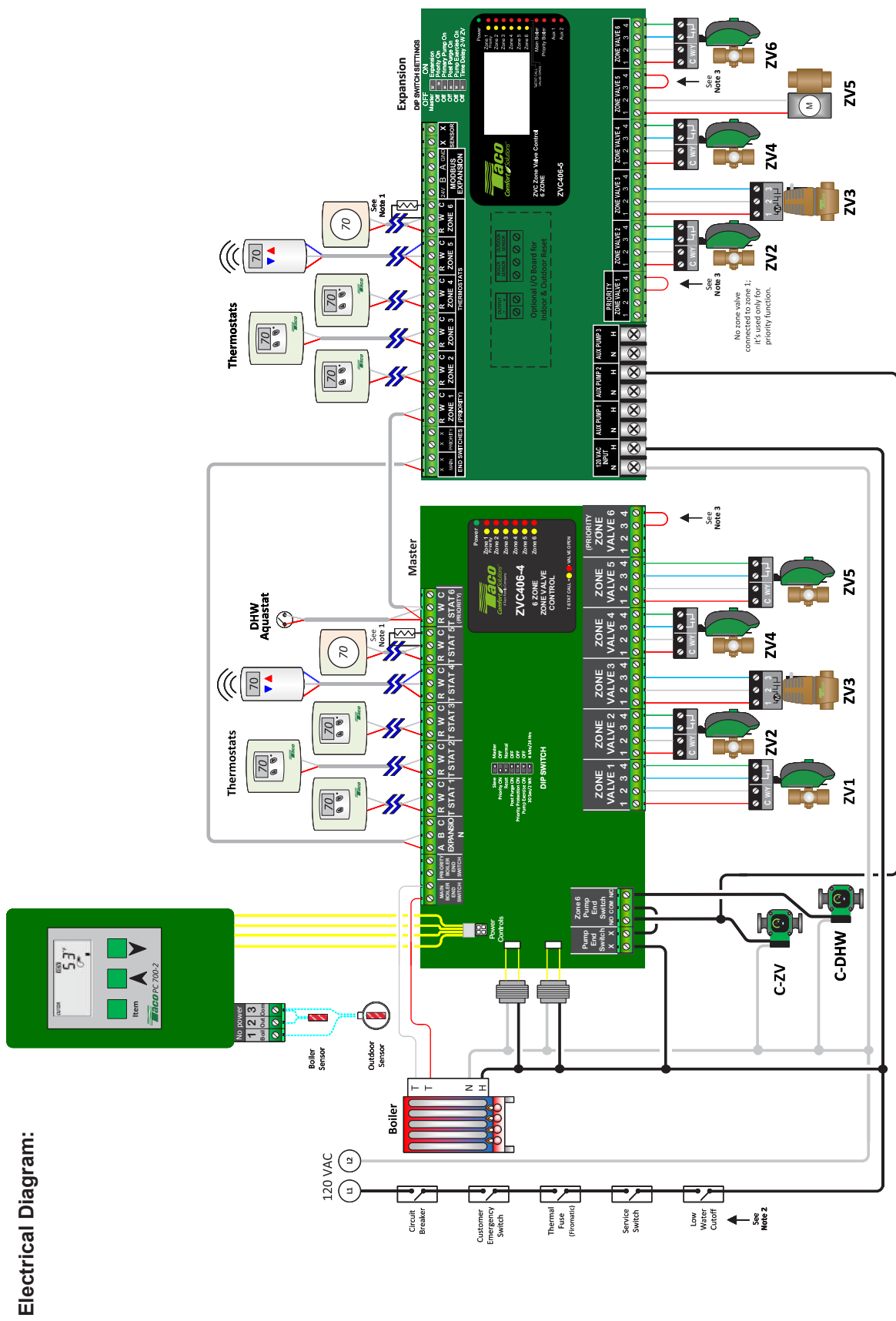


Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

Legacy Zone Controls – ZVC406-EXP-4 (Master) with PC700-2 Boiler Reset Control Connected to ZVC406-5 (Expansion)



Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

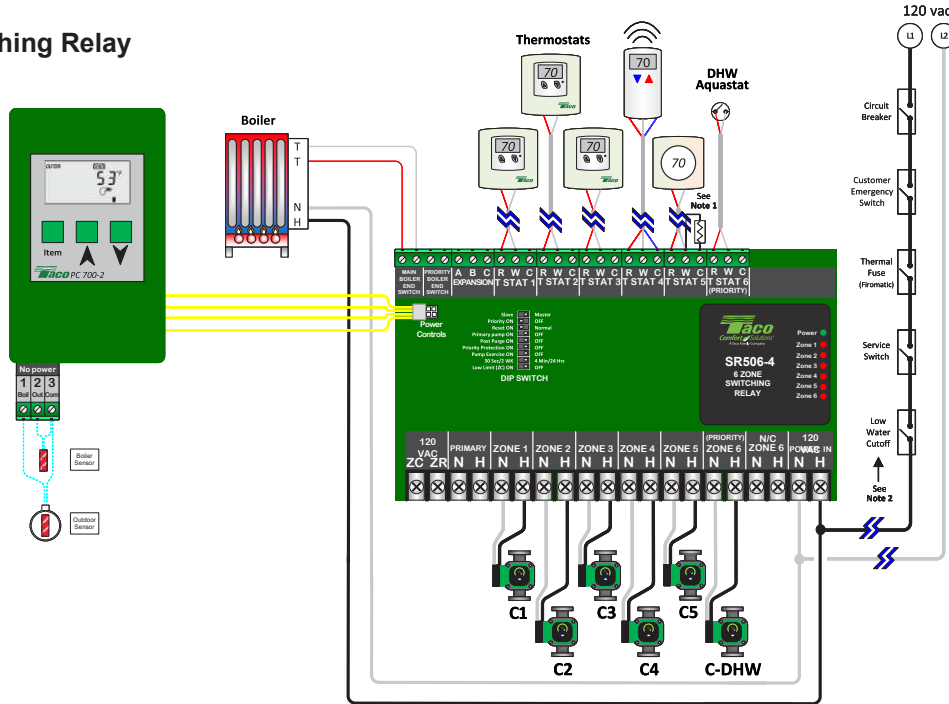
Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate. Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.



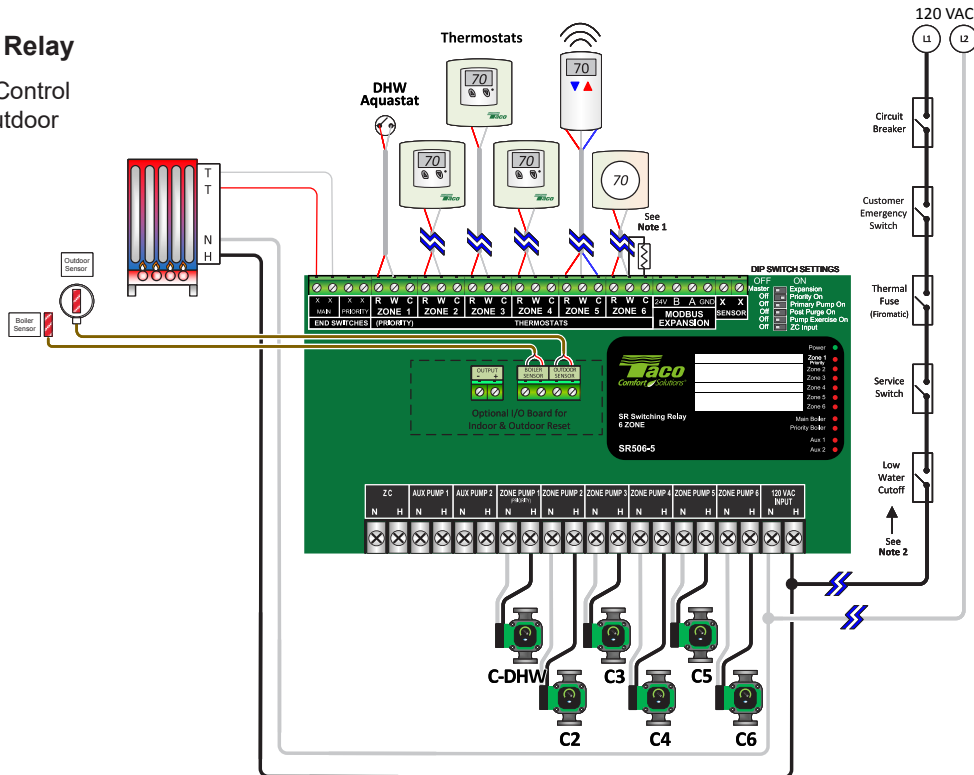
Replacing SR506-EXP-4 w/ PC700-2 with New SR506-5 Switching Relay with New PC800-5 Upgradeable Outdoor Reset Control

Legacy Switching Relay



New Switching Relay

Note: Need Taco Control app to program outdoor reset parameters



Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

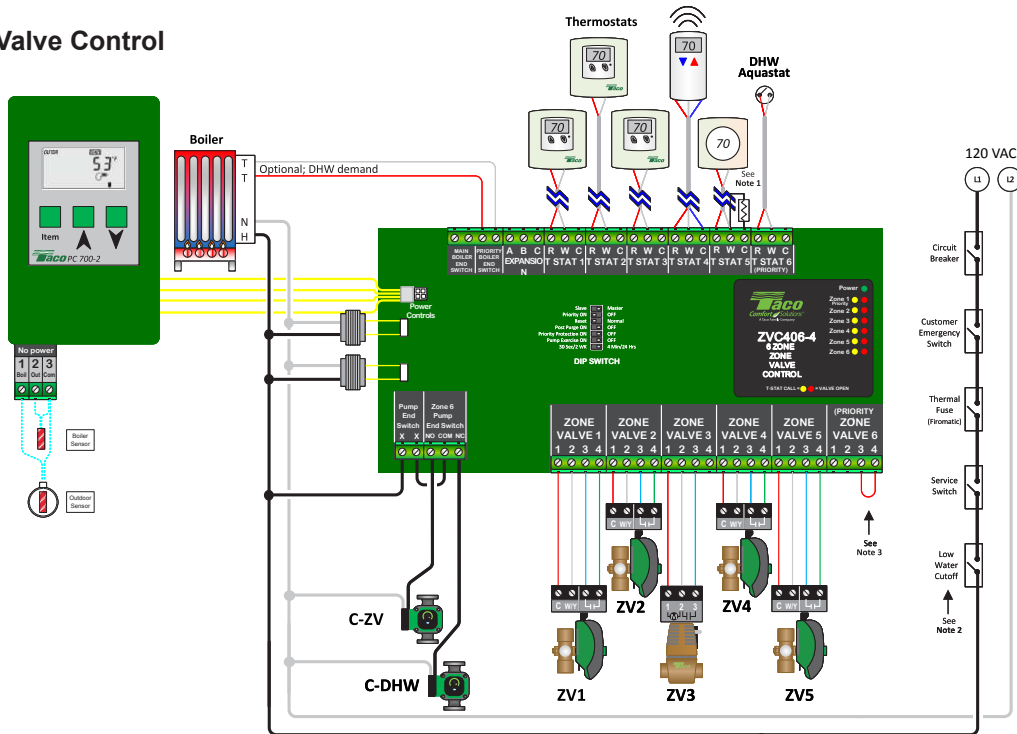
Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.



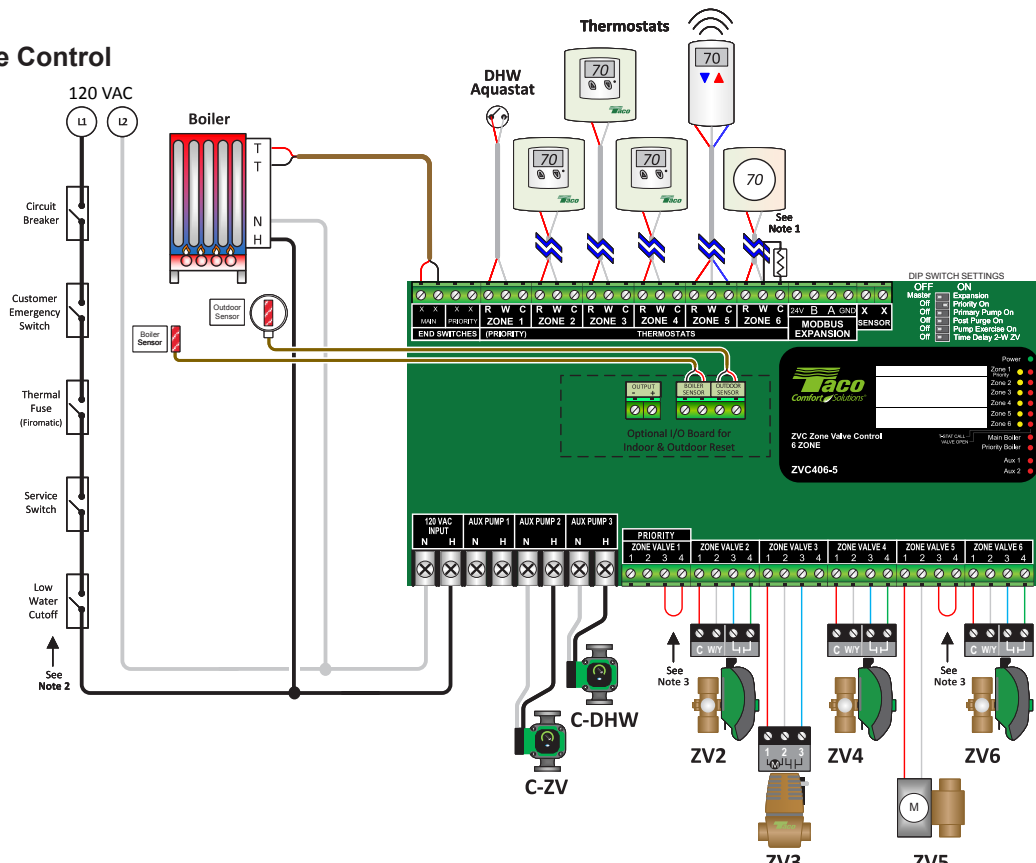
Replacing ZVC406-EXP-4 w/ PC700-2 with New ZVC406-5 Zone Valve Control with Outdoor Reset Control

Legacy Zone Valve Control



New Zone Valve Control

Note: Need Taco Control app to program outdoor reset parameters



Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

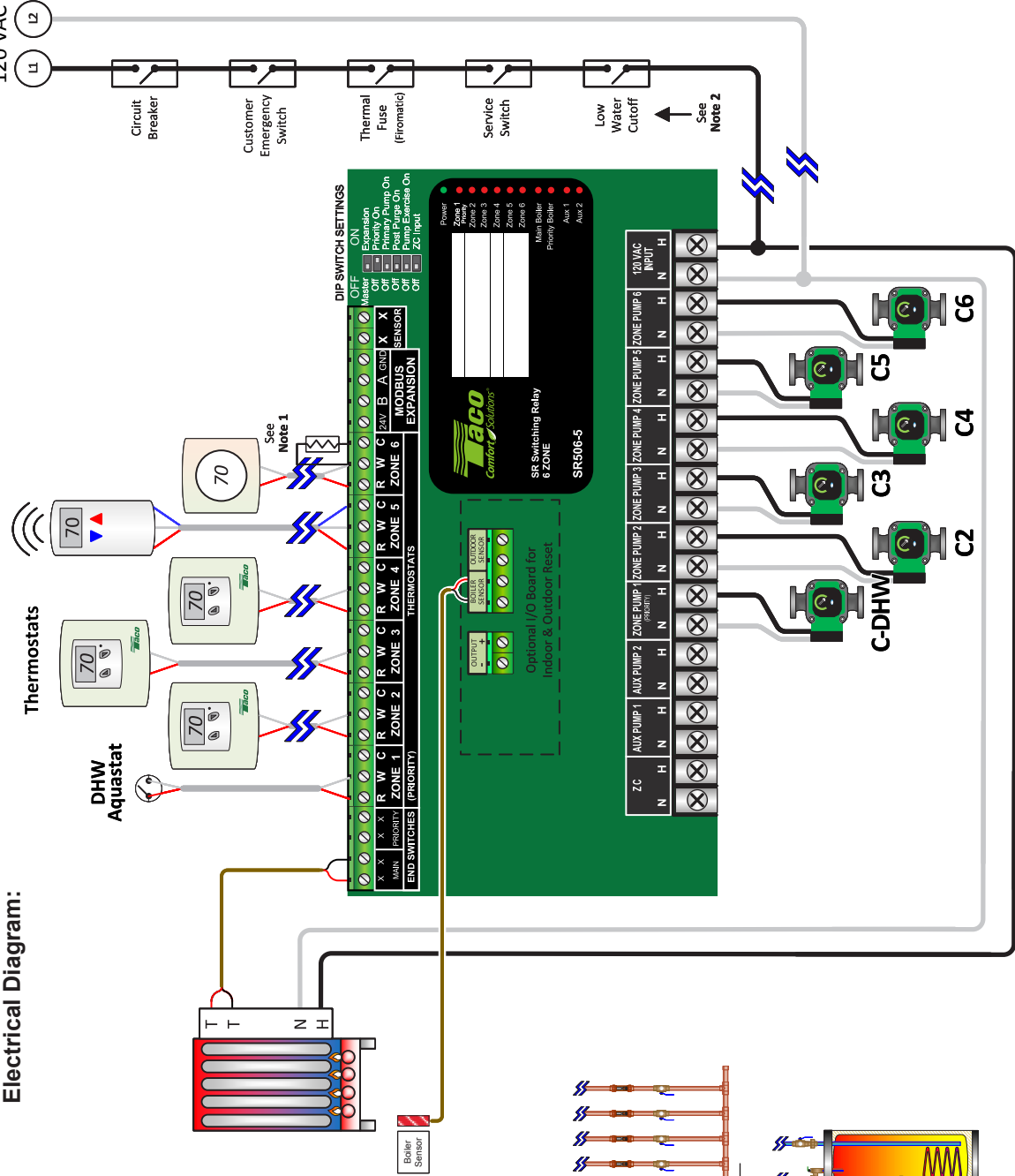
Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate.

Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

SR506-5 with PC800-5 Indoor Boiler Reset – On/Off Boiler

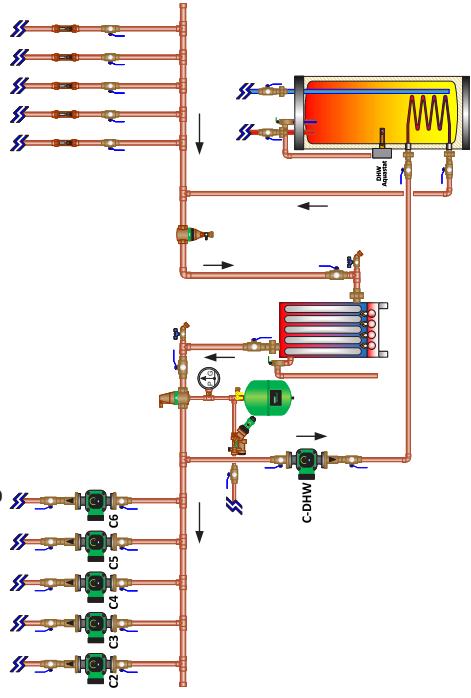
Electrical Diagram:



Zoning Method		Circulators
Total Number of Zones	6	
Space Heating Zones	5	
Indirect Water Heater	1	
Priority Zone Enabled	Yes	
Primary Circulator	No	
ZC and ZR Enabled	No	
Single or Multi-Temperature	1	
Special Functions Enabled	Yes	

*If Special Functions are enabled, you must use the Taco Control Mobile App for full functionality.

Mechanical Diagram:



Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.
Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.
Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

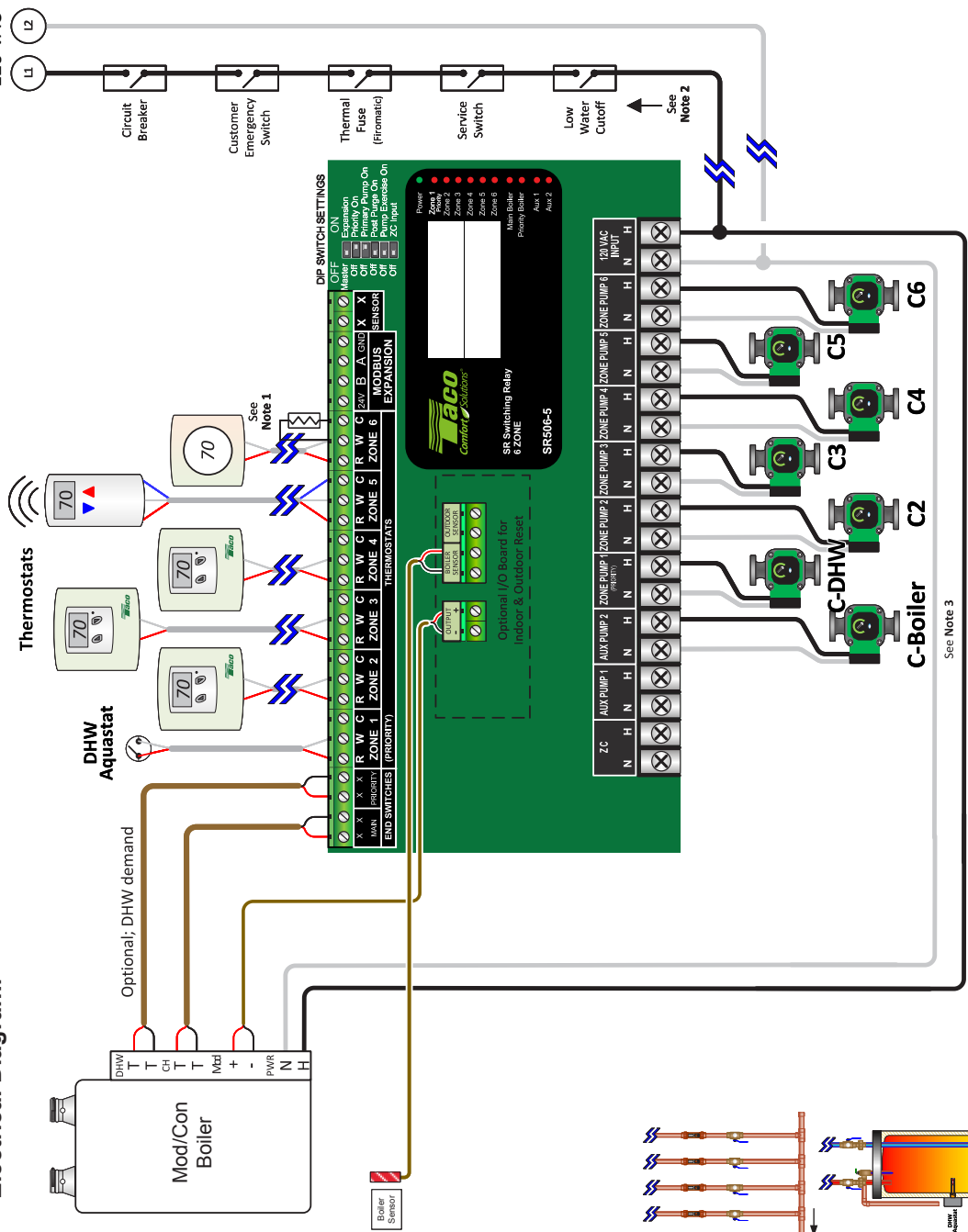


SR506-5 with PC800-5 Indoor Boiler Reset – Mod-Con Boiler

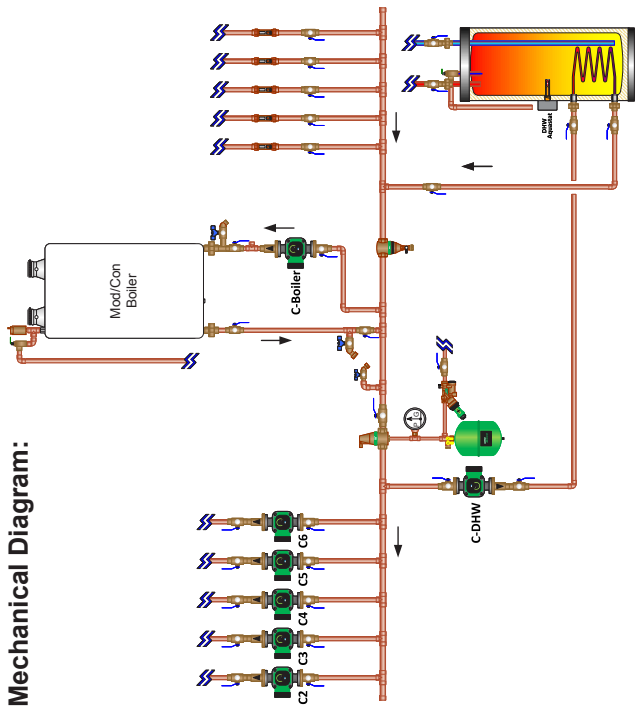
Zoning Method	Circulators
Total Number of Zones	6
Space Heating Zones	5
Indirect Water Heater	1
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	Yes

*If Special Functions are enabled, you must use the Taco Control Mobile App for full functionality.

Electrical Diagram:



Mechanical Diagram:



- Note 1:** Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.
- Note 2:** Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.
- Note 3:** Follow boiler manufacturer's recommendations on powering of boiler loop circulator. Some boilers require this circulator to be wired to the boiler operating control. Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

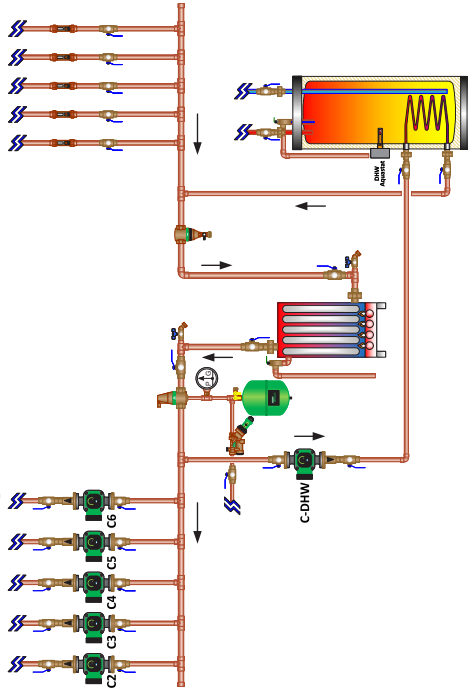


SR506-5 with PC800-5 Outdoor Boiler Reset – On/Off Boiler

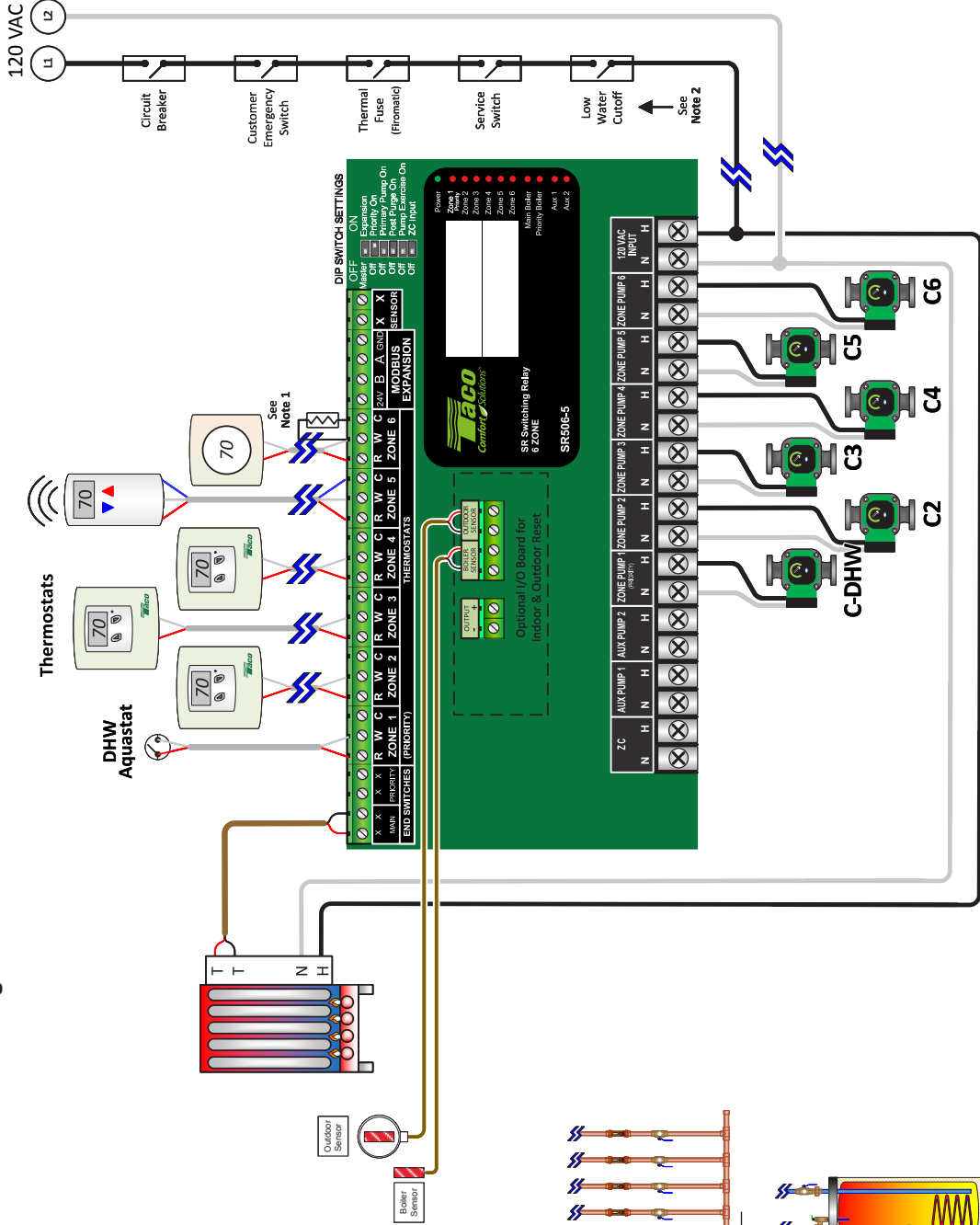
Zoning Method		Circulators
Total Number of Zones		6
Space Heating Zones		5
Indirect Water Heater		1
Priority Zone Enabled		Yes
Primary Circulator		No
ZC and ZR Enabled		No
Single or Multi-Temperature		1
Special Functions Enabled		Yes

*If Special Functions are enabled, you must use the Taco Control Mobile App for full functionality.

Mechanical Diagram:



Electrical Diagram:



Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.
Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.
 Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

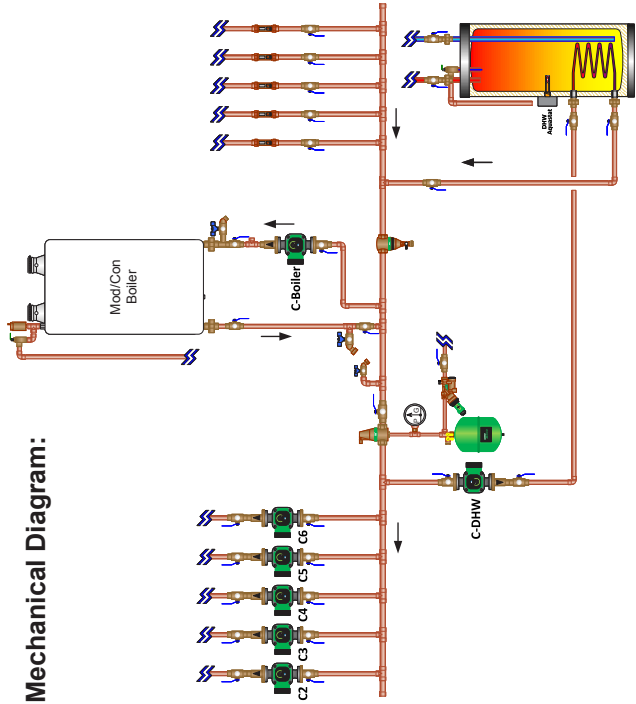


SR506-5 with PC800-5 Outdoor Boiler Reset – Mod-Con Boiler

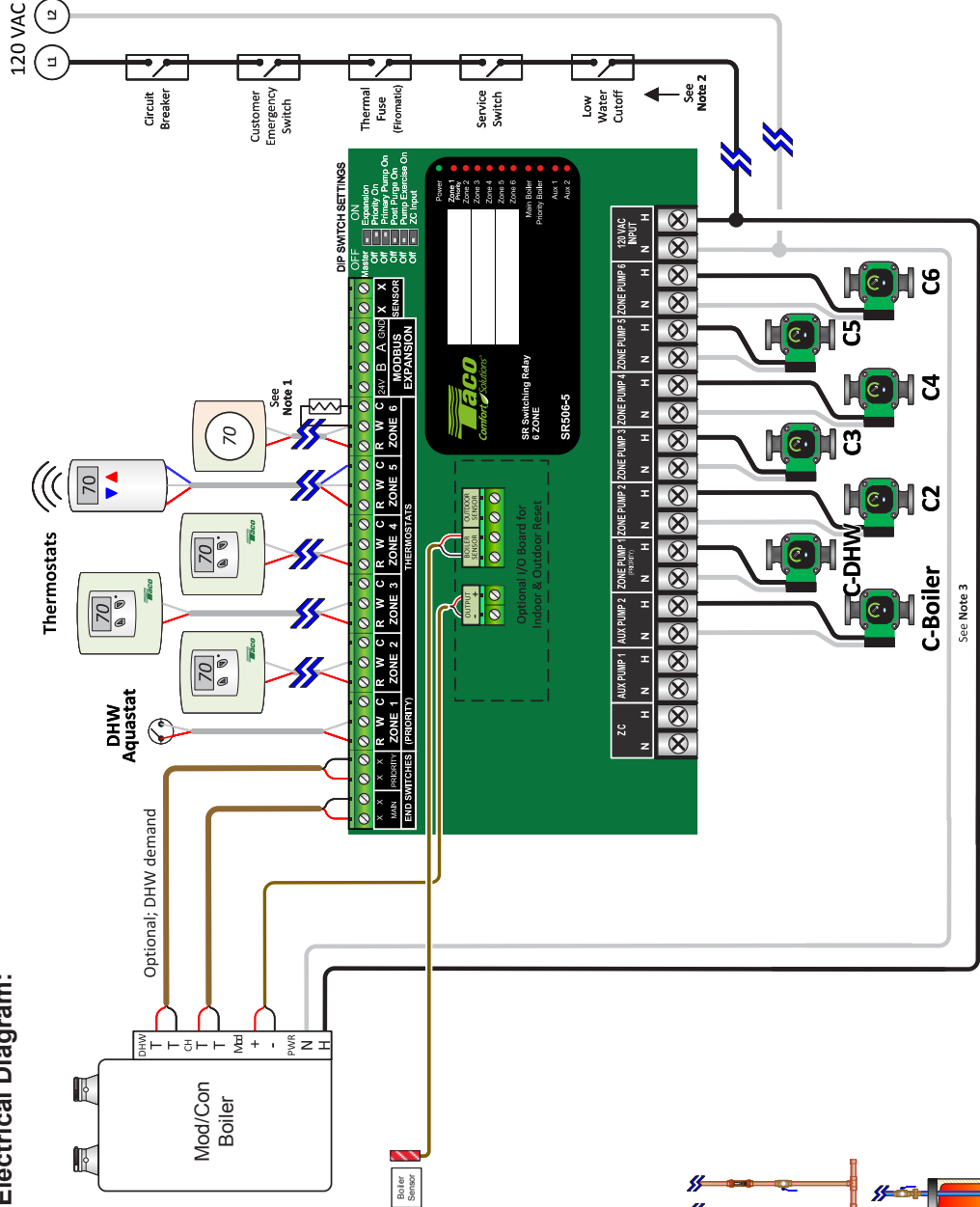
Zoning Method		Circulators
Total Number of Zones		6
Space Heating Zones		5
Indirect Water Heater		1
Priority Zone Enabled		Yes
Primary Circulator		Yes
ZC and ZR Enabled		No
Single or Multi-Temperature		1
Special Functions Enabled		Yes

*If Special Functions are enabled, you must use the Taco Control Mobile App for full functionality.

Mechanical Diagram:



Electrical Diagram:



Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.
Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.
Note 3: Follow boiler manufacturer's recommendations on powering of boiler loop circulator. Some boilers require this circulator to be wired to the boiler operating control. Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.



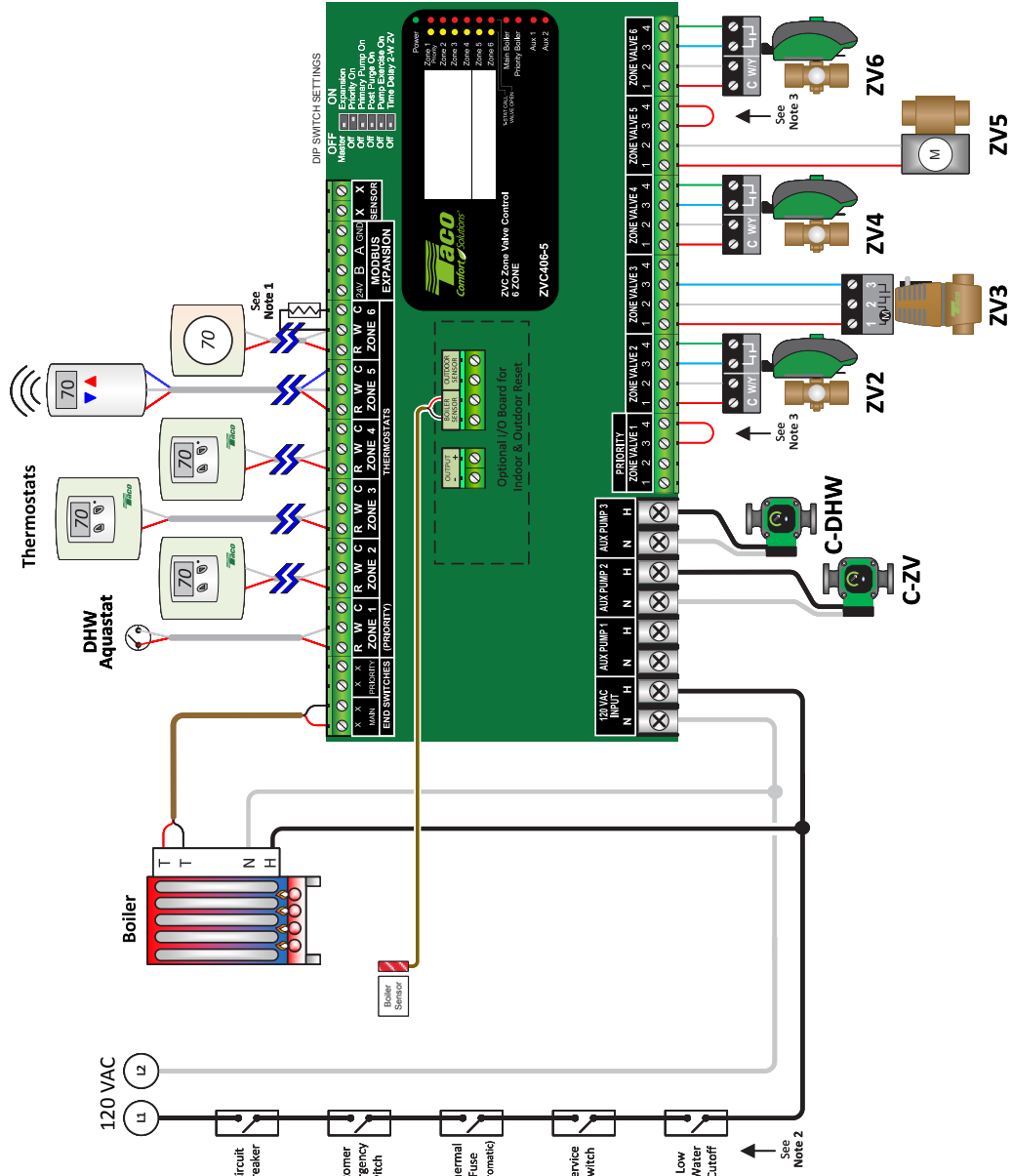
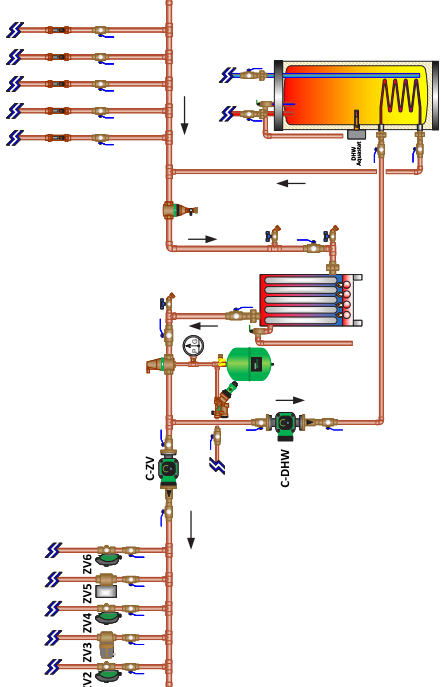
ZVC406-5 with PC800-5 Indoor Boiler Reset – On/Off Boiler

Electrical Diagram:

Zoning Method	ZV & Circ
Total Number of Zones	6
Space Heating Zones	5 - ZV
Indirect Water Heater	1 - Circ
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	Yes

*If Special Functions are enabled, you must use the Taco Control Mobile App for full functionality.

Mechanical Diagram:



Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.
Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.
Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate. Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

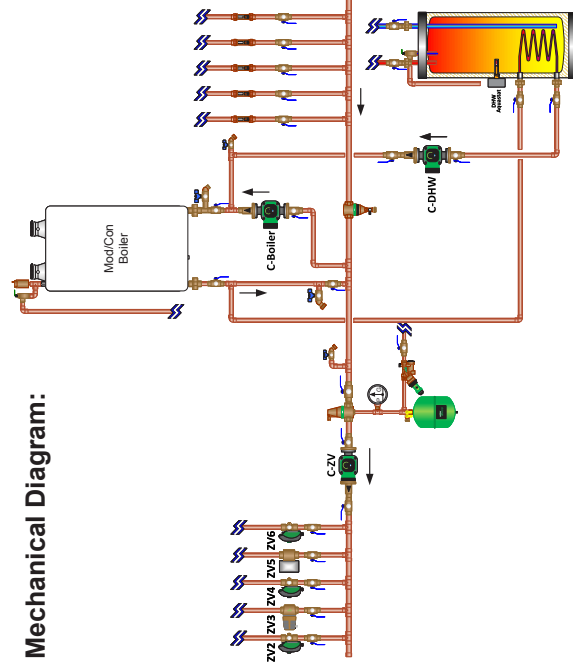


ZVC406-5 with PC800-5 Indoor Boiler Reset – Mod-Con Boiler

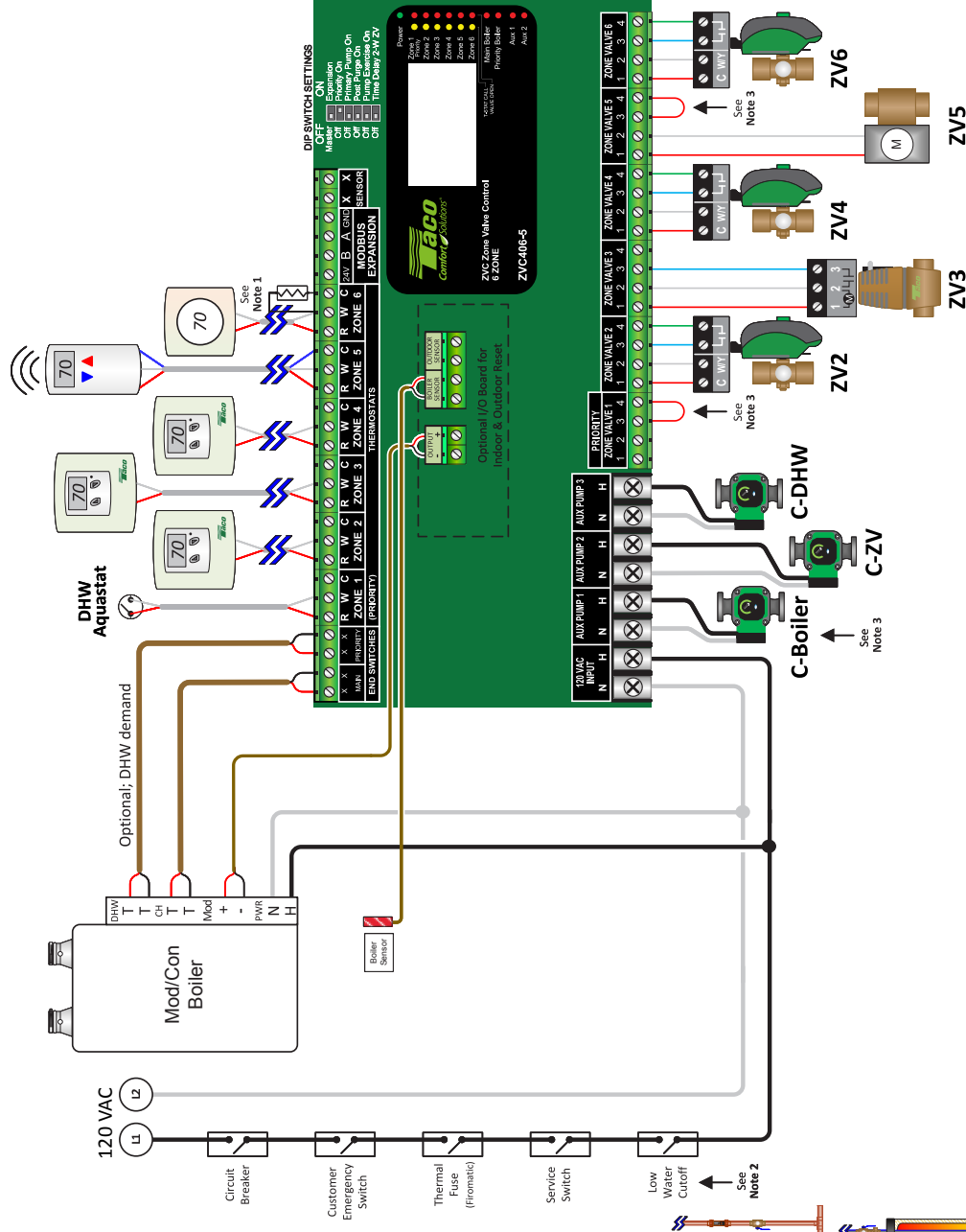
Zoning Method	ZV & Circ
Total Number of Zones	6
Space Heating Zones	5 - ZV
Indirect Water Heater	1 - Circ
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	Yes

*If Special Functions are enabled, you must use the Taco Control Mobile App for full functionality.

Mechanical Diagram:



Electrical Diagram:



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Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate.

Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

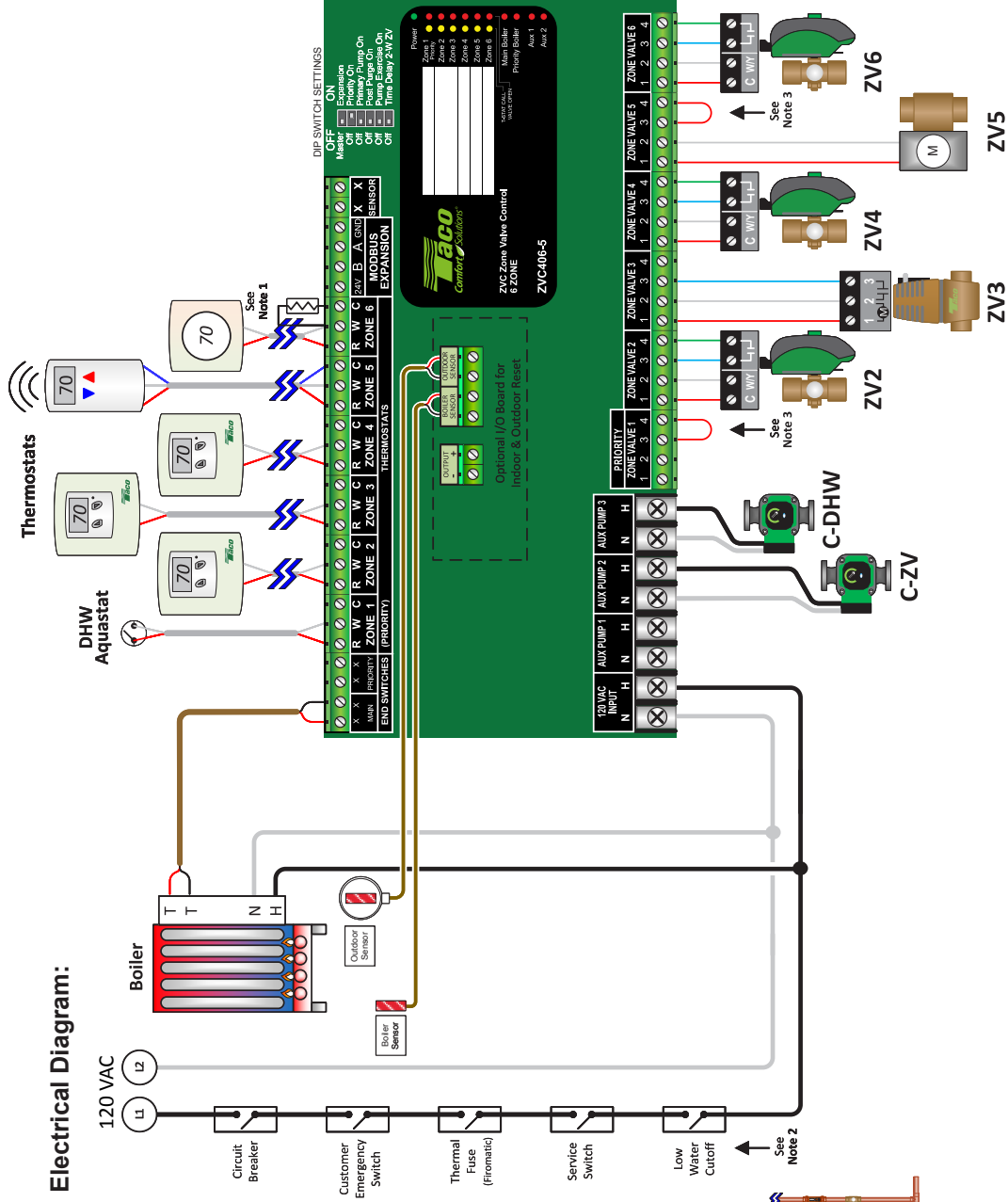


ZVC406-5 with PC800-5 Outdoor Boiler Reset On/Off Boiler

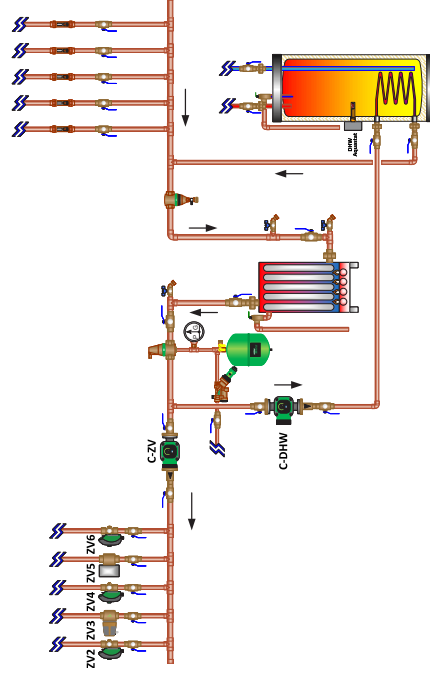
Zoning Method	ZV & Circ
Total Number of Zones	6
Space Heating Zones	5 - ZV
Indirect Water Heater	1 - Circ
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	Yes

*If Special Functions are enabled, you must use the Taco Control Mobile App for full functionality.

Electrical Diagram:



Mechanical Diagram:



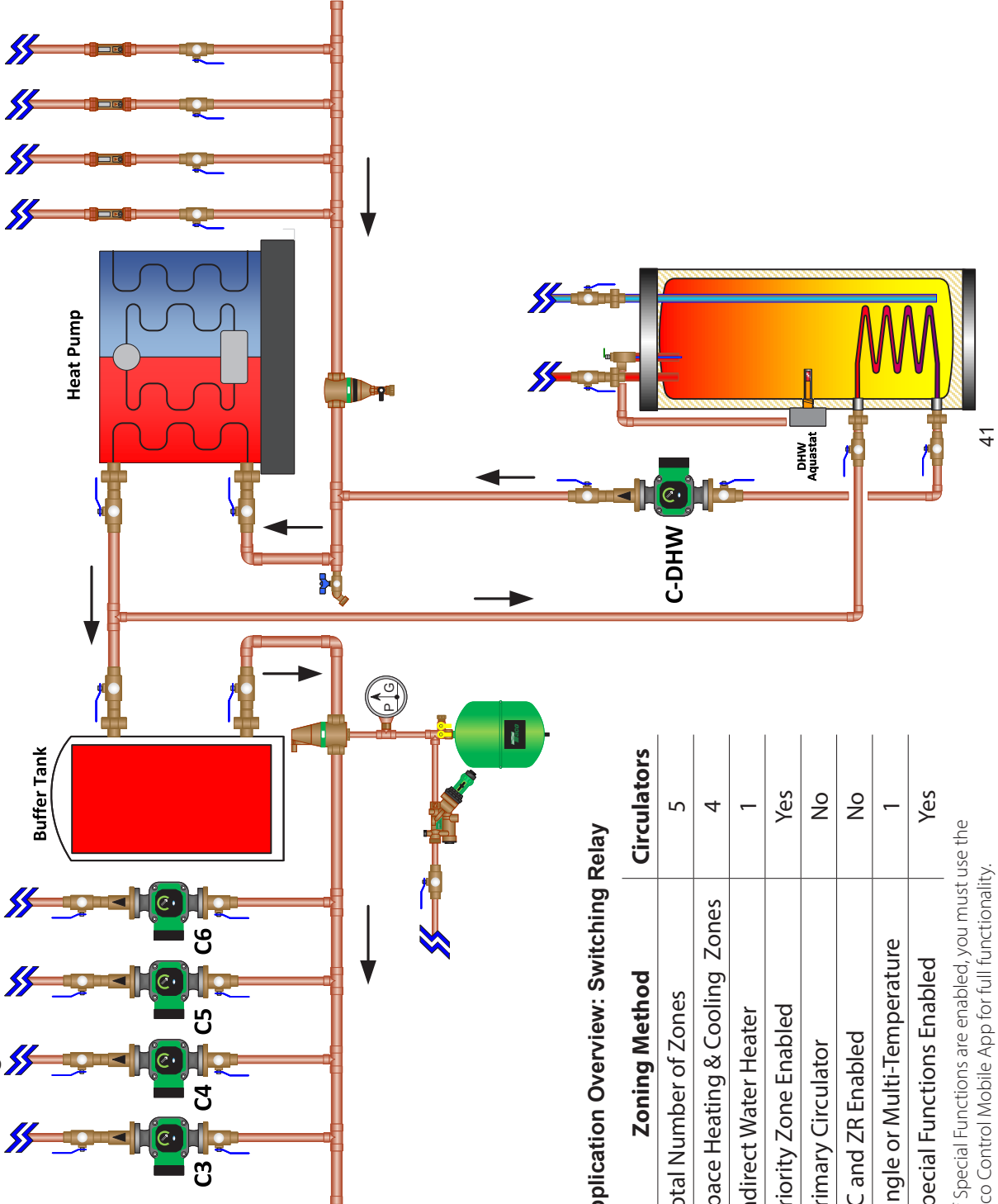
Note 1: Some “Power Stealing” style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate. Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

SR506-5 with Heat Pump and 2 Port Buffer Tank - Heating, Cooling and DHW

Mechanical Diagram:



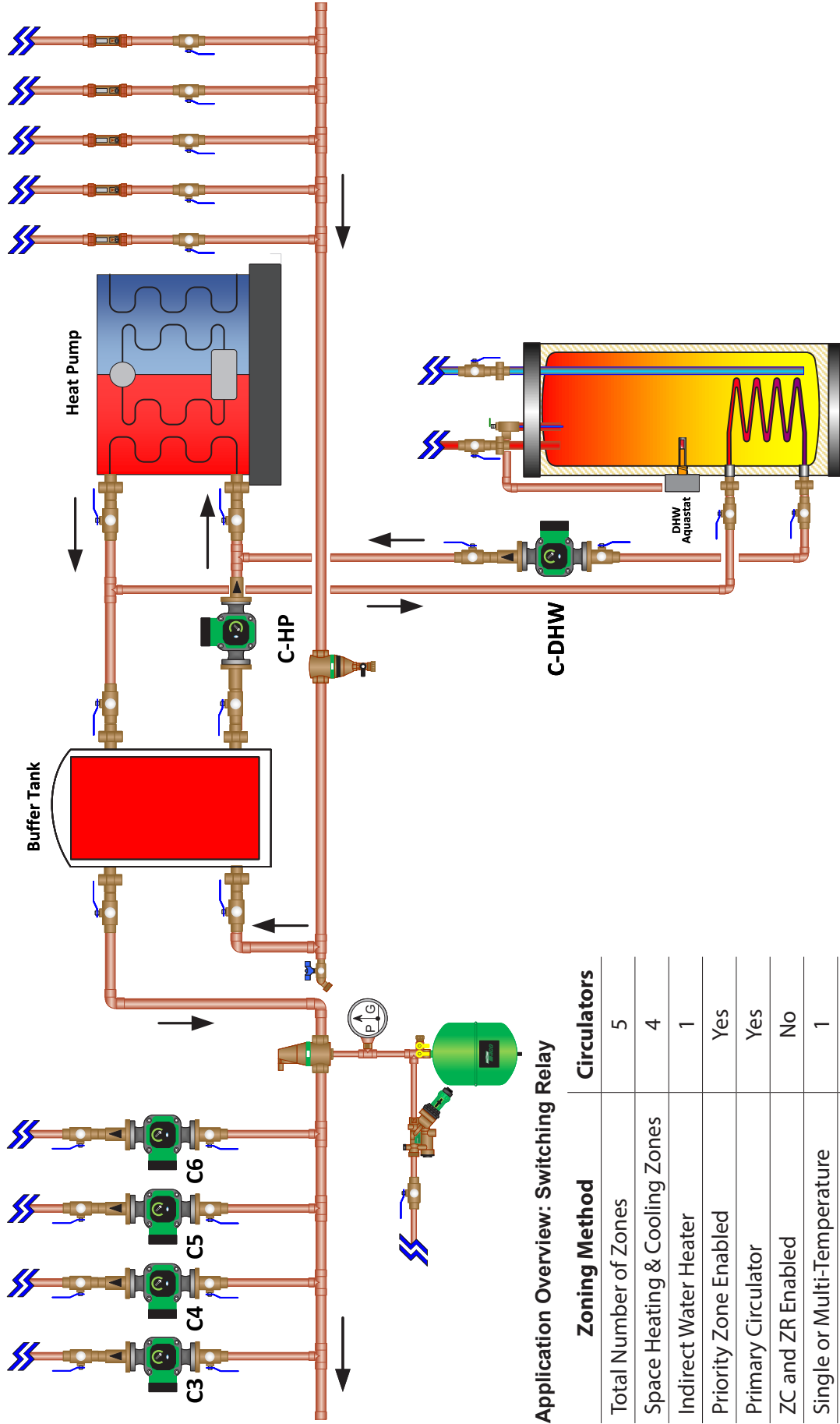
Application Overview: Switching Relay

Zoning Method	Circulators
Total Number of Zones	5
Space Heating & Cooling Zones	4
Indirect Water Heater	1
Priority Zone Enabled	Yes
Primary Circulator	No
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	Yes

*If Special Functions are enabled, you must use the Taco Control Mobile App for full functionality.

SR506-5 with Heat Pump and 4 Port Buffer Tank - Heating, Cooling and DHW

Mechanical Diagram:



Application Overview: Switching Relay

Zoning Method	Circulators
Total Number of Zones	5
Space Heating & Cooling Zones	4
Indirect Water Heater	1
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	Yes

*If Special Functions are enabled, you must use the Taco Control Mobile App for full functionality.





Heating & Cooling Thermostat

Com & O or B/O terminal energized on cooling

Note: If air handler is only doing cooling, then the O or B/O connection is not required

Install wire jumper between Y and left T terminal of Freeze Protection

HAFC201-5 Hydro Air Fan Control

Air Handler w/ Water Coil

To: Air Handler Power Supply

Heating Only Thermostats

DHW Aquastat

120 VAC

Circuit Breaker

Customer Emergency Switch

Thermal Fuse (From/to)

Service Switch

Low Water Cutoff

DIP SWITCH LEGEND

DIP SWITCH SETTINGS

Optional I/O Board for Indoor & Outdoor Reset

SR506-5

C-DHW

C3

C4

C5

C6

Requires app adjustment for controlling C-HP

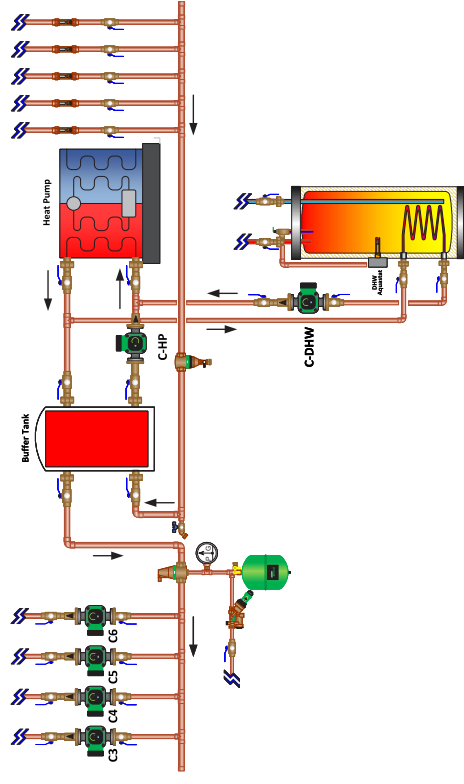
(Not used with 2 port buffer tank)

SR506-5 with Heat Pump - Radiant Heating and Cooling with DHW

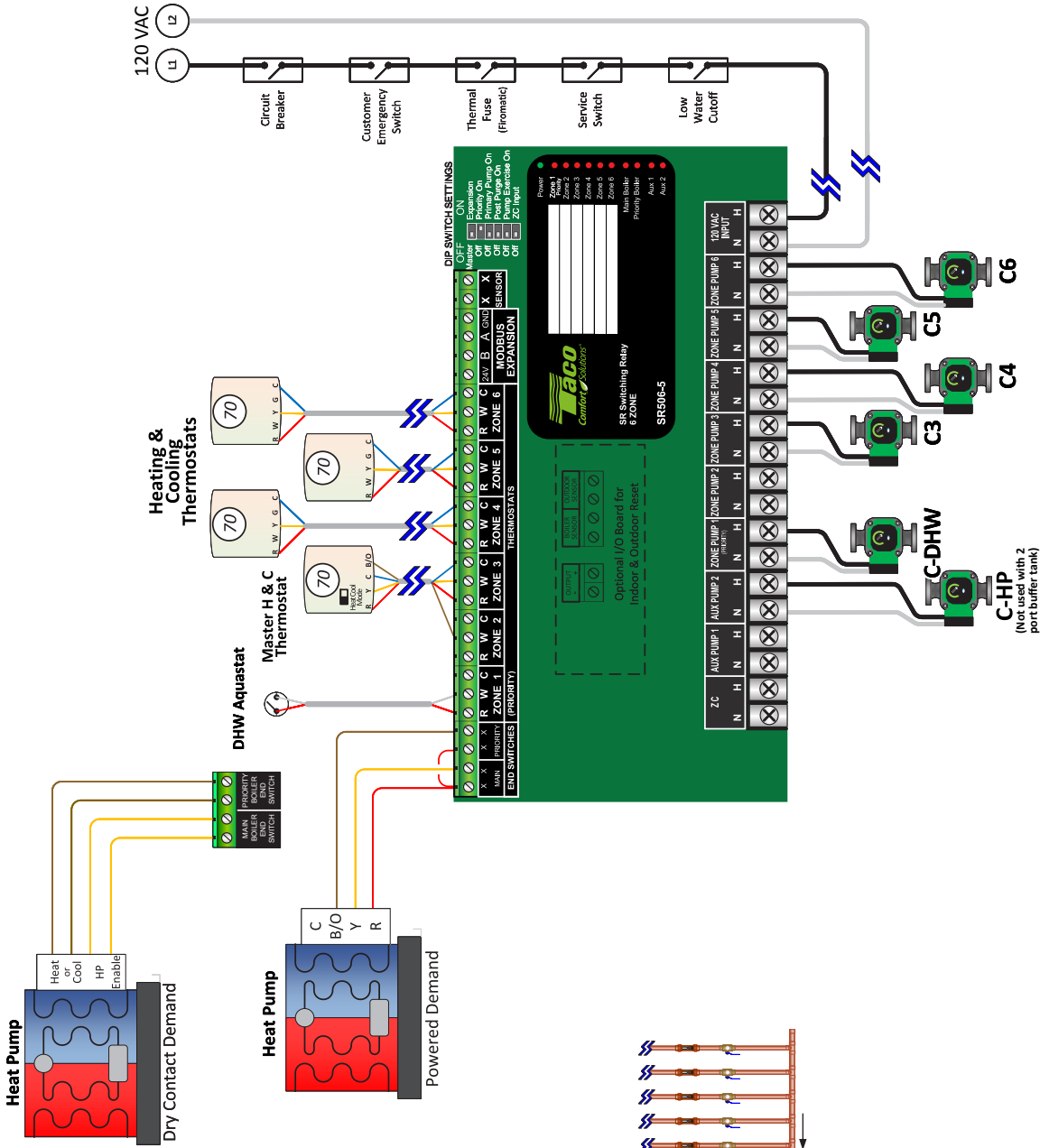
Zoning Method	Circulators
Total Number of Zones	5
Space Heating & Cooling Zones	4
Indirect Water Heater	1
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	Yes

*If Special Functions are enabled, you must use the Taco Control Mobile App for full functionality.

Mechanical Diagram:

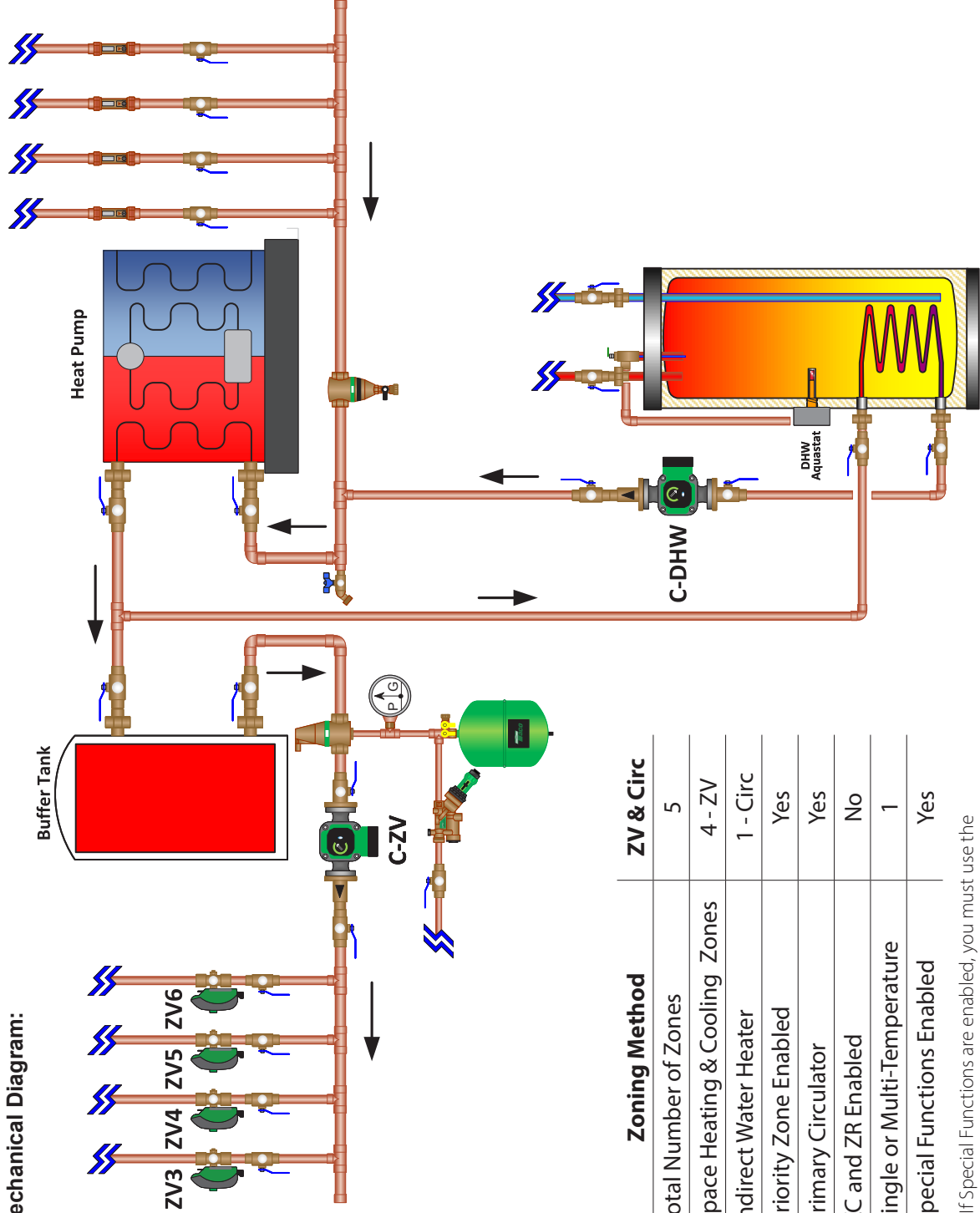


Electrical Diagram:



ZVC406-5 with Heat Pump and 2 Port Buffer Tank - Heating, Cooling and DHW

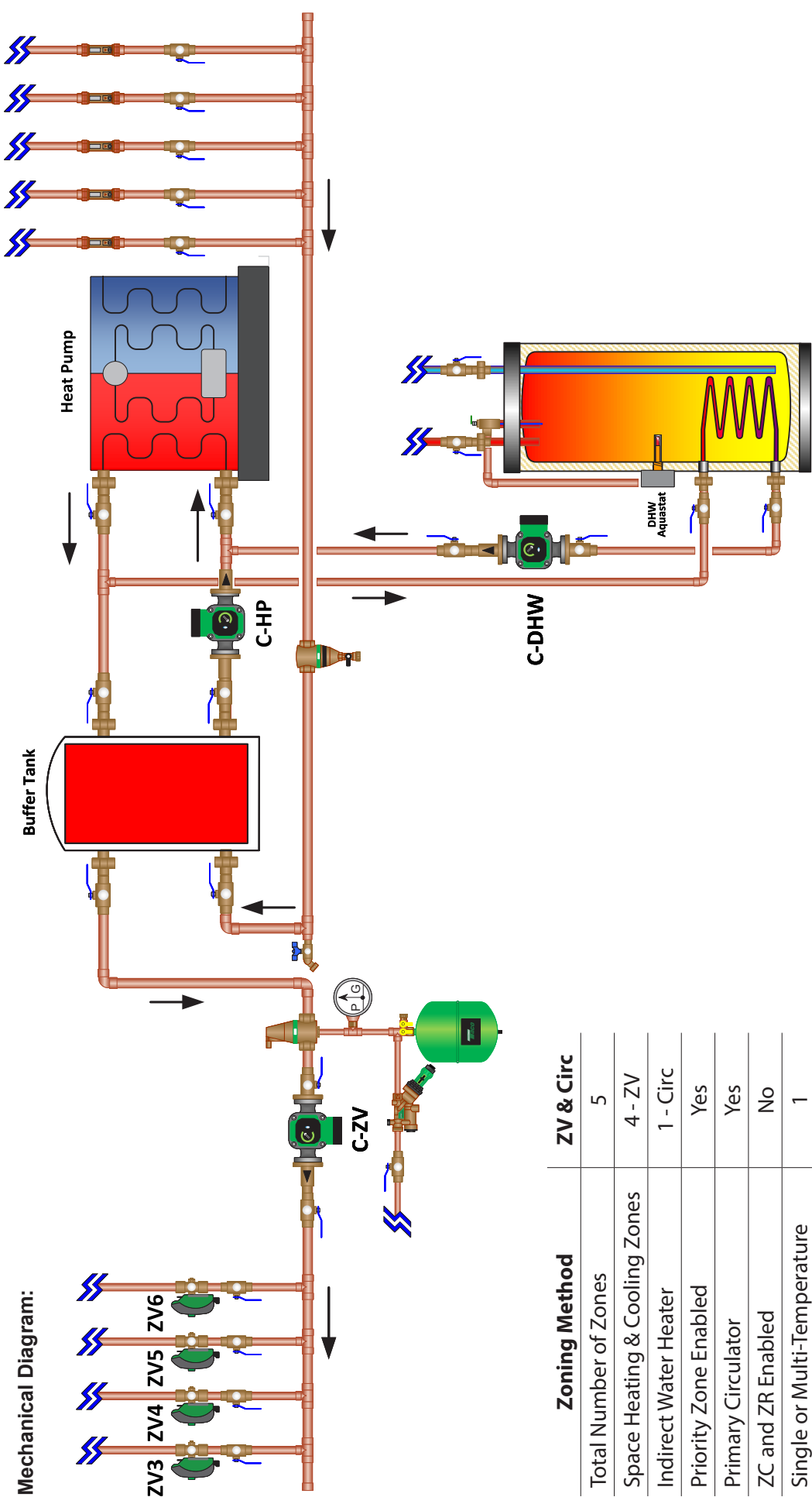
Mechanical Diagram:



Zoning Method	ZV & Circ
Total Number of Zones	5
Space Heating & Cooling Zones	4 - ZV
Indirect Water Heater	1 - Circ
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	Yes

*If Special Functions are enabled, you must use the Taco Control Mobile App for full functionality.

ZVC406-5 with Heat Pump and 4 Port Buffer Tank - Heating, Cooling and DHW



Zoning Method	ZV & Circ
Total Number of Zones	5
Space Heating & Cooling Zones	4 - ZV
Indirect Water Heater	1 - Circ
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	Yes

*If Special Functions are enabled, you must use the Taco Control Mobile App for full functionality.

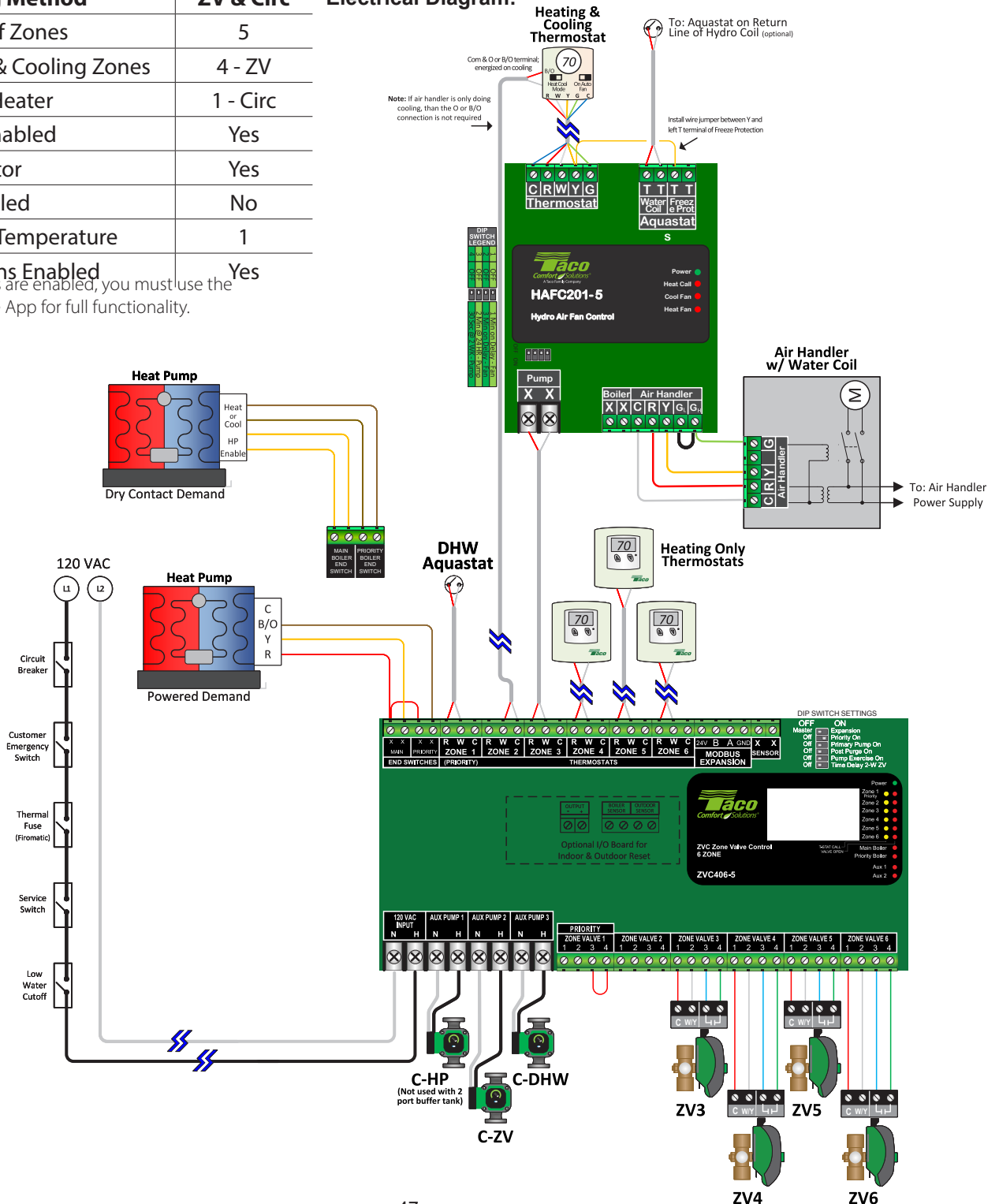


ZVC406-5 with Heat Pump and 2 or 4 Port Buffer Tank - Heating, Cooling and DHW

Zoning Method	ZV & Circ
Total Number of Zones	5
Space Heating & Cooling Zones	4 - ZV
Indirect Water Heater	1 - Circ
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	Yes

*If Special Functions are enabled, you must use the Taco Control Mobile App for full functionality.

Electrical Diagram:

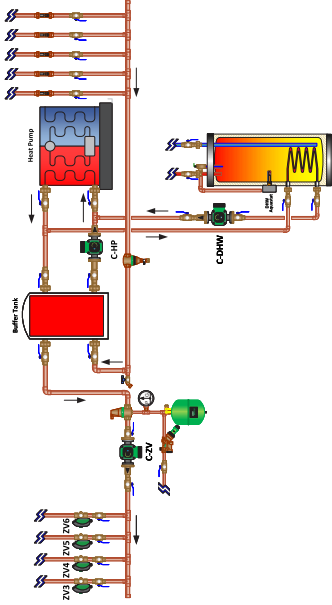


ZVC406-5 with Heat Pump - Radiant Heating and Cooling with DHW

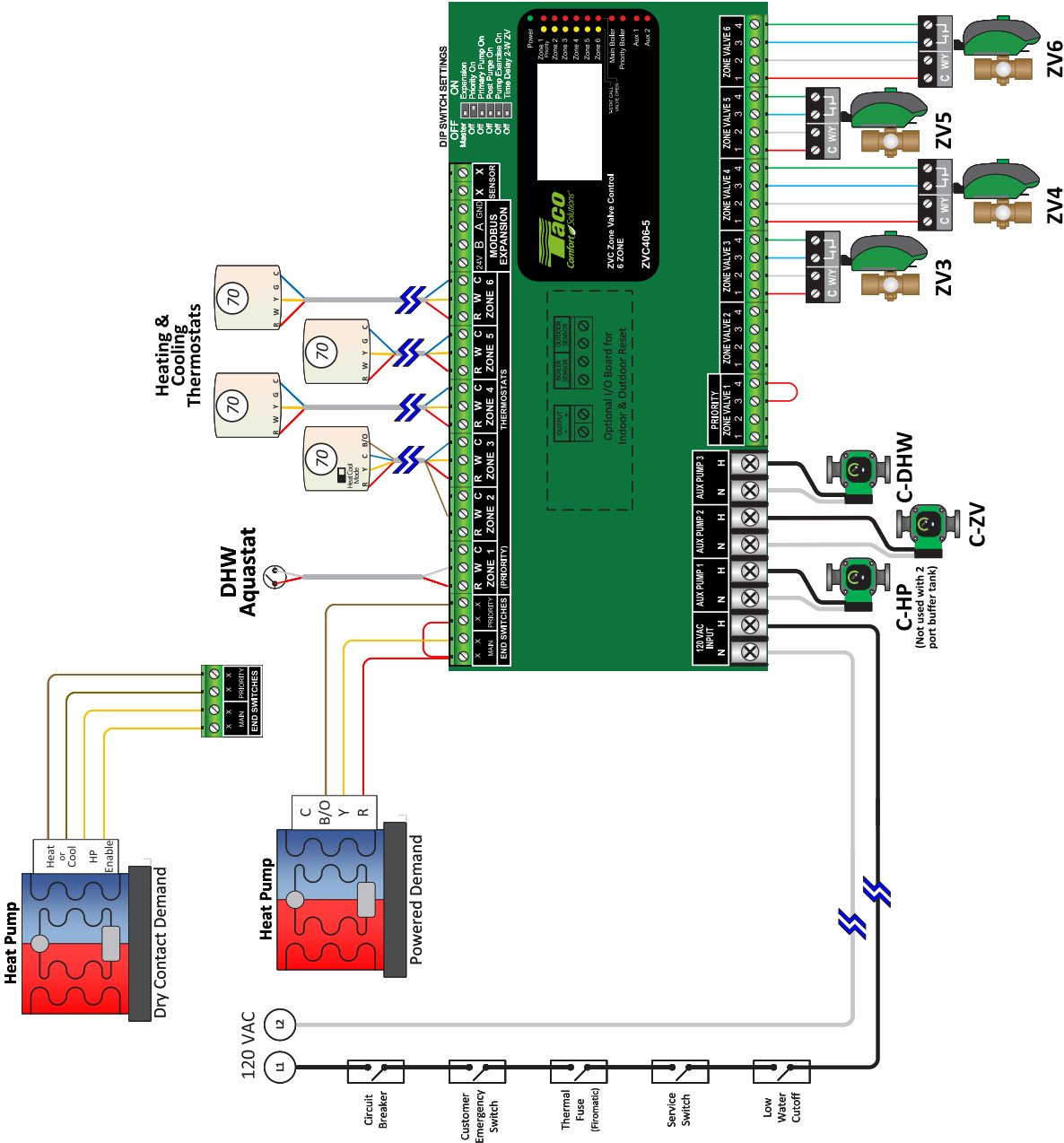
Zoning Method	Circulators
Total Number of Zones	5
Space Heating & Cooling Zones	4 - ZV
Indirect Water Heater	1 - Circ
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	Yes

*If Special Functions are enabled, you must use the Taco Control Mobile App for full functionality.

Mechanical Diagram:



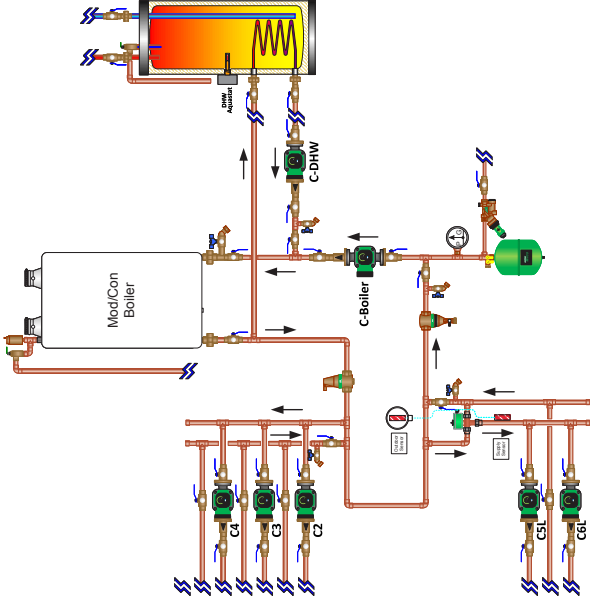
Electrical Diagram:



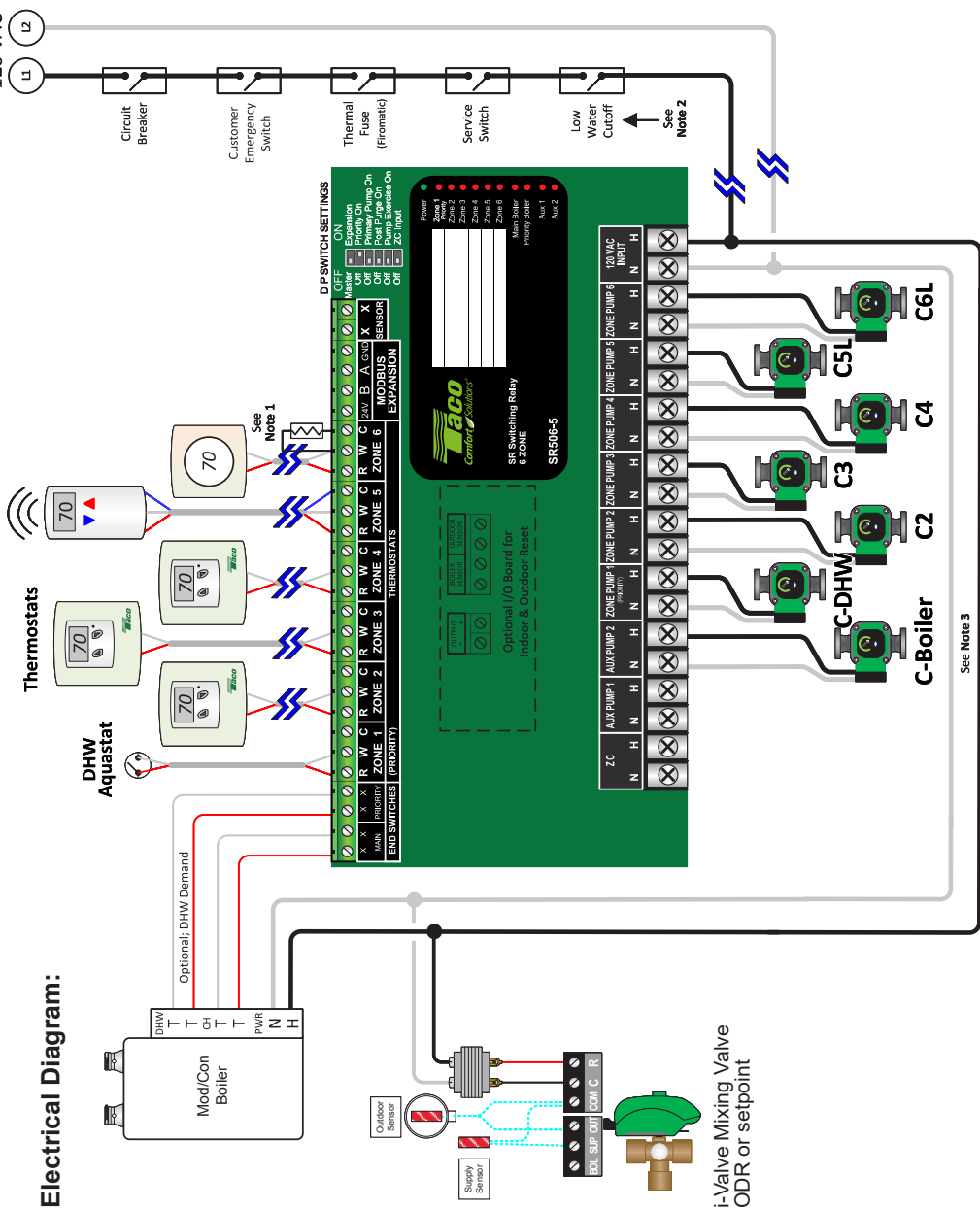
SR506-5 – Multi-Temperature System – 3 High-Temp Zones, 2 Low-Temp Zones & DHW; Primary/Secondary

Zoning Method	Circulators
Total Number of Zones	6
Space Heating Zones	5
Indirect Water Heater	1
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	2 Temp
Special Functions Enabled	No

Mechanical Diagram:



Electrical Diagram:



Note 1: Some “Power Stealing” style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.
Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.
Note 3: Follow boiler manufacturer’s recommendations on powering of boiler loop circulator. Some boilers require this circulator to be wired to the boiler operating control. Conceptual Sketches Only, refer to individual manufacturer’s installation instructions for additional details. Local codes shall prevail.

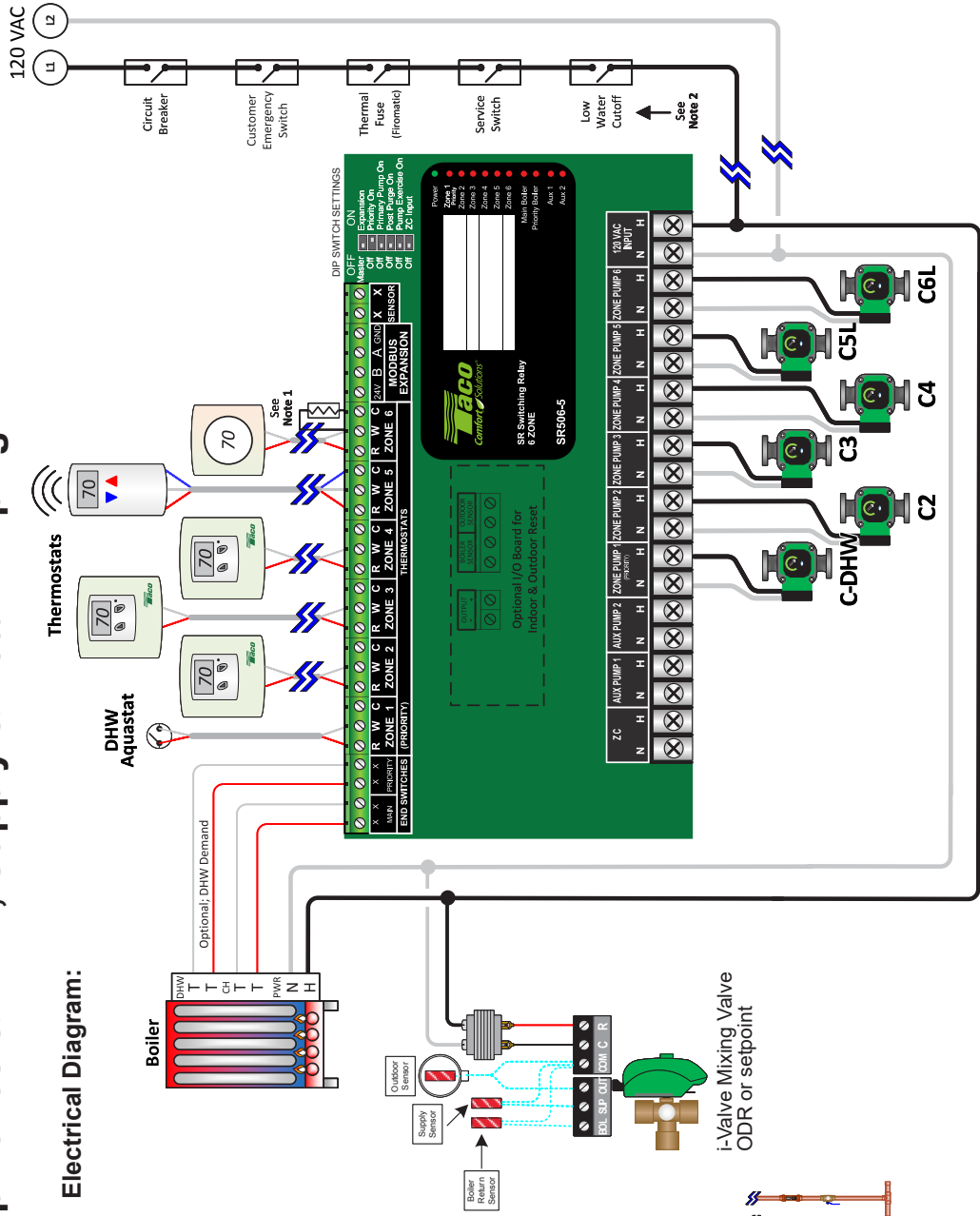


SR506-5 – Multi-Temperature System –

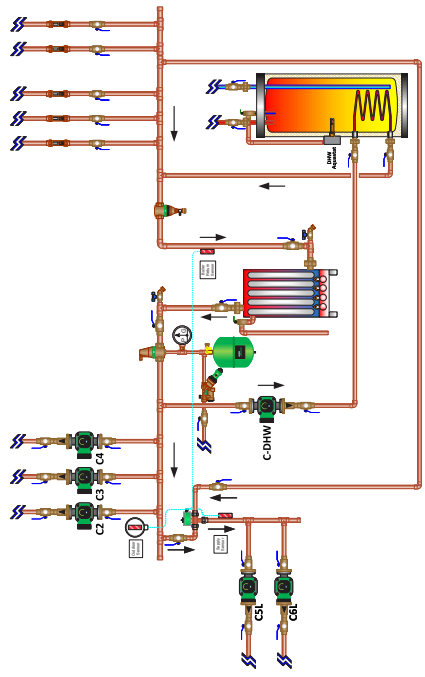
3 High-Temp Zones, 2 Low-Temp Zones & DHW; Supply & Return Piping

Zoning Method		Circulators
Total Number of Zones		6
Space Heating Zones		5
Indirect Water Heater		1
Priority Zone Enabled		Yes
Primary Circulator		No
ZC and ZR Enabled		No
Single or Multi-Temperature		2 Temp
Special Functions Enabled		No

Electrical Diagram:



Mechanical Diagram:



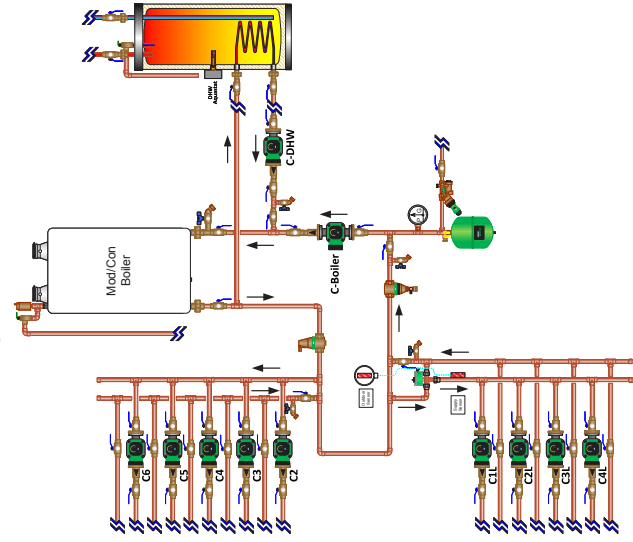
Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.
Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO ratings.
Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.



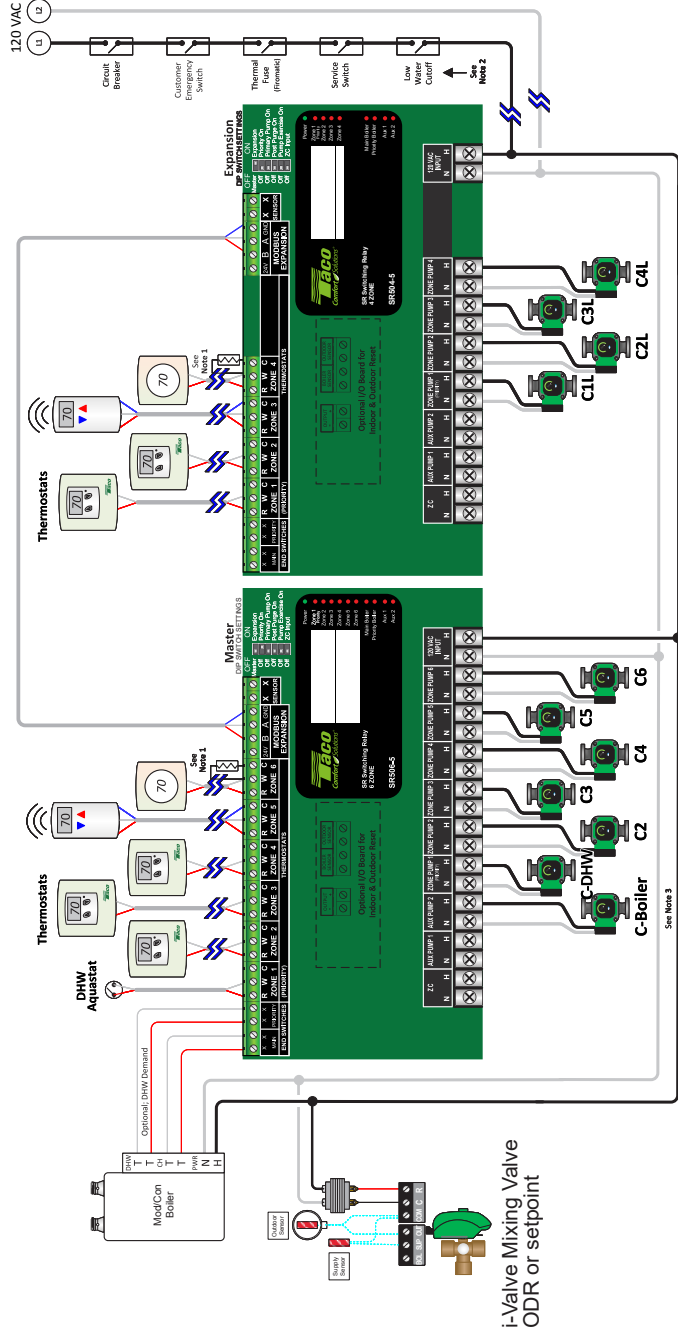
SR506-5 & SR504-5 – Multi-Temperature System with High & Low Temperatures + DHW; Primary/Secondary

Zoning Method		Circulators
Total Number of Zones		10
Space Heating Zones		9
Indirect Water Heater		1
Priority Zone Enabled		Yes
Primary Circulator		Yes
ZC and ZR Enabled		No
Single or Multi-Temperature		2 Temp
Special Functions Enabled		No

Mechanical Diagram:



Electrical Diagram:



Note 1: Some “Power Stealing” style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.
Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.
Note 3: Follow boiler manufacturer’s recommendations on powering of boiler loop circulator. Some boilers require this circulator to be wired to the boiler operating control. Conceptual Sketches Only, refer to individual manufacturer’s installation instructions for additional details. Local codes shall prevail.

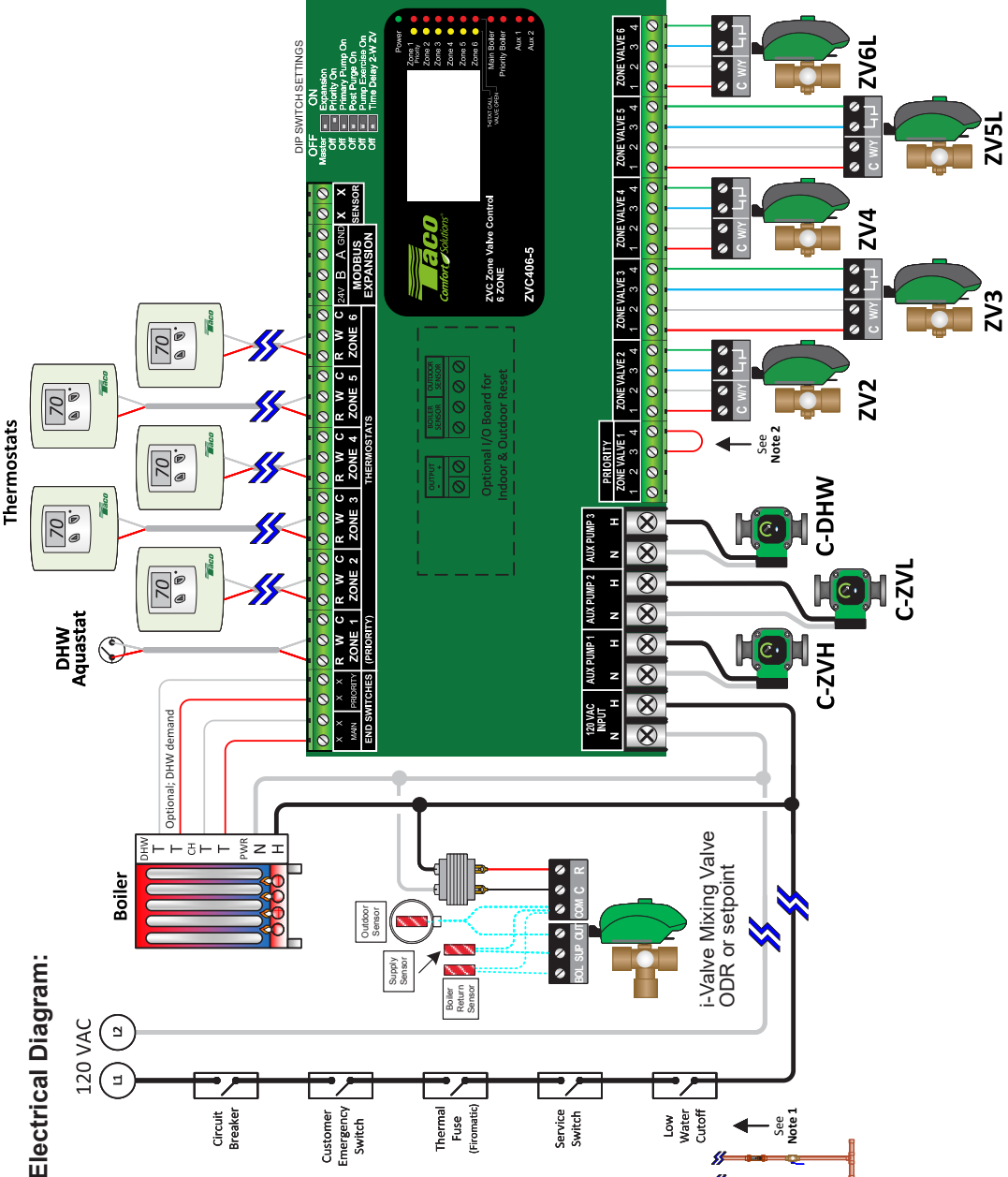
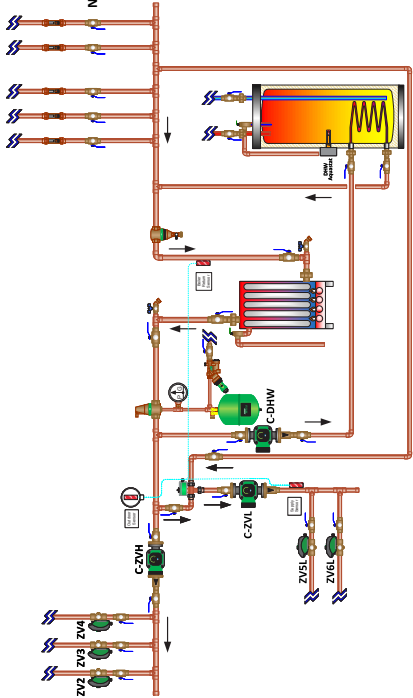


ZVC406-5 – Multi-Temperature System – 3 High-Temp Zones, 2 Low-Temp Zones & DHW; Supply & Return Piping

Zoning Method	ZV & Circ
Total Number of Zones	6
Space Heating Zones	5 - ZV
Indirect Water Heater	1 - Circ
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	2 Temp
Special Functions Enabled	Yes

*If Special Functions are enabled, you must use the Taco Control Mobile App for full functionality.

Mechanical Diagram:



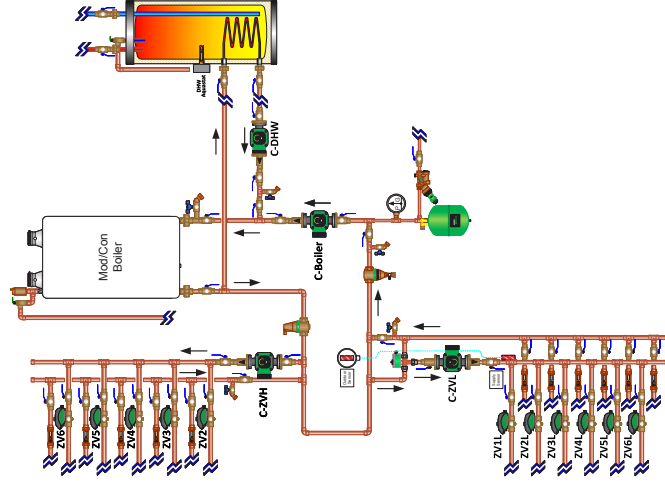
Note 1: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.
Note 2: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate. Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.



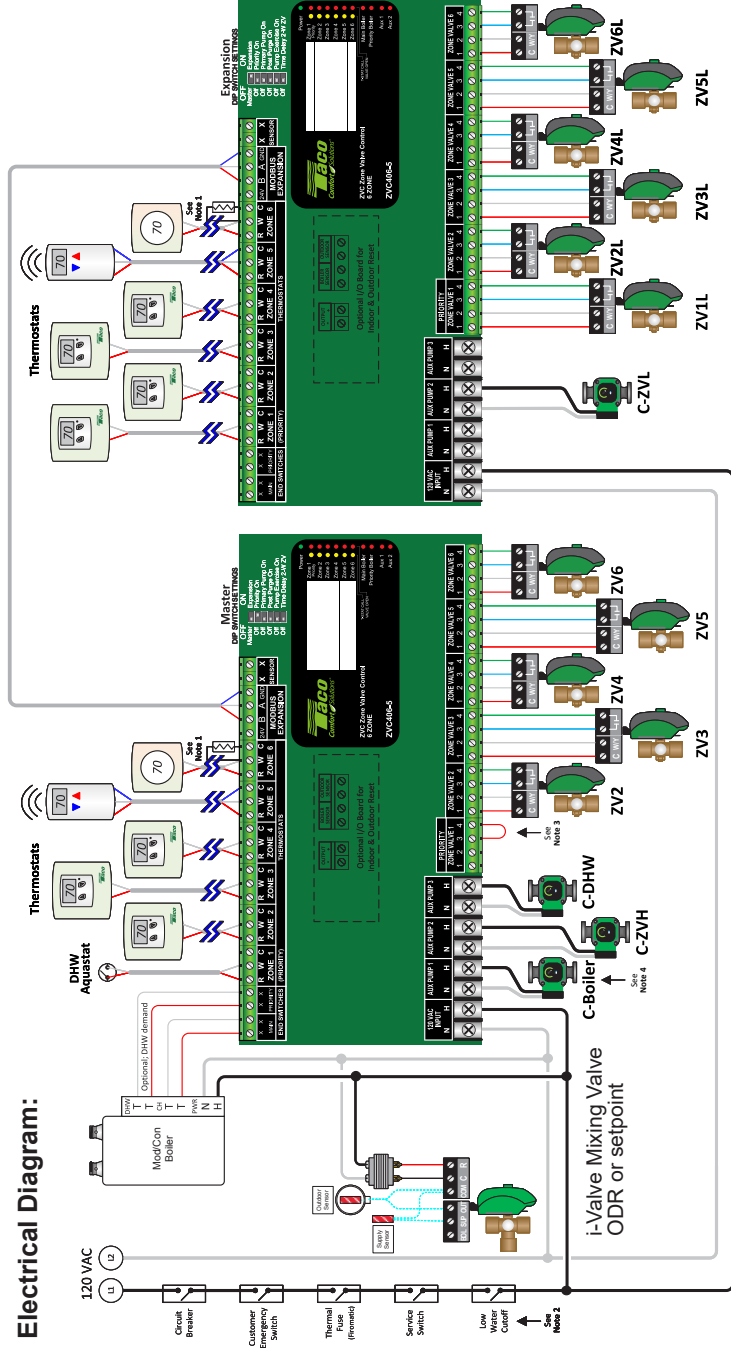
2X ZVC406-5 – Multi-Temperature System – 5 High-Temp Zones, 6 Low-Temp Zones & DHW; Primary/Secondary

Zoning Method	ZV & Circ
Total Number of Zones	12
Space Heating Zones	11 - ZV
Indirect Water Heater	1 - Circ
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	2 Temp
Special Functions Enabled	No

Mechanical Diagram:



Electrical Diagram:



Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

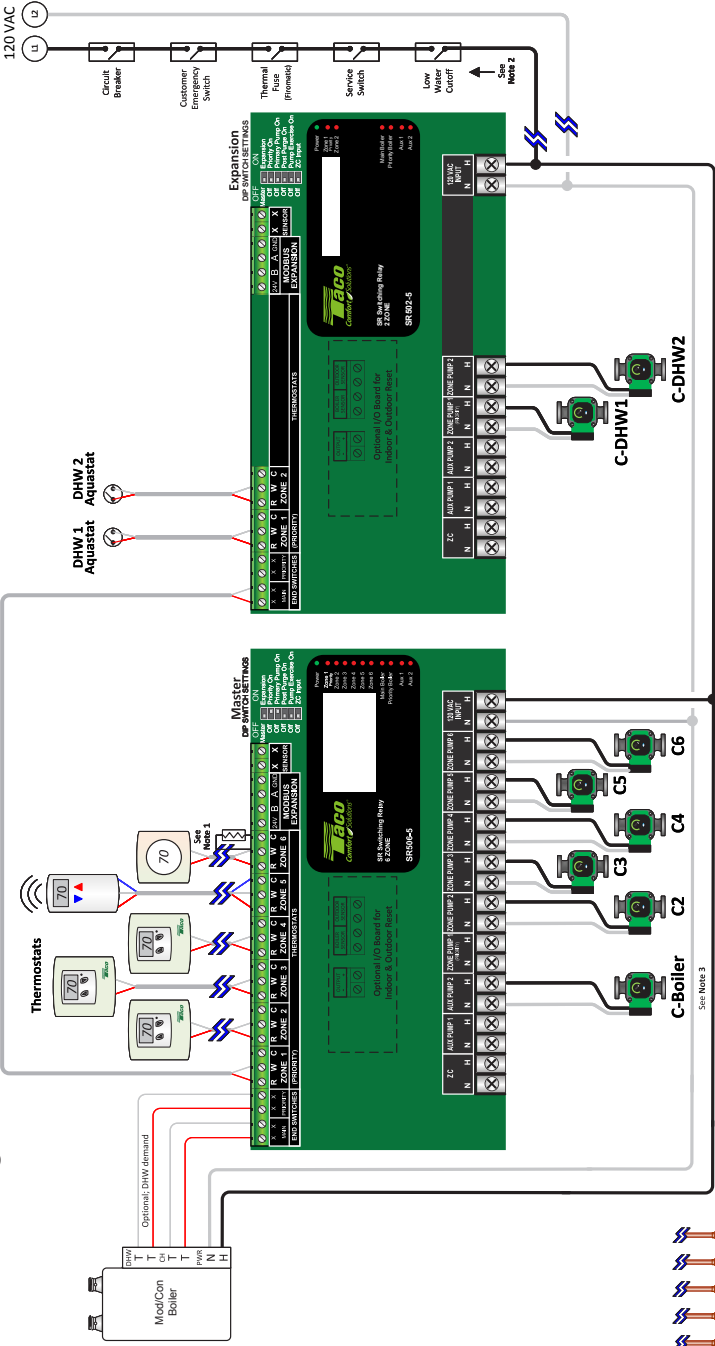
Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate.

Note 4: Follow boiler manufacturers recommendations on powering of boiler loop circulator. Some boilers require this circulator to be wired to the boiler operating control. Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

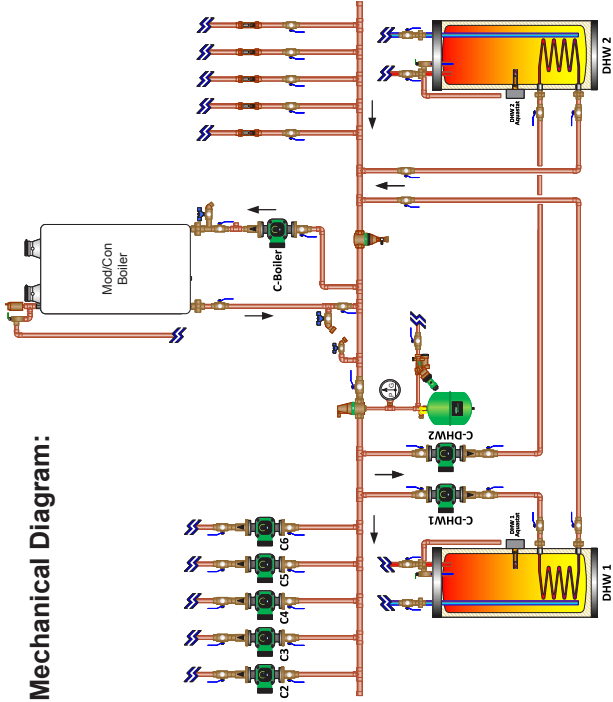
SR506-5 & SR502-5 with Two DHWs; Primary/Secondary

Zoning Method **Circulators** **Electrical Diagram:**

Total Number of Zones	7
Space Heating Zones	5
Indirect Water Heater	2
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	No



Mechanical Diagram:

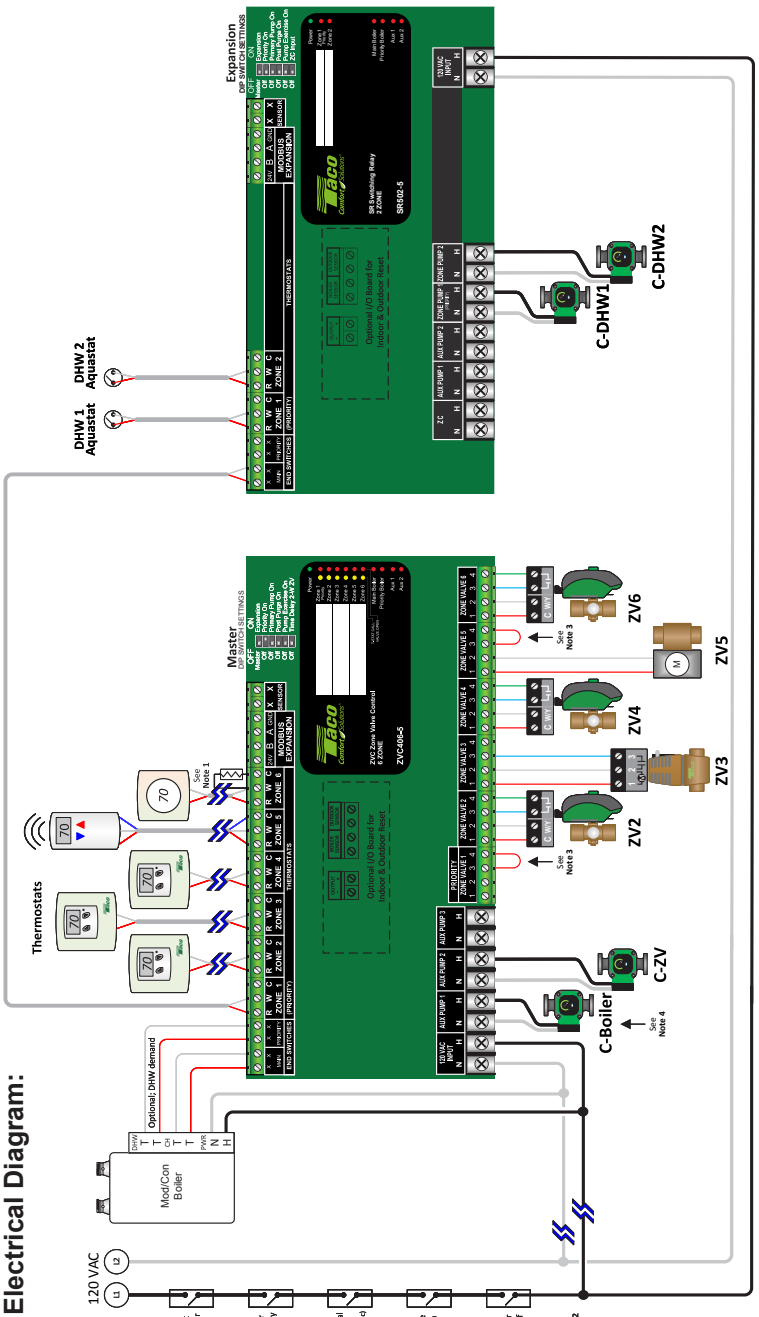


Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.
Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.
Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate. Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

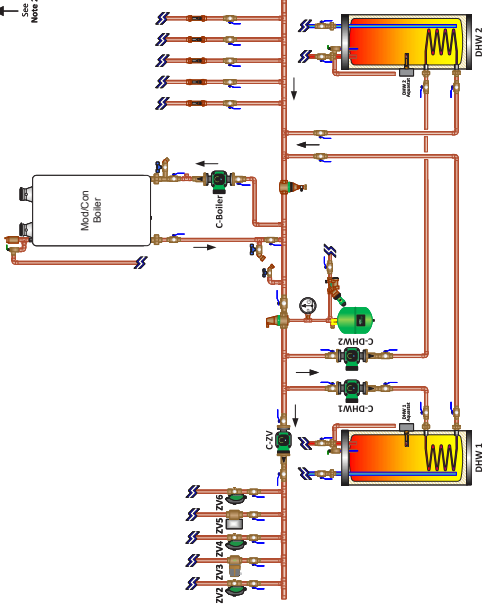
ZVC406-5 & SR502-5 with Two DHWs; Primary/Secondary

Zoning Method	ZV & Circ
Total Number of Zones	7
Space Heating Zones	5 - ZV
Indirect Water Heater	2 - Circ
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	No

Electrical Diagram:



Mechanical Diagram:



Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate.

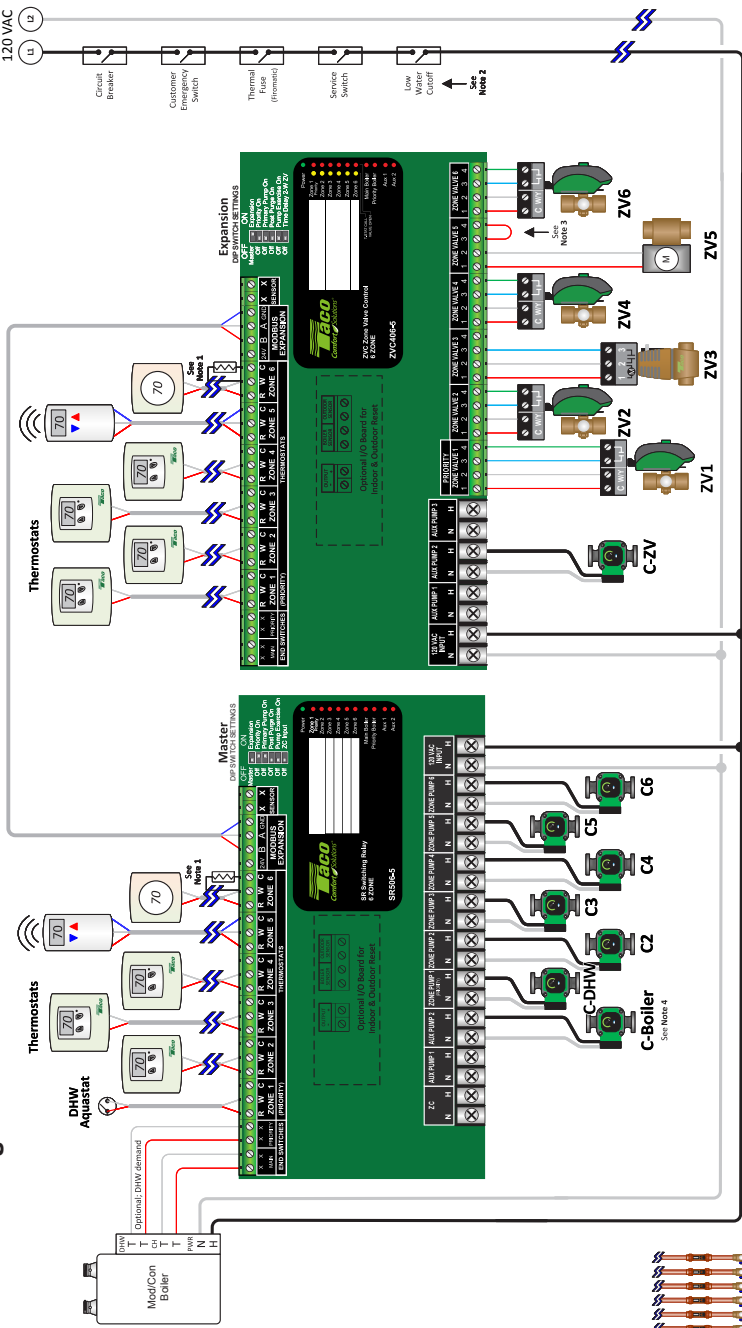
Note 4: Follow boiler manufacturer's recommendations on powering of boiler loop circulator. Some boilers require this circulator to be wired to the boiler operating control. Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.



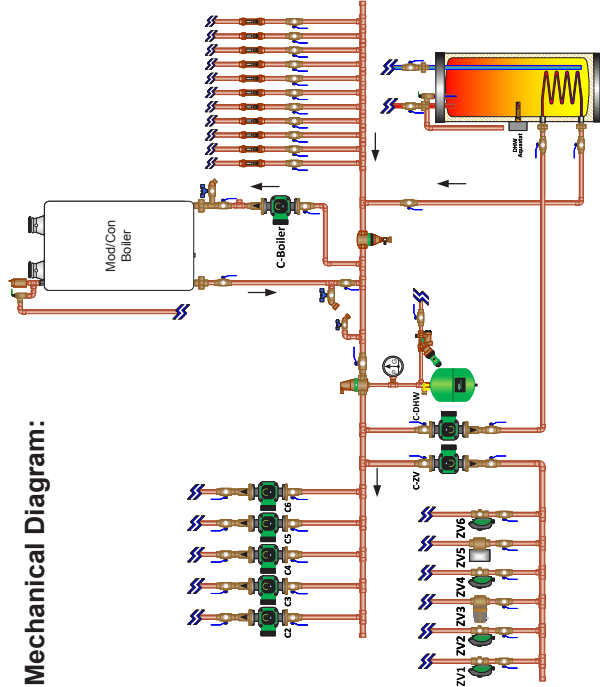
SR506-5 Connected to ZVC406-5

Zoning Method	ZV & Circ
Total Number of Zones	12
Space Heating Zones	5 - Circ, 6 - ZV
Indirect Water Heater	1 - Circ
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	No

Electrical Diagram:



Mechanical Diagram:



Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

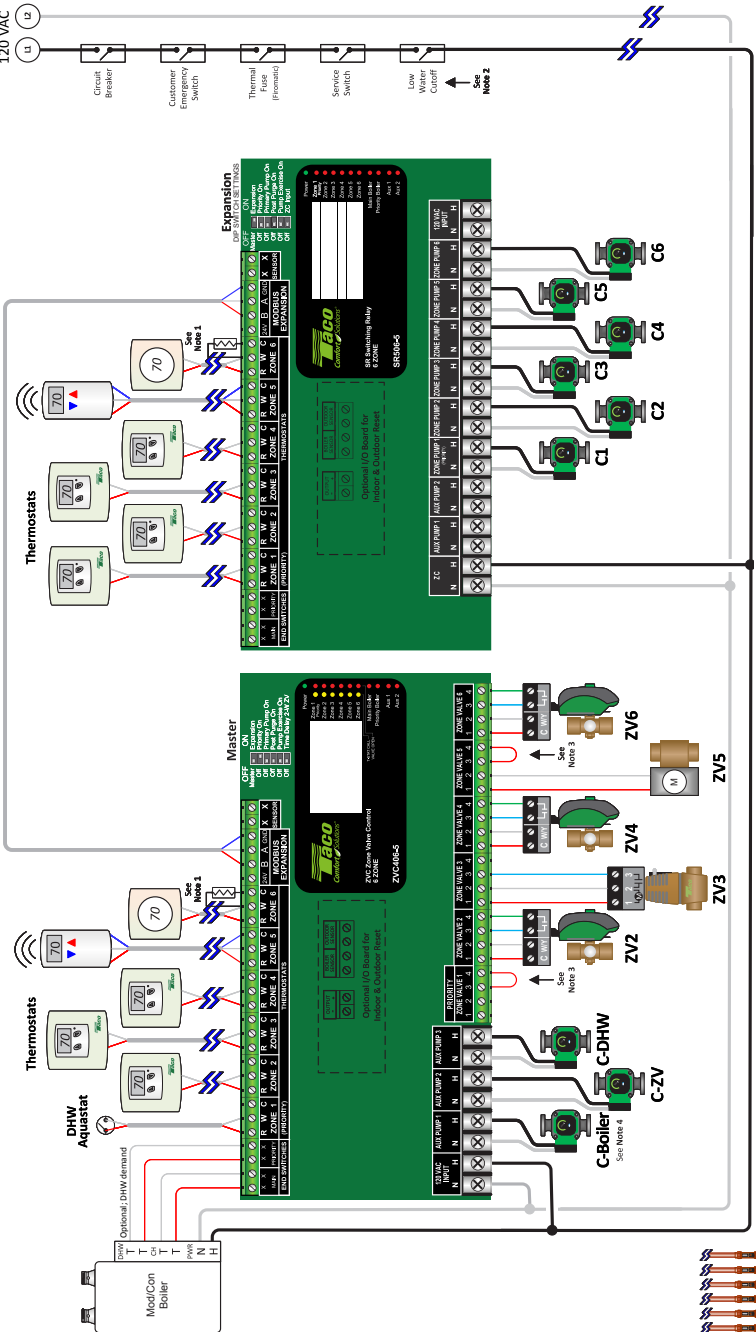
Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate.

Note 4: Follow boiler manufacturer's recommendations on powering of boiler loop circulator. Some boilers require this circulator to be wired to the boiler operating control. Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

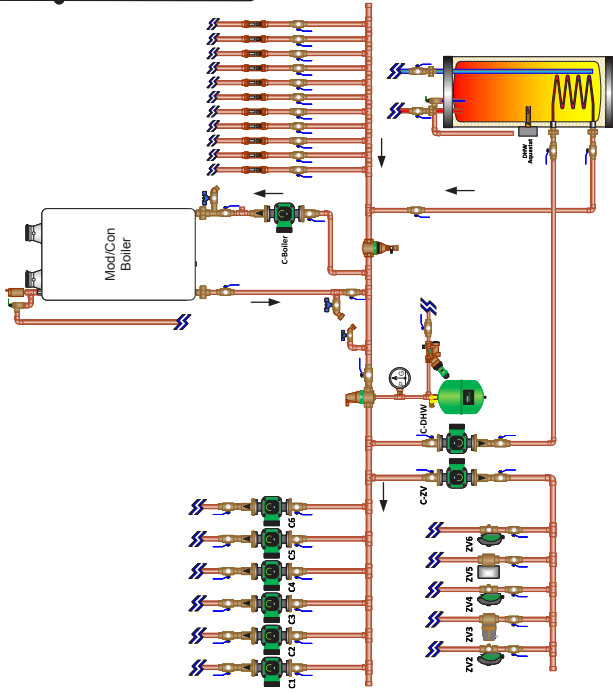
ZVC406-5 Connected to SR506-5

Zoning Method	ZV & Circ
Total Number of Zones	12
Space Heating Zones	6 - Circ, 5 - ZV
Indirect Water Heater	1 - Circ
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	No

Electrical Diagram:



Mechanical Diagram:



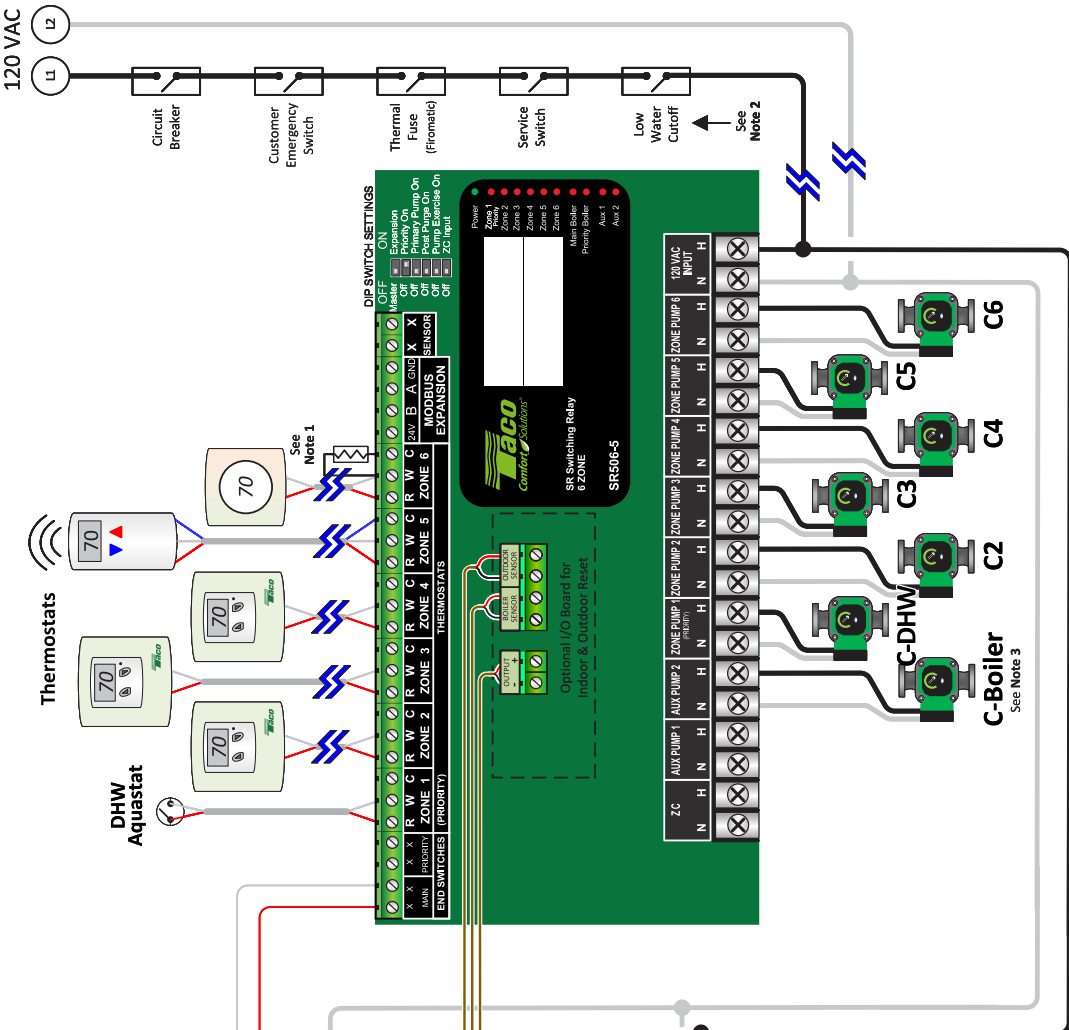
Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.
Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.
Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate.
Note 4: Follow boiler manufacturer's recommendations on powering of boiler loop circulator. Some boilers require this circulator to be wired to the boiler operating control. Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.



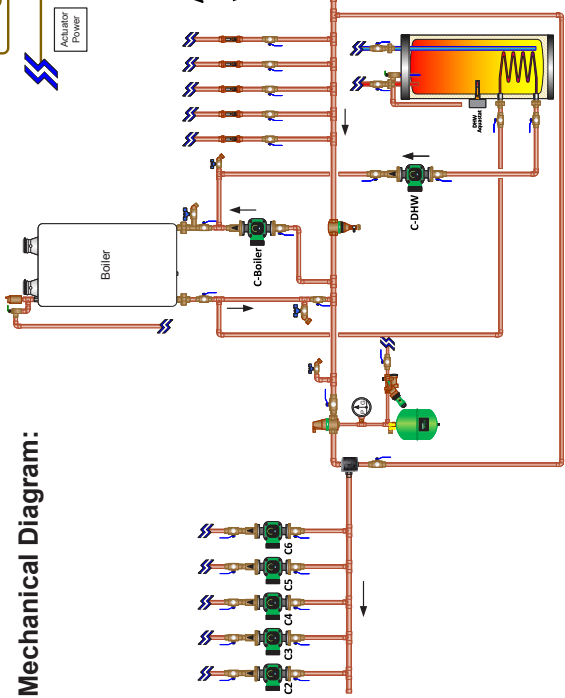
SR506-5 with Outdoor Reset Temperature Mixing

Zoning Method	Circulators
Total Number of Zones	6
Space Heating Zones	5
Indirect Water Heater	1
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	2
Special Functions Enabled	No

Electrical Diagram:



Mechanical Diagram:



Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

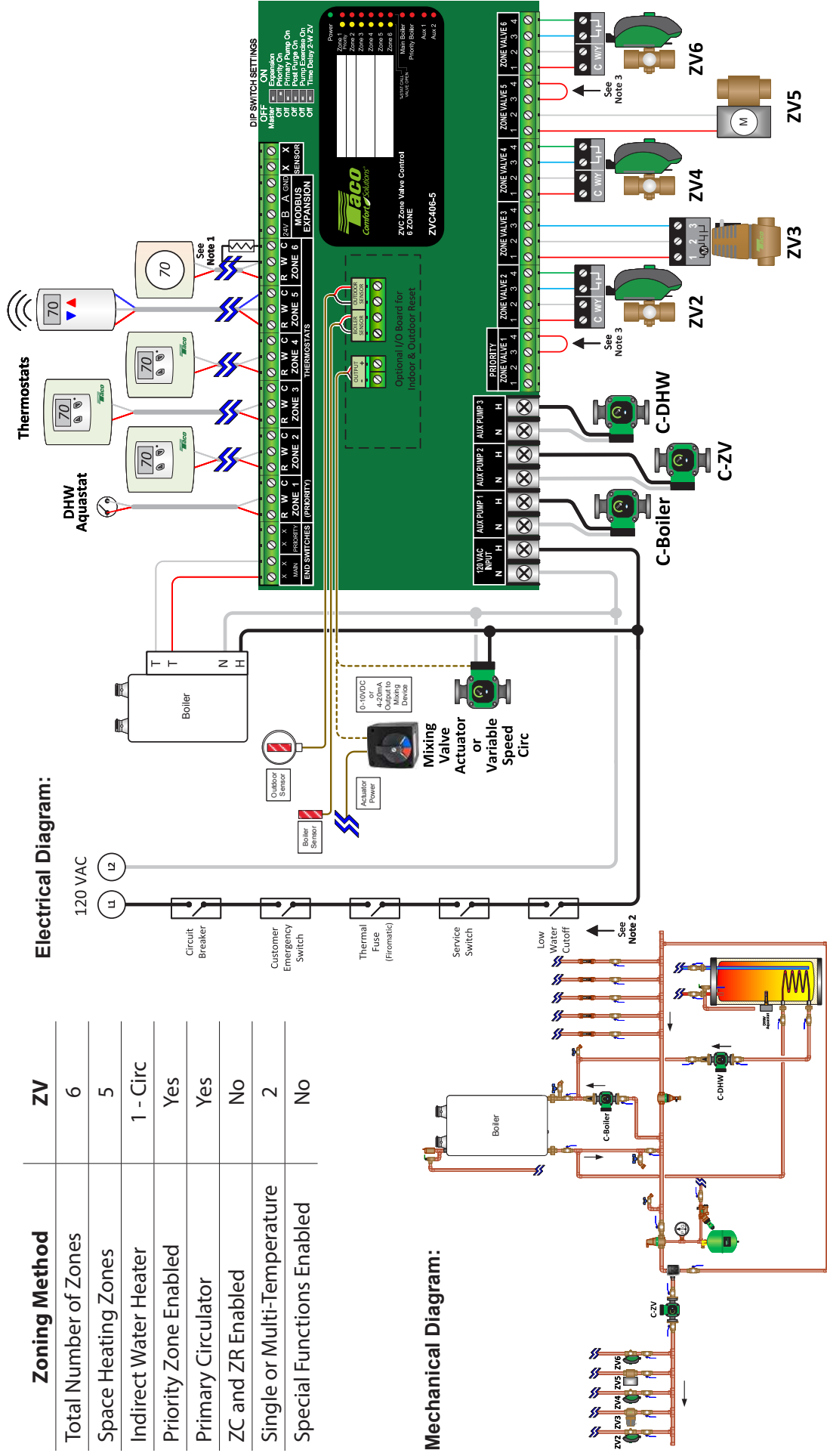
Note 3: Follow boiler manufactures recommendations on powering of boiler loop circulator. Some boilers require this circulator to be wired to the boiler operating control. Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.



ZVC406-5 with Outdoor Reset Temperature Mixing

Zoning Method	ZV
Total Number of Zones	6
Space Heating Zones	5
Indirect Water Heater	1 - Circ
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	2
Special Functions Enabled	No

Electrical Diagram:



60

Note 1: Some “Power Stealing” style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

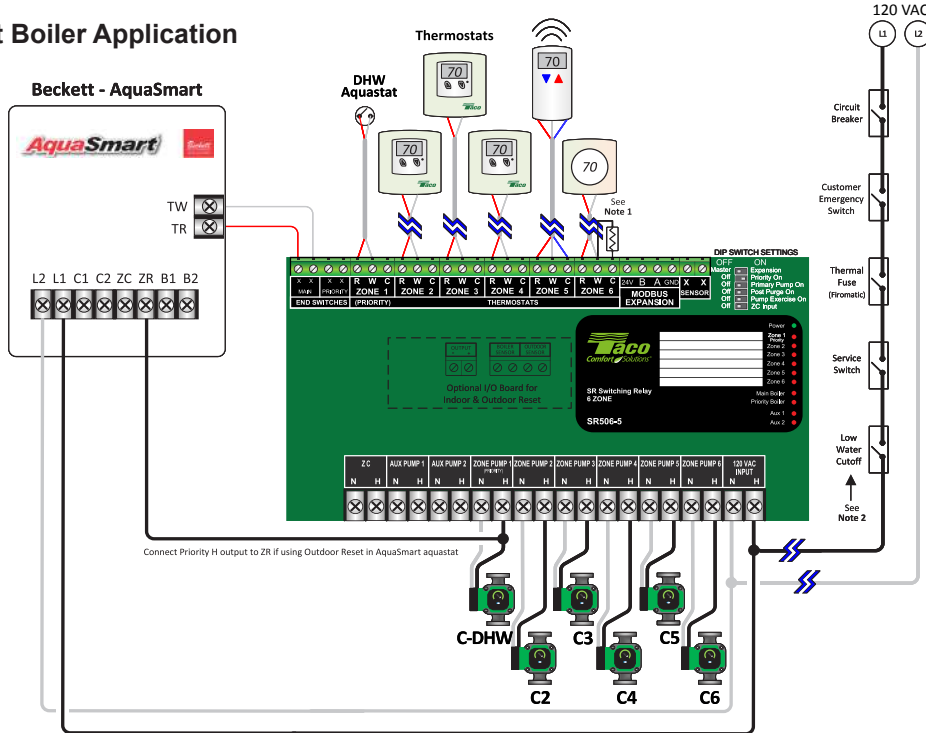
Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate.

Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

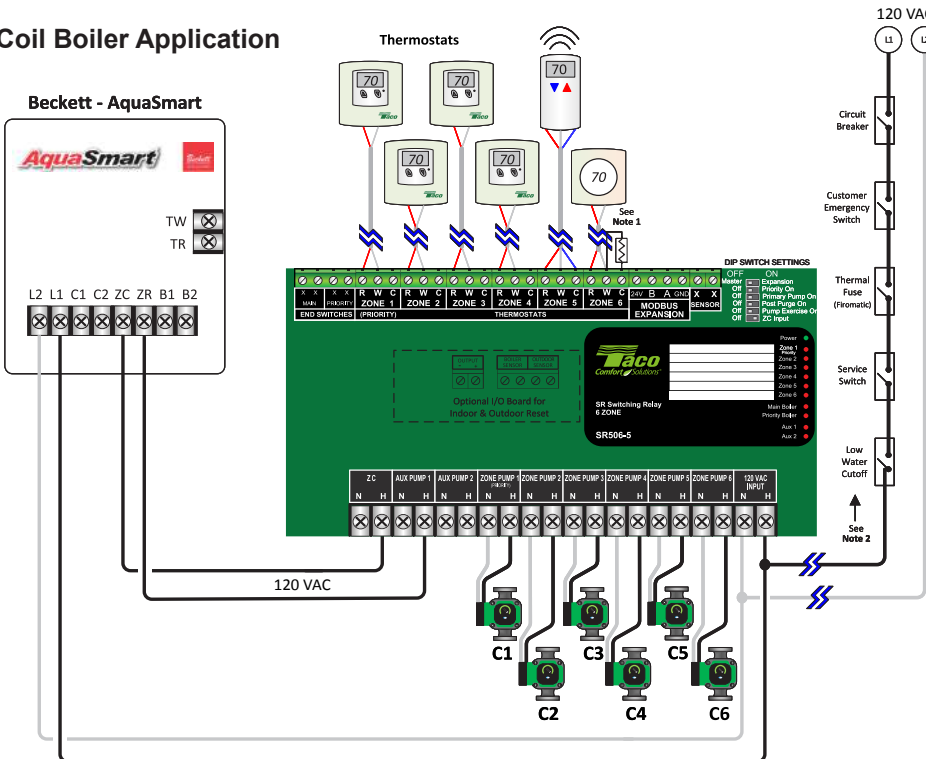


SR506-5 with Beckett AquaSmart® Aquastat

Cold Start Boiler Application



Tankless Coil Boiler Application



Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

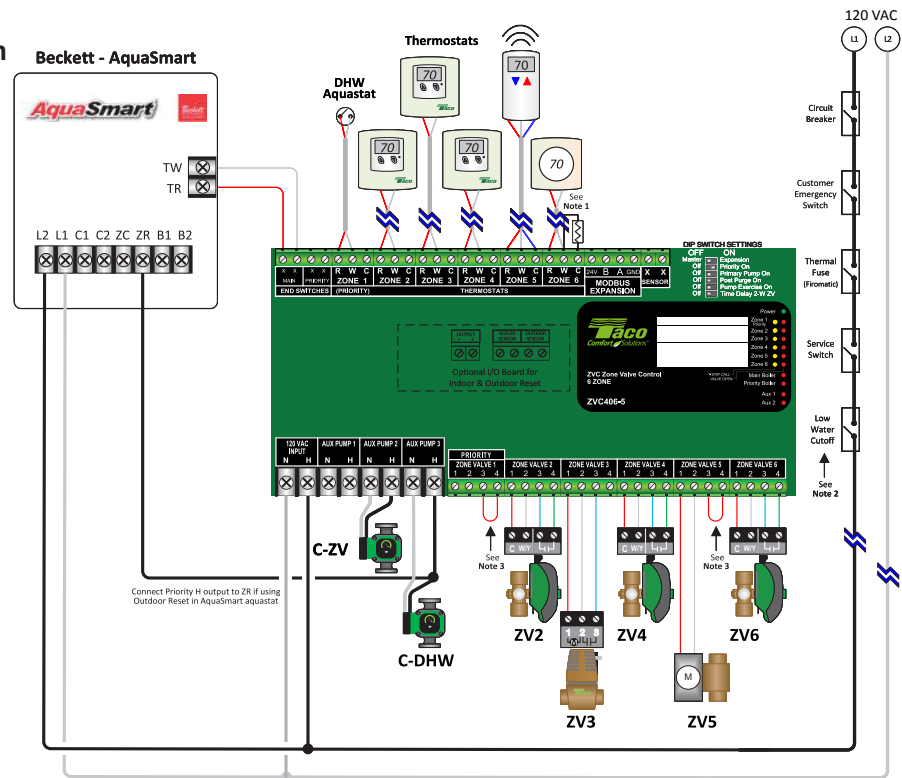
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ZVC406-5 with Beckett AquaSmart® Aquastat

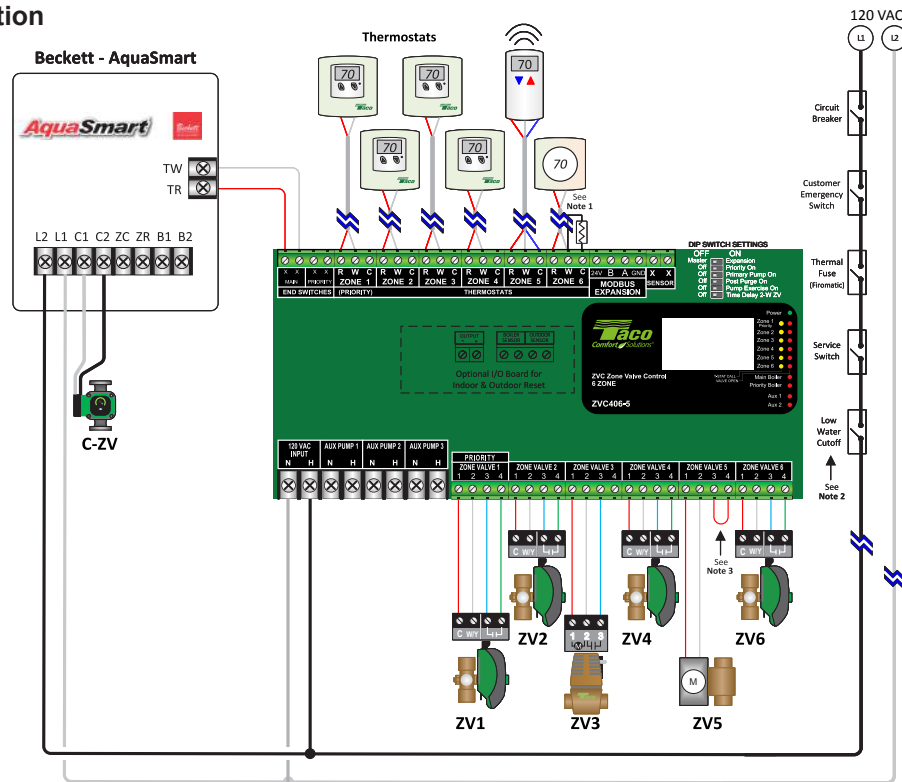
Cold Start Boiler Application

Beckett - AquaSmart



Tankless Coil Boiler Application

Beckett - AquaSmart



Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

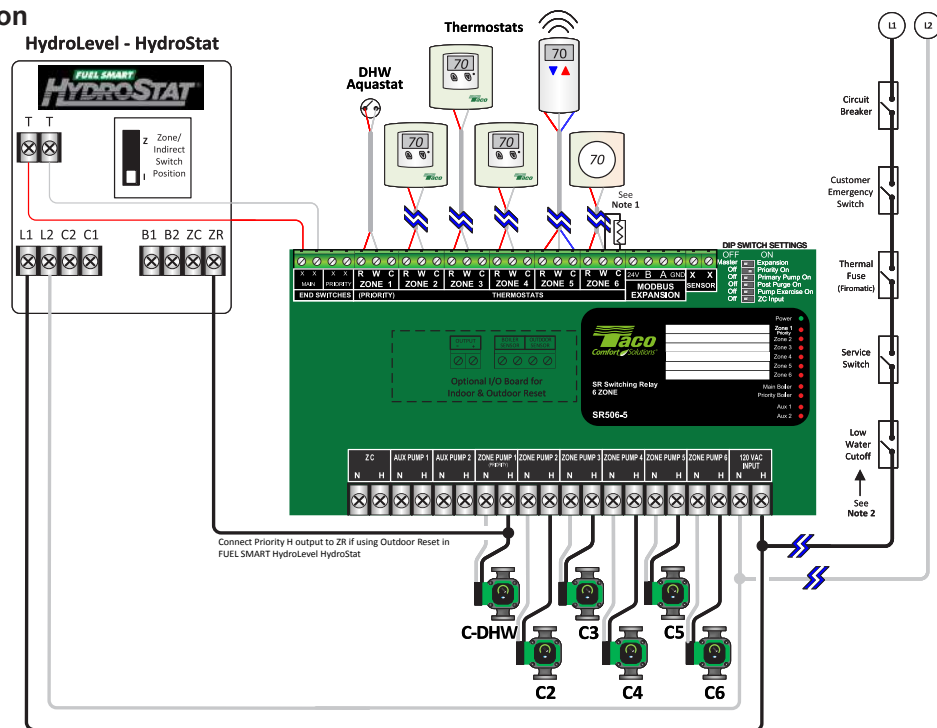
Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate.

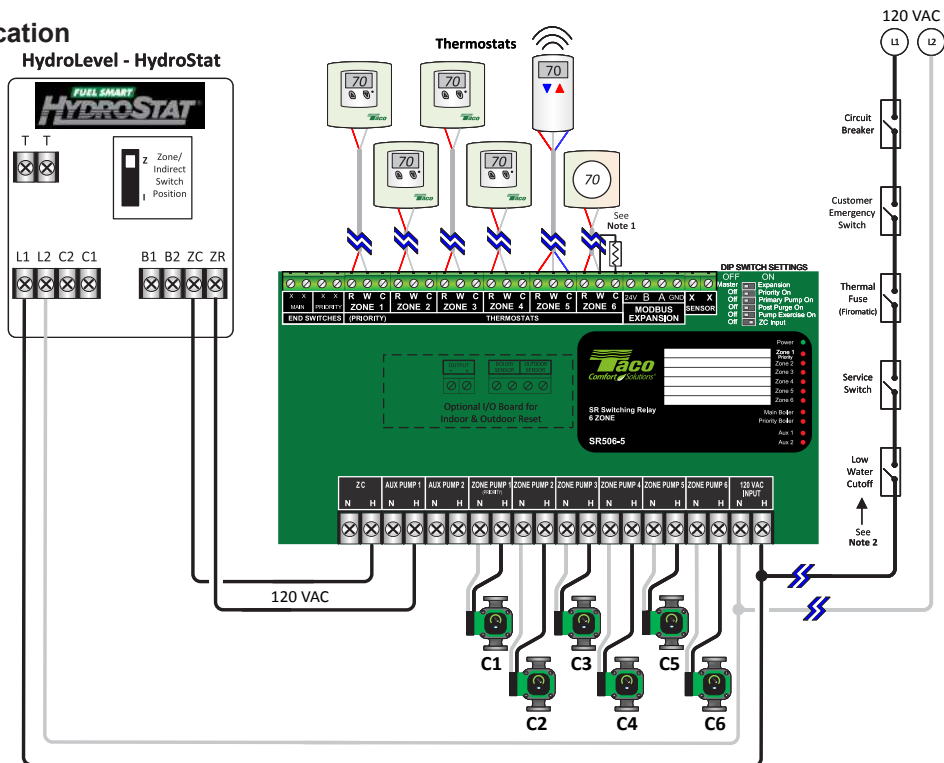
Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

SR506-5 with Hydrolevel HydroStat Aquastat

Cold Start Boiler Application



Tankless Coil Boiler Application



Note 1: Some “Power Stealing” style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

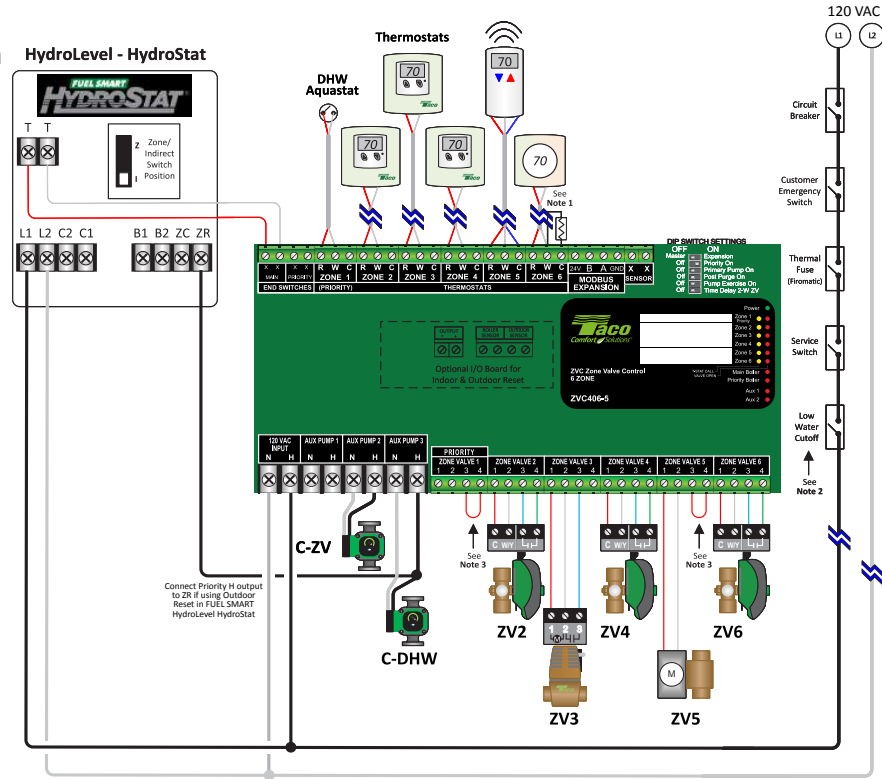
Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

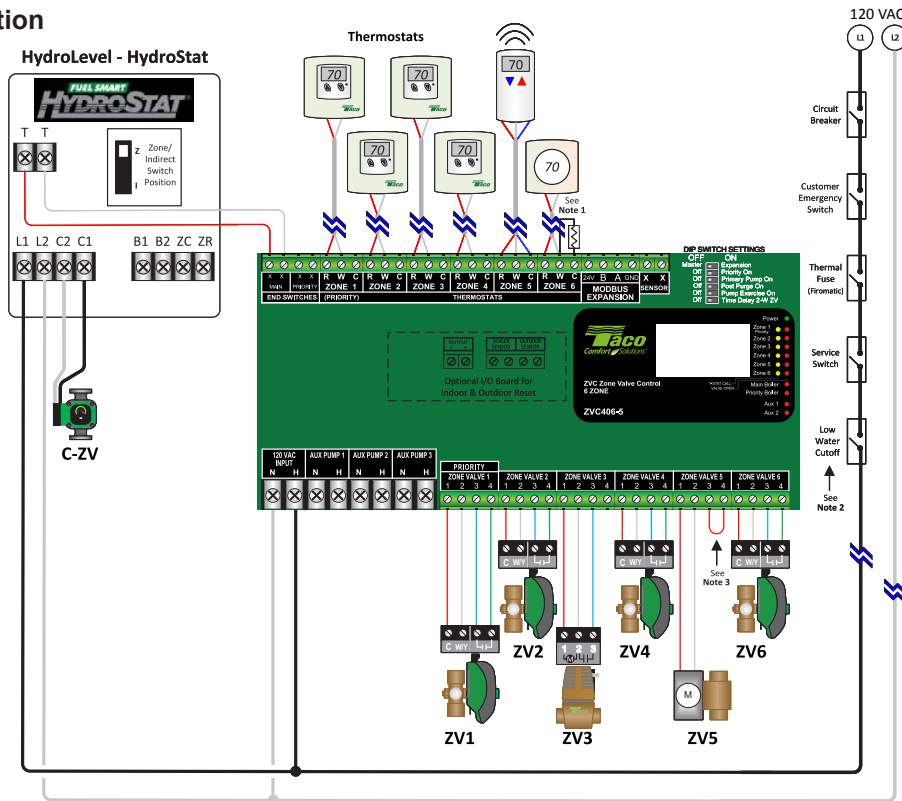


ZVC406-5 with Hydrolevel HydroStat Aquastat

Cold Start Boiler Application



Tankless Coil Boiler Application



Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

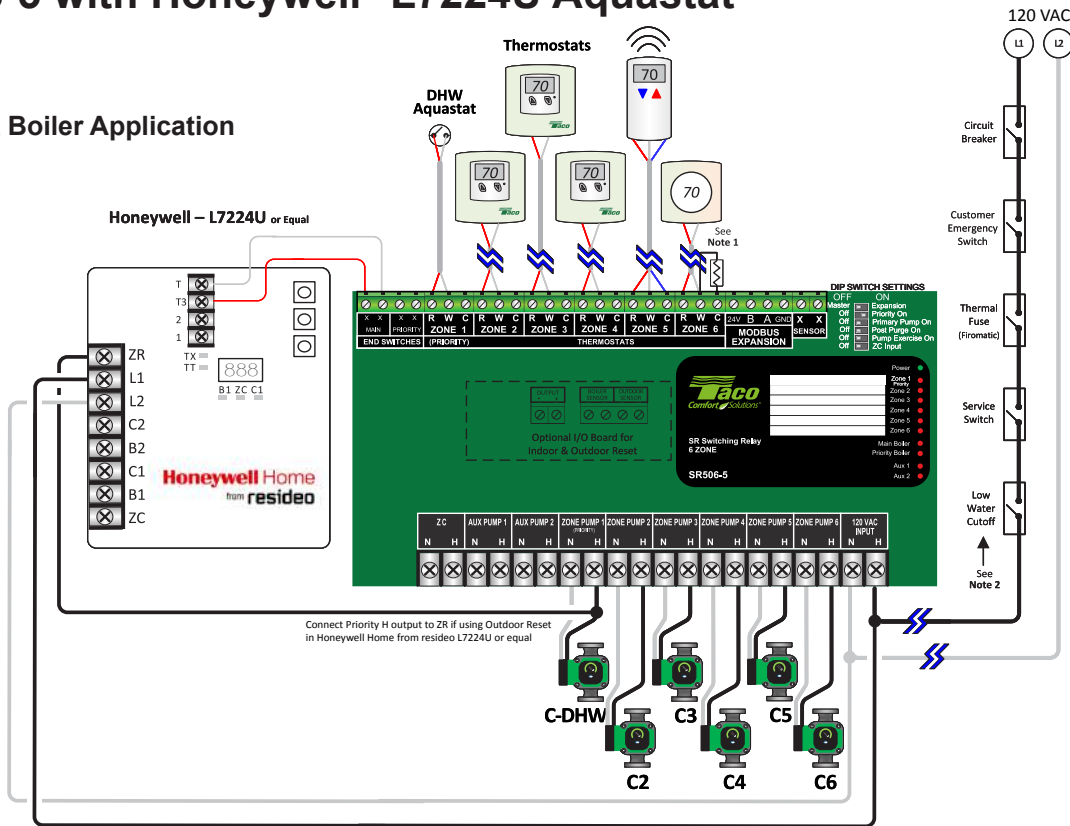
Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate.

Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

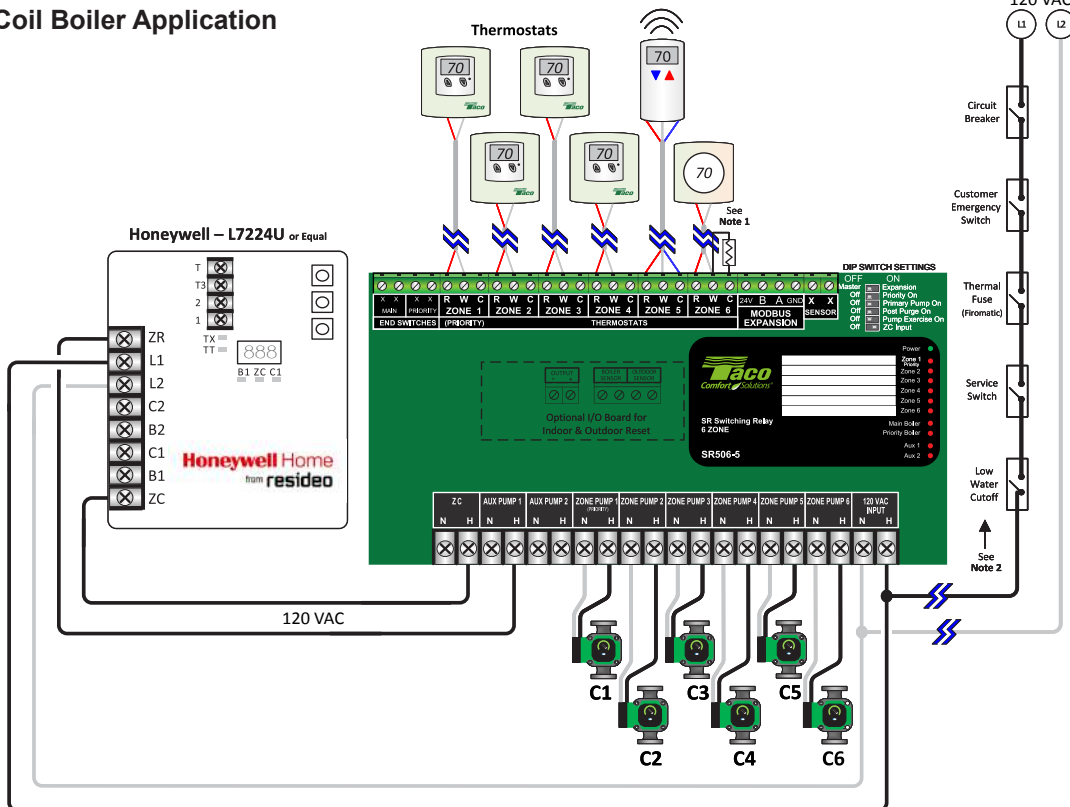


SR506-5 with Honeywell® L7224U Aquastat

Cold Start Boiler Application



Tankless Coil Boiler Application



Note 1: Some “Power Stealing” style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

Conceptual Sketches Only, refer to individual manufacturer’s installation instructions for additional details. Local codes shall prevail.

[illegible][illegible]

NOTE 5: If a 2 wire zone valve or 3 wire zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

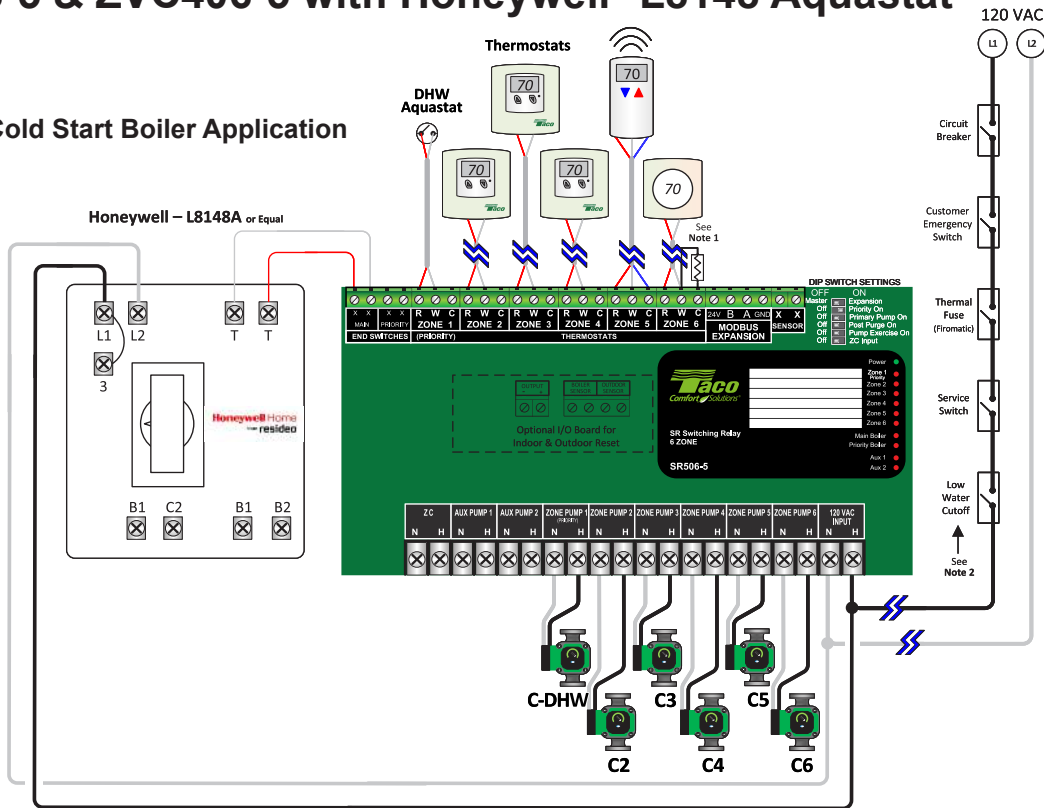
[illegible]

Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

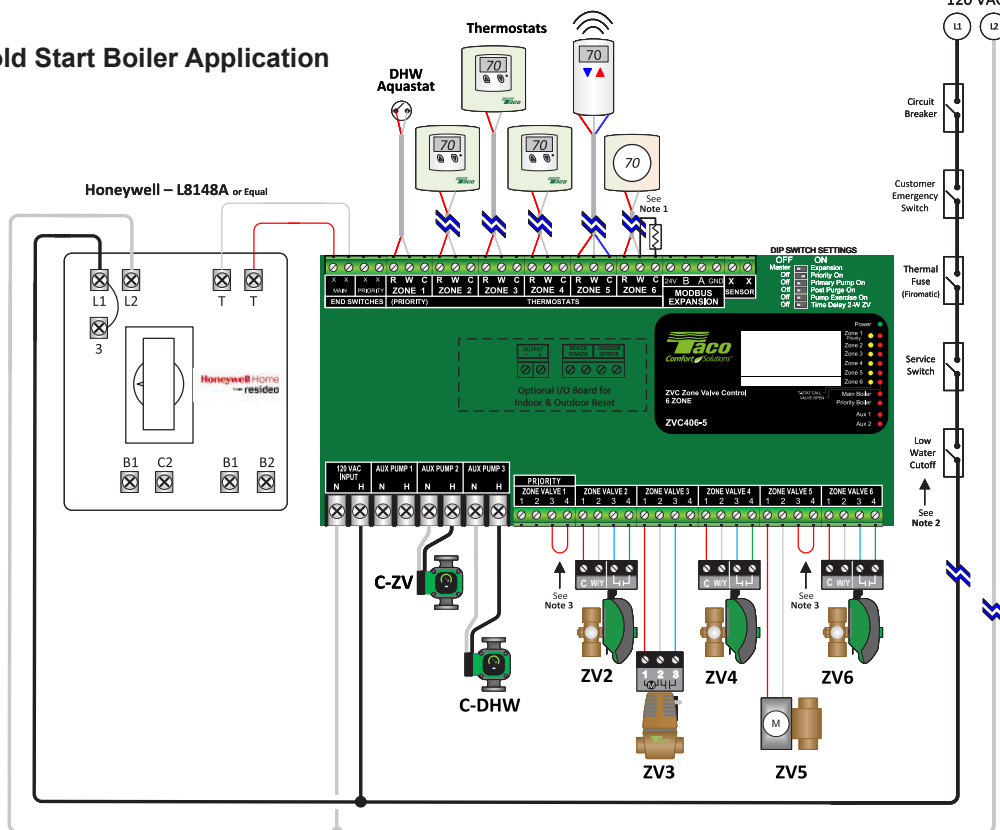


SR506-5 & ZVC406-5 with Honeywell® L8148 Aquastat

SR506-5 Cold Start Boiler Application



ZVC406-5 Cold Start Boiler Application



Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

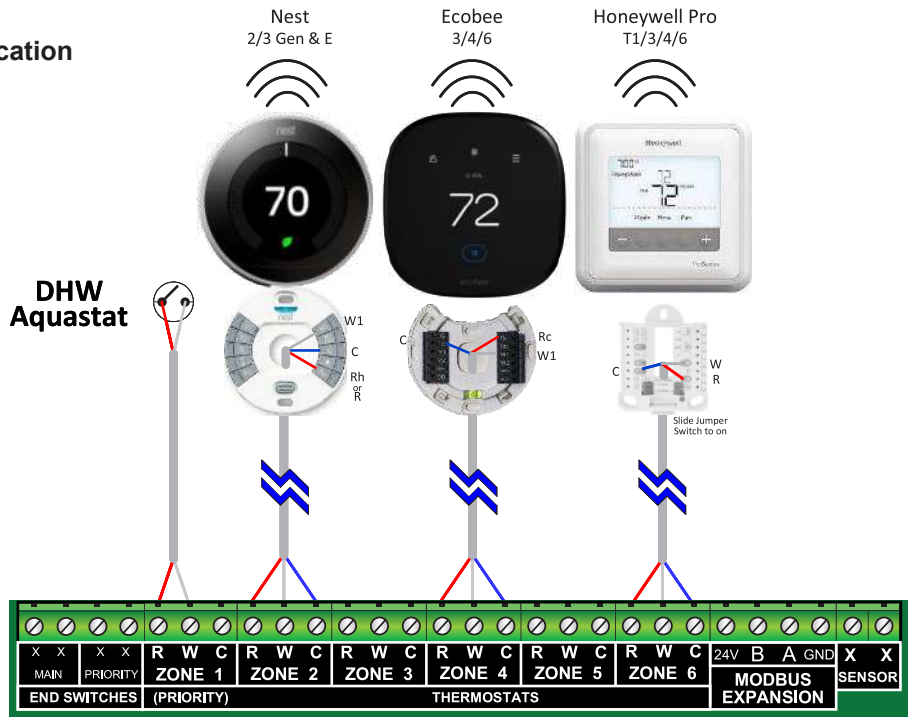
Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate.

Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.



SR506-5 & ZVC406-5 with Smart Thermostats

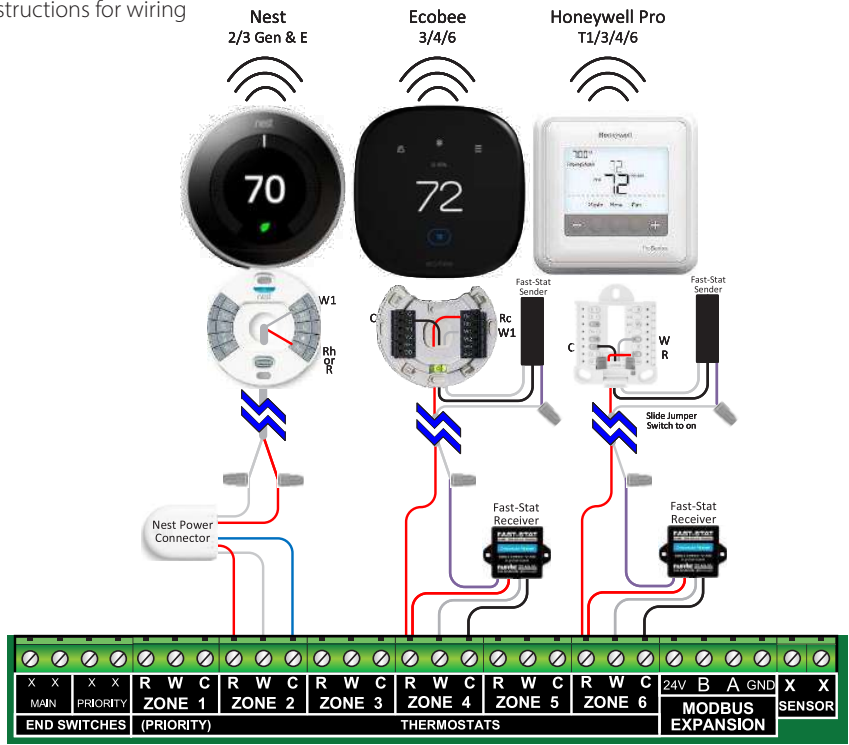
Common Wire Application



Common Wire Adapters (Wire Saver)

Note: Follow manufacturers instructions for wiring of wire saver adapters

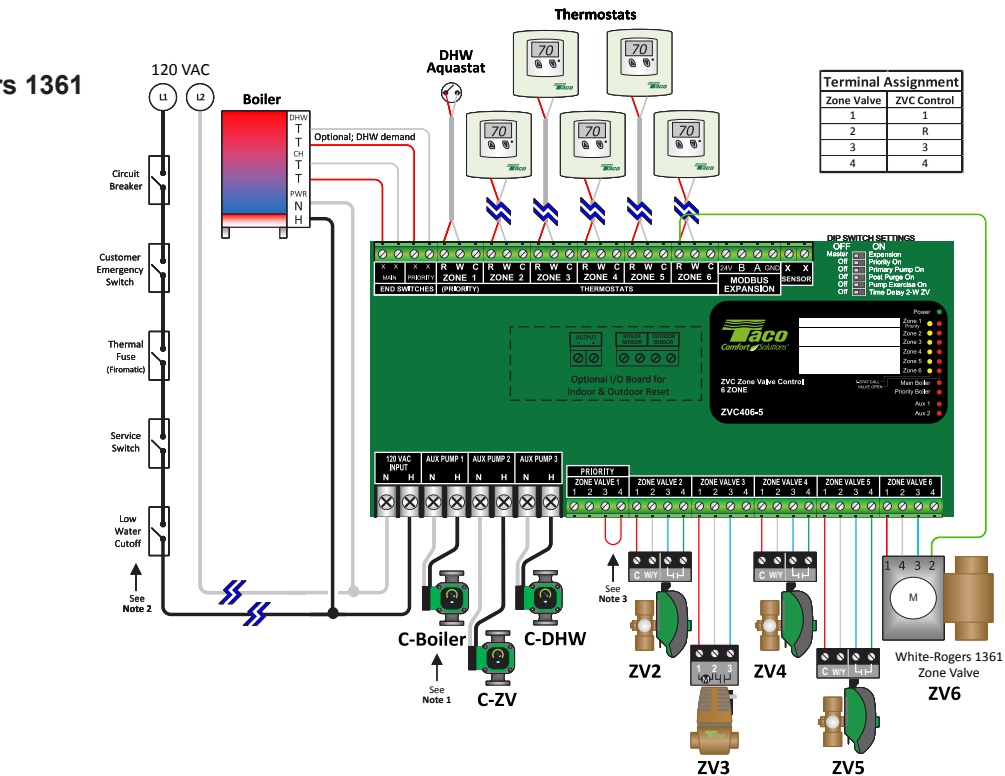
Smart Thermostats



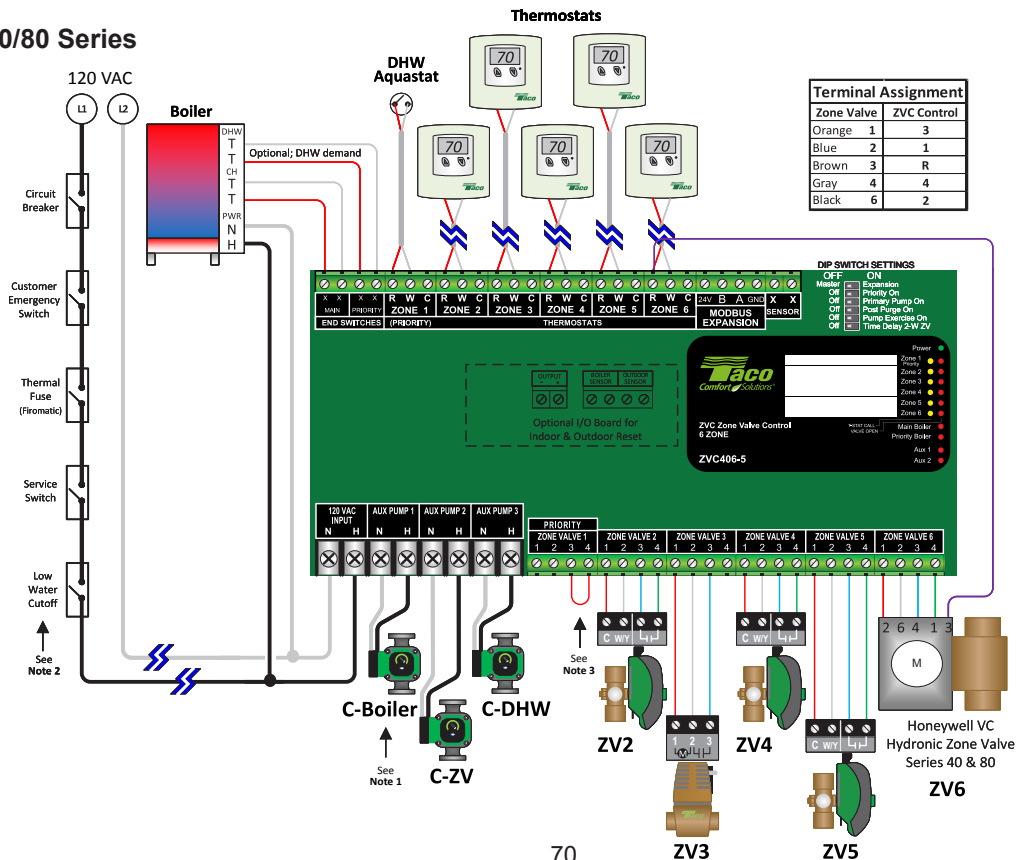


ZVC406-5 with White-Rogers 1361 and Honeywell 40/80 Series Zone Valves

White-Rogers 1361



Honeywell 40/80 Series

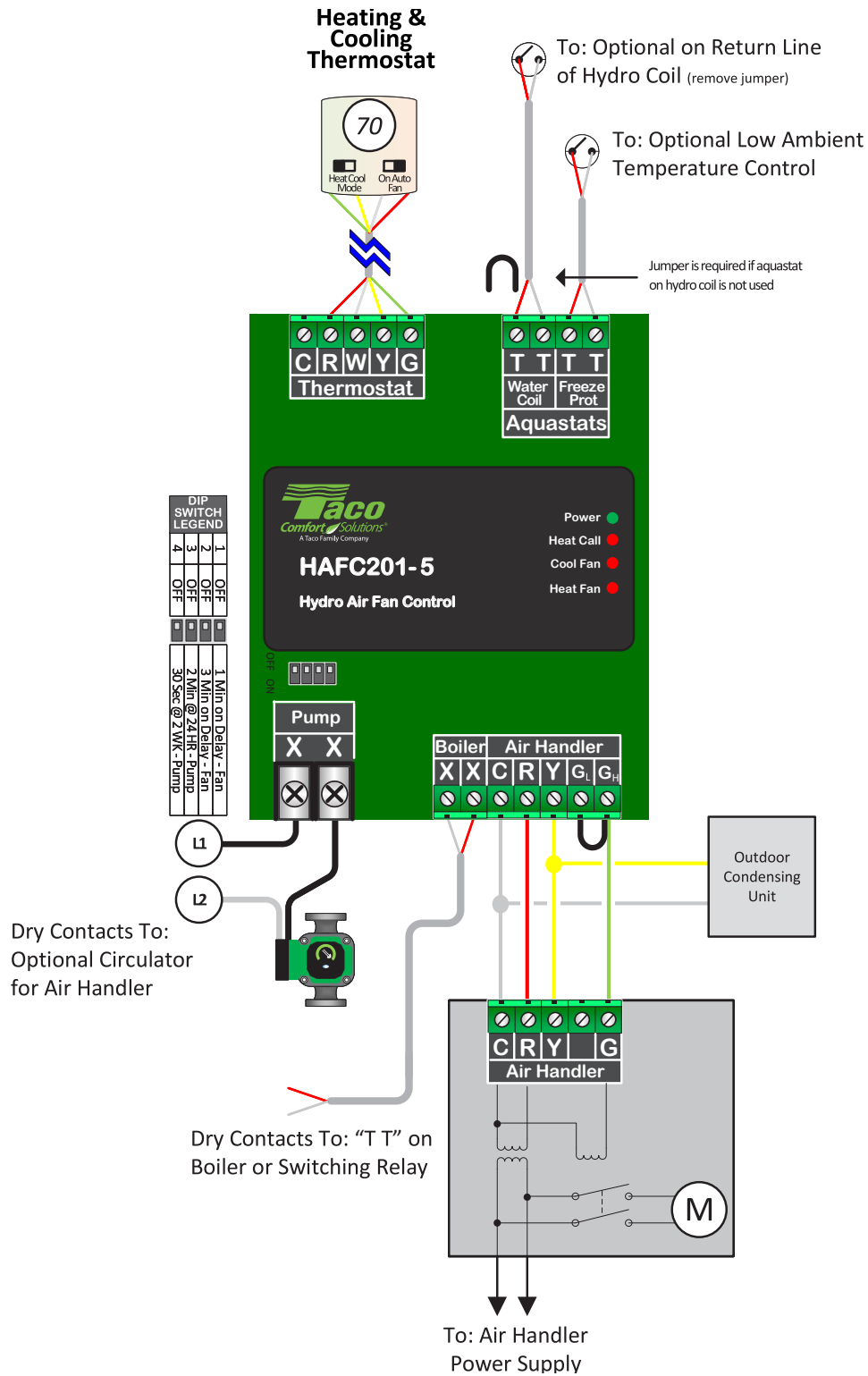


Note 1: Follow boiler manufacturers recommendations on powering of boiler loop circulator. Some boilers require this circulator to be wired to the boiler operating control.
Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.
Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate.
 Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.



HAFC201-5 - Hydro-Air Fan Control with Single Speed Air Handler

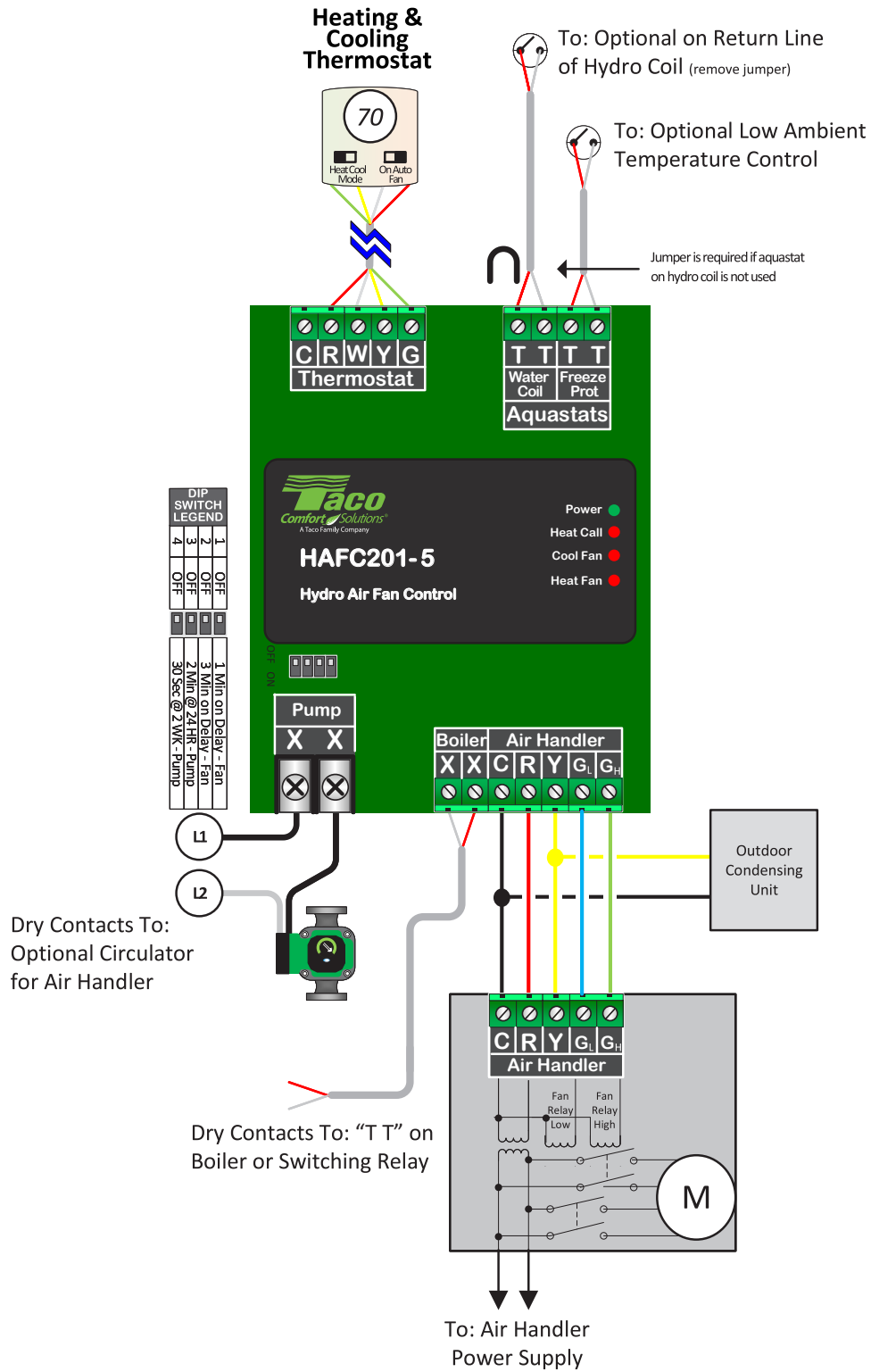
Electrical Diagram:





HAFC201-5 - Hydro-Air Fan Control with 2 Speed Air Handler

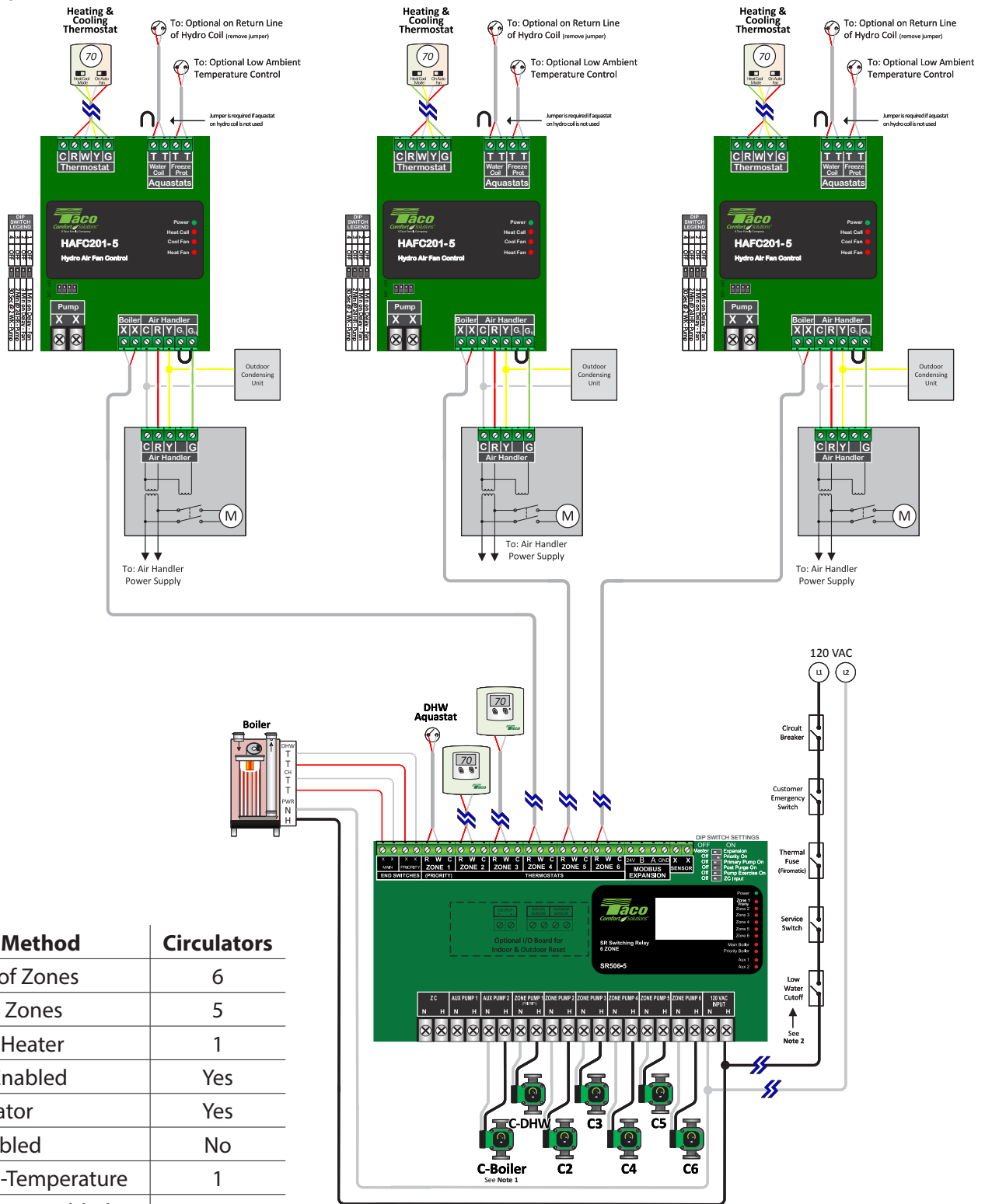
Electrical Diagram:





3 HAF201-5 - Hydro-Air Fan Controls with SR506-5 for Complete Zoning System

Electrical Diagram:



Zoning Method	Circulators
Total Number of Zones	6
Space Heating Zones	5
Indirect Water Heater	1
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	No

Note 1: Follow boiler manufacturers recommendations on powering of boiler loop circulator. Some boilers require this circulator to be wired to the boiler operating control.

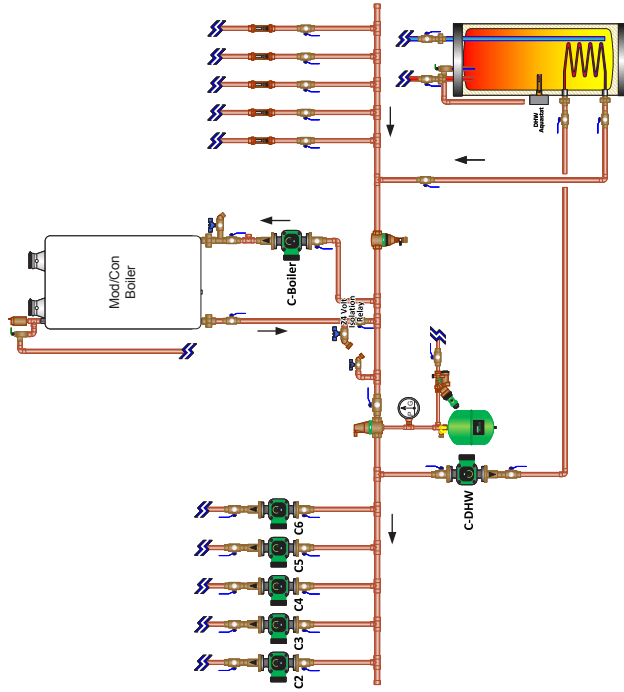
Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

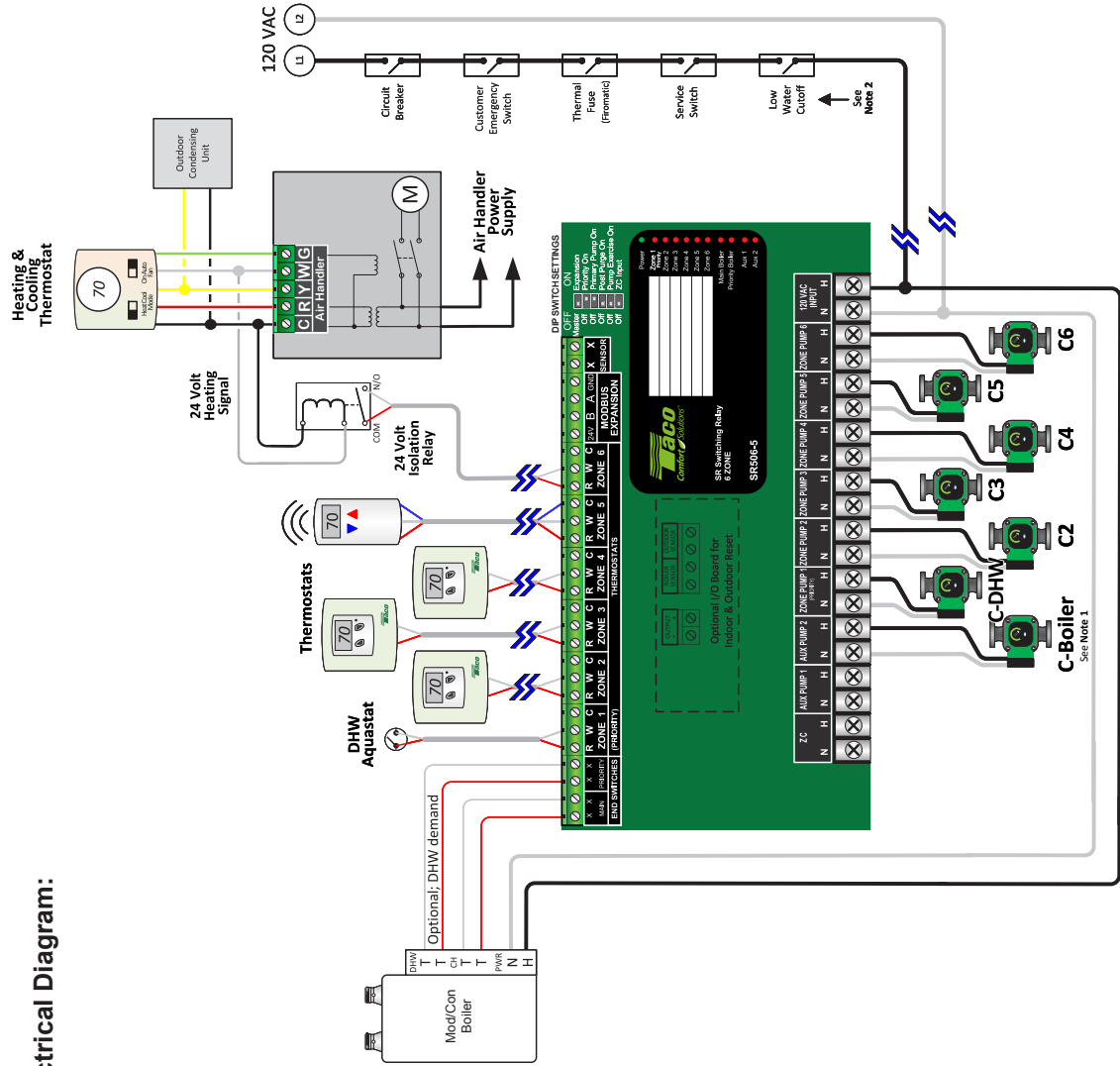
SR506-5 with Isolation Relay for 24 Volt Demand Signal

Zoning Method	Circulators
Total Number of Zones	6
Space Heating Zones	5
Indirect Water Heater	1
Priority Zone Enabled	Yes
Primary Circulator	Yes
ZC and ZR Enabled	No
Single or Multi-Temperature	1
Special Functions Enabled	No

Mechanical Diagram:



Electrical Diagram:



Note 1: Follow boiler manufactures recommendations on powering of boiler loop circulator. Some boilers require this circulator to be wired to the boiler operating control.

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.





With Priority Application



Without Priority Application



Switching Relay

Main Boiler End Switch

Default	☐
Activate on Zone 1	☒
Activate on Zone 2	☐
Activate on Zone 3	☐
Activate on Zone 4	☐
Activate on Zone 5	☐
Activate on Zone 6	☐

SAVE

Switching Relay

Priority Boiler End Switch

Default	☐
Activate on Zone 1	☐
Activate on Zone 2	☒
Activate on Zone 3	☒
Activate on Zone 4	☒
Activate on Zone 5	☒
Activate on Zone 6	☒

SAVE

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

Advanced Control & Monitoring Options: The Taco Control mobile app is only required to operate advanced control functions and parameters. Go to the App Store or Google Play and search Taco Control to download the app for iOS or Android devices. An installer can use their smartphone or tablet to view settings and make adjustments, ensuring the zone controls are optimally configured to best suit the heating and/or cooling application.

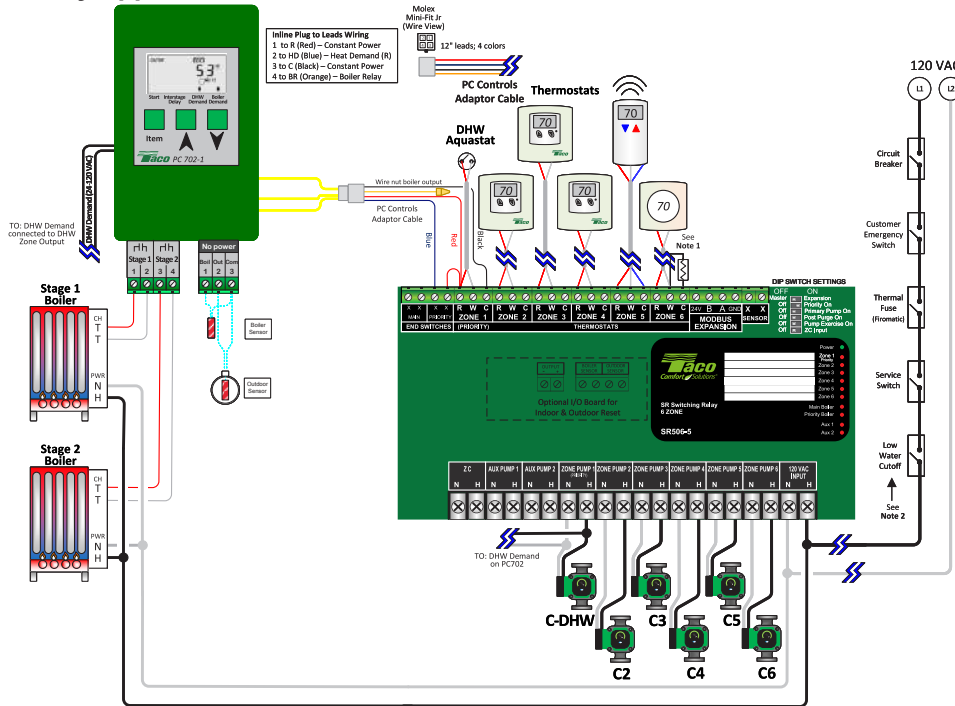
Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.



SR506-5 / ZVC406-5 with PC702-1 Adapter Cable (9300-4166RP)

(SR506-5 shown for example)

With Priority Application



App Settings

Switching Relay

Main Boiler End Switch

Default ☐

Activate on Zone 1 ☐

Activate on Zone 2 ☐

Activate on Zone 3 ☐

Activate on Zone 4 ☐

Activate on Zone 5 ☐

Activate on Zone 6 ☐

SAVE

Switching Relay

Priority Boiler End Switch

Default ☐

Activate on Zone 1 ☐

Activate on Zone 2 ☐

Activate on Zone 3 ☐

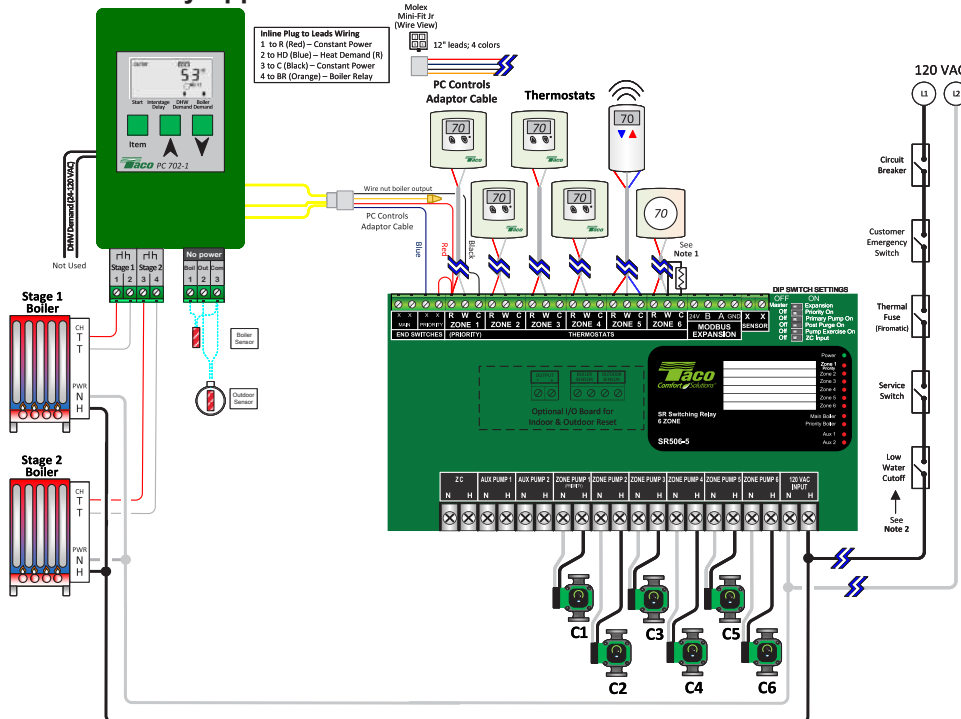
Activate on Zone 4 ☐

Activate on Zone 5 ☐

Activate on Zone 6 ☐

SAVE

Without Priority Application



App Settings

Switching Relay

Main Boiler End Switch

Default ☐

Activate on Zone 1 ☐

Activate on Zone 2 ☐

Activate on Zone 3 ☐

Activate on Zone 4 ☐

Activate on Zone 5 ☐

Activate on Zone 6 ☐

SAVE

Switching Relay

Priority Boiler End Switch

Default ☐

Activate on Zone 1 ☐

Activate on Zone 2 ☐

Activate on Zone 3 ☐

Activate on Zone 4 ☐

Activate on Zone 5 ☐

Activate on Zone 6 ☐

SAVE

Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

The Taco Control mobile app is not required for standard installations.

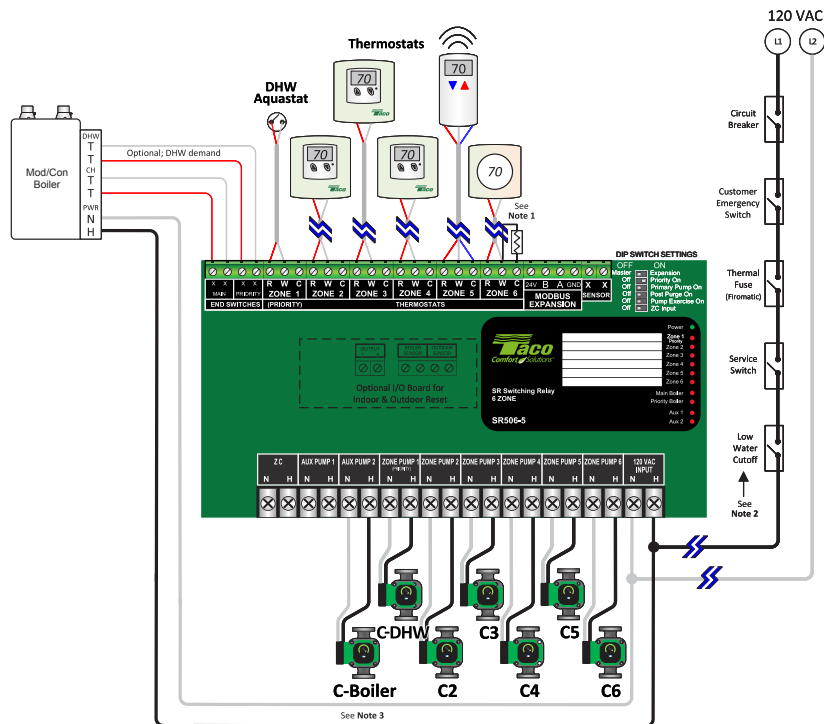
Advanced Control & Monitoring Options: The Taco Control mobile app is only required to operate advanced control functions and parameters. Go to the App Store or Google Play and search Taco Control to download the app for iOS or Android devices. An installer can use their smartphone or tablet to view settings and make adjustments, ensuring the zone controls are optimally configured to best suit the heating and/or cooling application.

Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.



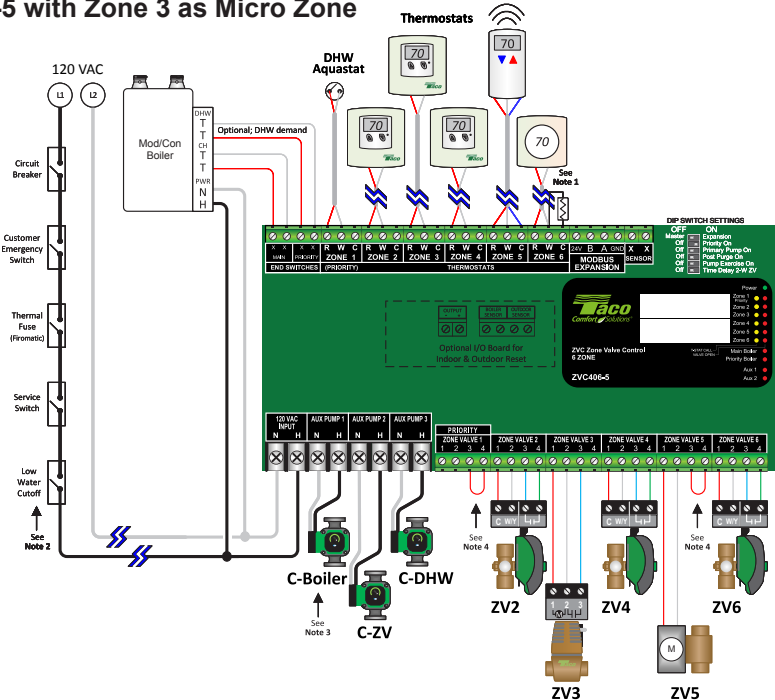
SR506-5 / ZVC406-5 with Micro Zone on Zone 3

SR506-5 with Zone 3 as Micro Zone



App Settings

ZVC406-5 with Zone 3 as Micro Zone



App Settings

Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate.

Note 4: Follow boiler manufactures recommendations on powering of boiler loop circulator. Some boilers require this circulator to be wired to the boiler operating control.

The Taco Control mobile app is not required for standard installations.

Advanced Control & Monitoring Options: The Taco Control mobile app is only required to operate advanced control functions and parameters. Go to the App Store or Google Play and search Taco Control to download the app for iOS or Android devices. An installer can use their smartphone or tablet to view settings and make adjustments, ensuring the zone controls are optimally configured to best suit the heating and/or cooling application.

Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.



SR506-5 / ZVC406-5 with Heat Pump

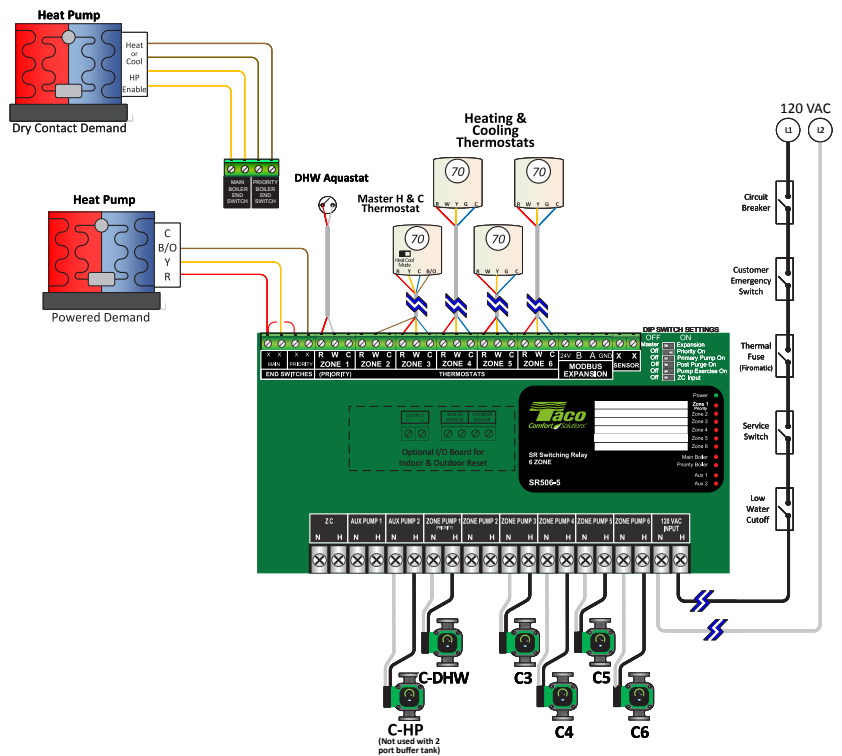
SR506-5 with Heat Pump

App Settings

Switching Relay
Main Boiler End Switch
Default ☐
Activate on Zone 1 ☐
Activate on Zone 2 ☒
Activate on Zone 3 ☐
Activate on Zone 4 ☐
Activate on Zone 5 ☐
Activate on Zone 6 ☐
SAVE

Switching Relay
Priority Boiler End Switch
Default ☐
Activate on Zone 1 ☒
Activate on Zone 2 ☐
Activate on Zone 3 ☐
Activate on Zone 4 ☒
Activate on Zone 5 ☒
Activate on Zone 6 ☒
SAVE

Switching Relay
Aux Pump 2
Default ☐
Activate on Zone 1 ☒
Activate on Zone 2 ☐
Activate on Zone 3 ☒
Activate on Zone 4 ☒
Activate on Zone 5 ☒
Activate on Zone 6 ☐
SAVE



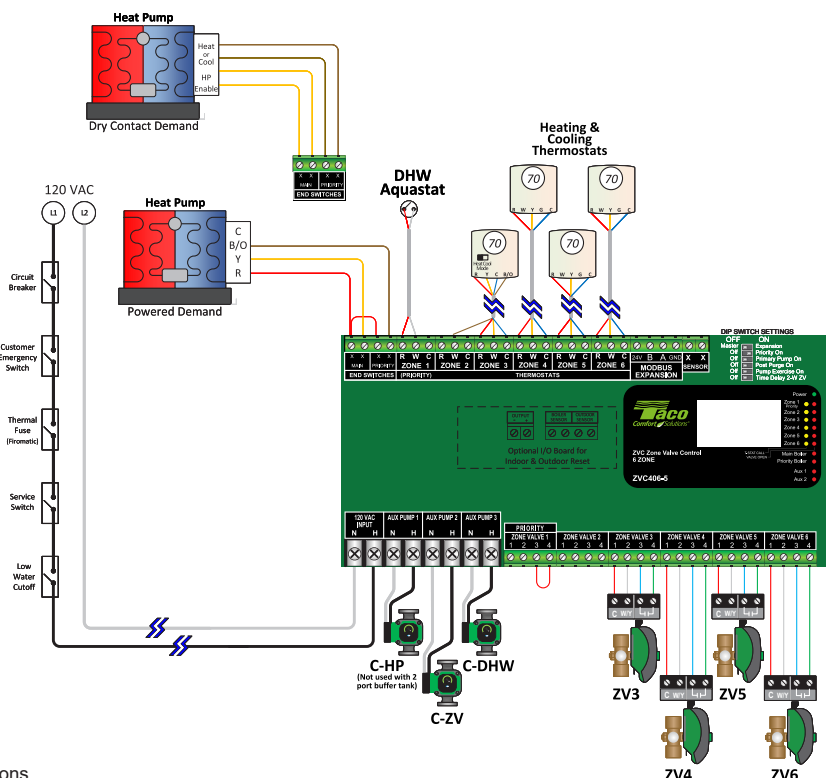
ZVC406-5 with Heat Pump

App Settings

Zone Controller
Main Boiler End Switch
Default ☐
Activate on Zone 1 ☐
Activate on Zone 2 ☒
Activate on Zone 3 ☐
Activate on Zone 4 ☐
Activate on Zone 5 ☐
Activate on Zone 6 ☐
SAVE

Zone Controller
Priority Boiler End Switch
Default ☐
Activate on Zone 1 ☒
Activate on Zone 2 ☐
Activate on Zone 3 ☐
Activate on Zone 4 ☒
Activate on Zone 5 ☒
Activate on Zone 6 ☒
SAVE

Zone Controller
Aux Pump 1
Default ☐
Activate on Zone 1 ☒
Activate on Zone 2 ☐
Activate on Zone 3 ☐
Activate on Zone 4 ☒
Activate on Zone 5 ☒
Activate on Zone 6 ☒
SAVE



Note: The Taco Control mobile app is not required for standard installations.

Advanced Control & Monitoring Options: The Taco Control mobile app is only required to operate advanced control functions and parameters. Go to the App Store or Google Play and search Taco Control to download the app for iOS or Android devices. An installer can use their smartphone or tablet to view settings and make adjustments, ensuring the zone controls are optimally configured to best suit the heating and/or cooling application.

Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.

ZVC406-5 Multi-Temperature System with Single Control

App Settings

The image displays two screenshots of the Zone Controller application interface. Both screens feature a top navigation bar with a back arrow, the title "Zone Controller", and a signal strength icon.

The left screenshot shows the "AUX Pump 1" screen. It contains a table with six rows, each representing a zone's status:

	Default
Activate on Zone 1	☐
Activate on Zone 2	☒
Activate on Zone 3	☒
Activate on Zone 4	☒
Activate on Zone 5	☐
Activate on Zone 6	☐

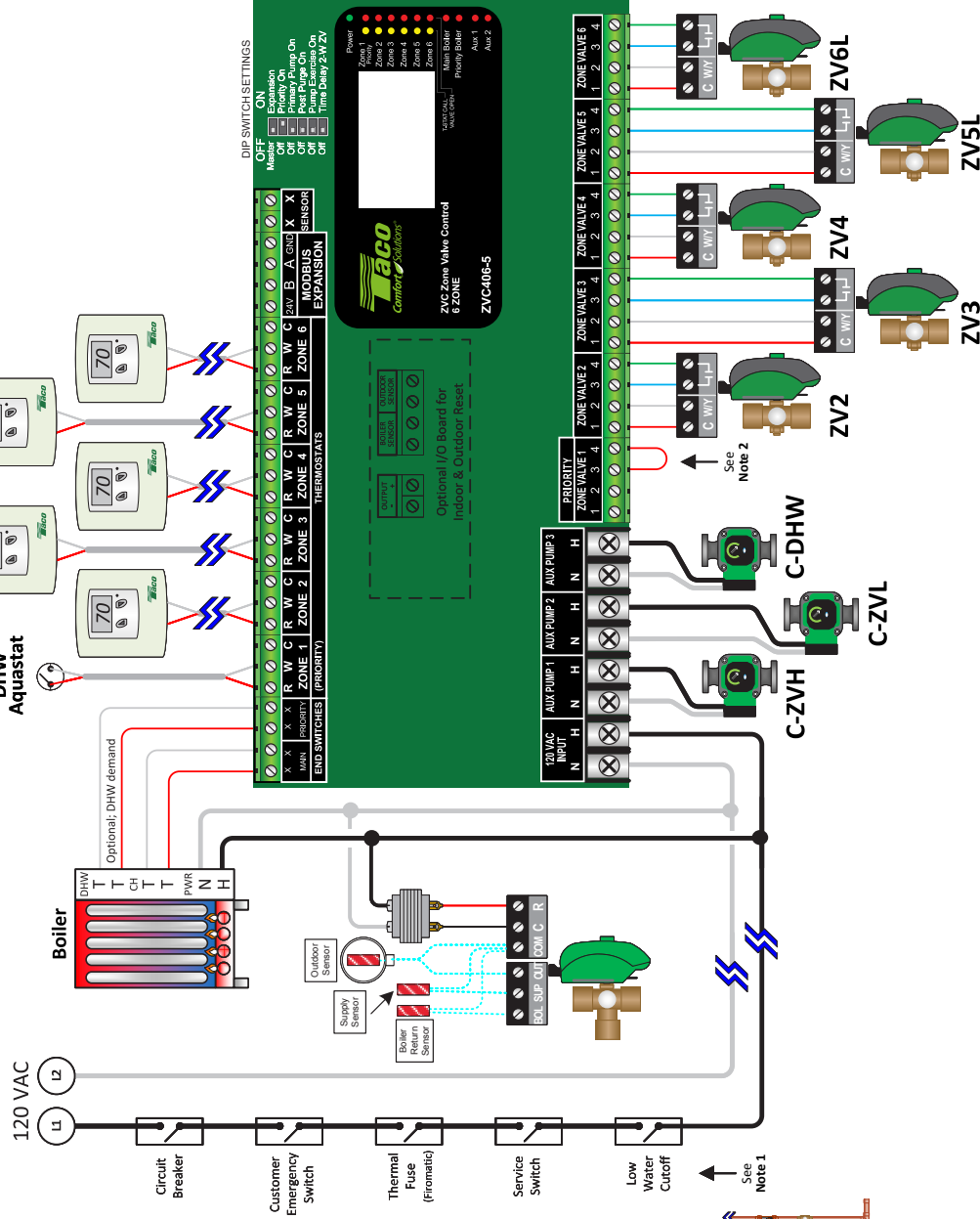
A green button labeled "SAVE" is positioned at the bottom right of the screen.

The right screenshot shows the "AUX Pump 2" screen. It features a similar table with six rows:

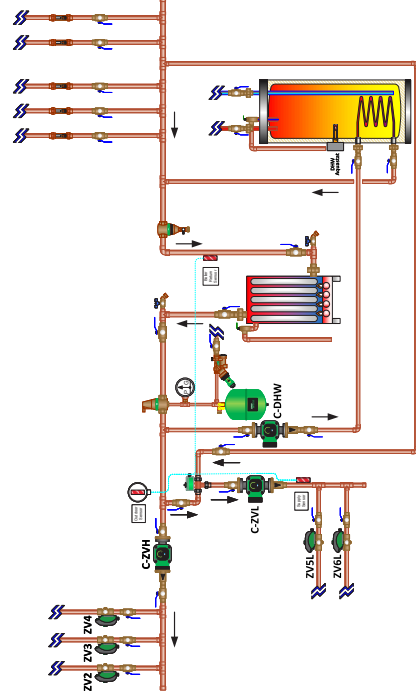
	Default
Activate on Zone 1	☐
Activate on Zone 2	☐
Activate on Zone 3	☐
Activate on Zone 4	☐
Activate on Zone 5	☒
Activate on Zone 6	☒

A green button labeled "SAVE" is positioned at the bottom right of the screen.

Electrical Diagram:



Mechanical Diagram:



Note: The Taco Control mobile app is not required for standard installations

Advanced Control & Monitoring Options: The Taco Control mobile app is only required to operate advanced control functions and parameters. Go to the App Store or Google Play and search Taco Control to download the app for iOS or Android devices. An installer can use their smartphone or tablet to view settings and make adjustments, ensuring the zone controls are optimally configured to best suit the heating and/or cooling application.

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Note 1: Some "Power Stealing" style thermostats may require a resistor between the W & C terminals; a 1000 Ohms 1/2 watt (or larger) have proved to work.

Note 2: Ensure load of zone control, circulator(s) & boiler do not exceed LWCO rating.

Note 3: If a 2 wire zone valve or no zone valve is used on individual zones, then jumper 3 and 4 of that zone in order for the control outputs to activate.

Conceptual Sketches Only, refer to individual manufacturer's installation instructions for additional details. Local codes shall prevail.





Switching Relays - Operation & DIP Switch Settings

General Operation: When any thermostat calls for heat, the appropriate circulating pump is energized, the red light goes on and the boiler end switch relay and AUX circulator relay(s) are energized (subject to DIP switch settings).

Expansion Connections (Modbus): Set DIP switch (#1) to MASTER on the switching relay that is designated as the priority zone control. Set all other daisy chained zone controls to EXPANSION. Using thermostat wire (18-22 gauge) connect between terminals A, B, GND on the master control to the corresponding A, B, GND on the expansion zone control(s). Zone controls may be daisy chained up to 20 Taco zoning panels using any combination of SR and ZVC controls (120 zones if all are 6 zone panels).

1	MASTER	☐	ON- EXPANSION
2	OFF	☐	ON- ZONE 1 PRIORITY
3	OFF	☐	ON- PRIMARY PUMP / AUX 2
4	OFF	☐	ON- POST PURGE
5	OFF	☐	ON- PUMP EXERCISE
6	OFF	☐	ON- ZC LOW LIMIT

Modbus is an open protocol method used for transmitting information back and forth over serial lines between Zone Control equipment. This will allow for future expansion to the zone control portfolio and with other participating OEM's equipment.

Priority Operation: When the priority DIP switch (#2) is set to ON and the priority zone (zone 1) is actuated, all other zones will stop operation until priority zone is satisfied. When not switched to priority, all zones will operate independently. More adjustments are available when using the Taco Control mobile app.

Priority Protection Operation: If the priority zone calls continuously for more than one hour, power is returned to all the other zones, allowing each zone to function independently. Once the priority zone is satisfied, the control's auto-reset is activated, and the priority zone is again allowed to have priority for up to one hour starting from when it calls next.

Primary Pump Operation: When the DIP switch (#3) is set to OFF, the primary circulating pump output will energize when any zone calls for heat, except the priority zone. When the DIP switch is set to ON, the primary circulating pump output will energize when any zone calls for heat.

Post Purge Operation: When the DIP switch (#4) is set to ON, the last zone on will stay energized for 2 minutes after its thermostat or aquastat is satisfied, but not operate the boiler. More adjustments are available when using the Taco Control mobile app. Note: Post purge is only supported on controls designated as MASTER. Post purge is not supported on expansion controls.

Pump Exercise Operation: When the DIP switch (#5) is set to ON, the solid state timer cycles all the circulating pumps that are attached to the Switching Relay to run for 30 seconds every 2 weeks. More adjustments are available when using the Taco Control mobile app. When using multiple Switching Relays, **only** the master control DIP switch (#5) should be set to on.

Low Limit (ZC) Operation: When the DIP switch (#6) is set to ON and the boiler drops below the set low limit (terminal ZC connected to boiler), all zone circulating pumps will stop. When the boiler rises above the set low limit, the zone circulating pumps are allowed to operate.

AUX PUMP 1; ZR / DHW Recirc Output: The AUX PUMP 1 output is energized when any zone calls for heat. When a DHW supply sensor is connected to Sensor Input terminals, then AUX PUMP 1 will energize a DHW recirculation pump using SmartPlus® logic. More adjustments are available when using the Taco Control mobile app.

AUX PUMP 2; Primary Circulator Output: The AUX PUMP 2 output follows DIP switch setting #3 listed above. More adjustments are available when using the Taco Control mobile app.

SmartPlus Recirc Logic: SmartPlus adds intelligence to your system by learning when hot water is used in the home. The pipe-mounted sensor records daily hot water usage patterns during the course of the week. Recorded data is used to automatically run the circulator at the same times the following week. So hot water is always available when it is needed. If usage pattern changes, the SmartPlus adjusts automatically.

“Smart” Mode (default mode): The SmartPlus logic will run in Pulse mode as described below for the first 7 days of operation. During the first 7 days, the SmartPlus logic monitors and records the home's hot water usage pattern. For the following 7 days, the SmartPlus logic will use the preceding week's usage pattern to cycle the pump during the recorded hot water usage times. This process of recording and repeating is continuous, and automatically adjusts the pump's “ON” times to match the household's usage pattern.

“Pulse” Mode: When set to Pulse mode, the SmartPlus logic will cycle the circulator pump “ON” for 5 minutes, then “OFF” for 10 minutes to maintain hot water at all faucets and taps. It will repeat the cycle continuously. More adjustments are available when using the Taco Control mobile app.

When a DHW supply sensor is connected to the Sensor Input terminals, AUX PUMP 1 output will now be designated for recirculation of DHW loop and activated in “Smart” mode based on DHW usage.



Zone Valve Controls - Operation & DIP Switch Settings

General Operation: When any thermostat calls for heat, the appropriate zone valve is energized, and the yellow light goes on. When the zone valve is fully open, the red light goes on and energizes the boiler end switch relay and AUX circulator relay(s) (subject to DIP switch settings).

Expansion Connections (Modbus): Set DIP switch (#1) to MASTER on the switching relay that is designated as the priority zone control. Set all other daisy chained zone controls to EXPANSION. Using thermostat wire (18-22 gauge) connect between terminals A, B, GND on the master control to the corresponding A, B, GND on the expansion zone control(s). Zone controls may be daisy chained up to 20 Taco zoning panels using any combination of SR and ZVC controls (120 zones if all are 6 zone panels).

	OFF	ON
1	MASTER	ON- EXPANSION
2	OFF	ON- ZONE 1 PRIORITY
3	OFF	ON- PRIMARY PUMP/AUX2
4	OFF	ON- POST PURGE
5	OFF	ON- PUMP EXERCISE
6	OFF	ON- TIME DELAY 2-W ZV

Modbus is an open protocol method used for transmitting information back and forth over serial lines between Zone Control equipment. This will allow for future expansion to the zone control portfolio and with other participating OEM's equipment.

Priority Operation: When the priority DIP switch (#2) is set to ON and the priority zone (zone 1) is actuated, all other zones will stop operation until priority zone is satisfied. When not switched to priority, all zones will operate independently. More adjustments are available when using the Taco Control mobile app.

Priority Protection Operation: If the priority zone calls continuously for more than one hour, power is returned to all the other zones, allowing each zone to function independently. Once the priority zone is satisfied, the control's auto-reset is activated, and the priority zone is again allowed to have priority for up to one hour starting from when it calls next.

Primary Pump Operation: When the DIP switch (#3) is set to OFF, the AUX PUMP 2 circulating pump output will energize when any zone calls for heat, except the priority zone. When the DIP switch is set to ON, the AUX PUMP 2 circulating pump output will energize when any zone calls for heat.

Post Purge Operation: When the DIP switch (#4) is set to ON, the AUX PUMP 3 (priority zone) circulating pump output will stay energized for 2 minutes after any zone thermostat or aquastat is satisfied, but not operate the boiler. More adjustments are available when using the Taco Control mobile app. Note: Post purge is only supported on controls designated as MASTER. Post purge is not supported on expansion controls.

Pump Exercise Operation: When the DIP switch (#5) is set to ON, the solid state timer cycles all the AUX circulating pump outputs that are attached to the Zone Valve Control to run for 30 seconds every 2 weeks. More adjustments are available when using the Taco Control mobile app. When using multiple Zone Valve Controls **only** the master control DIP switch (#5) should be set to ON.

Time Delay for Zone Valves without End Switches: When the DIP switch (#6) is set to ON, the boiler end switch relay(s) and AUX PUMP 1, AUX PUMP 2 and AUX PUMP 3 circulating pump outputs are delayed operating by 1 minute. When DIP switch (#6) is set to OFF, then either zone valve with an end switch or jumper between terminals 3 and 4 of zone output is required. More adjustments are available when using the Taco Control mobile app.

AUX PUMP 1; DHW Recirc or System Circulator Output: The AUX PUMP 1 output is energized when any zone calls for heat and zone valve end switch is closed. When a DHW supply sensor is connected to Sensor Input terminals, then AUX PUMP 1 will energize a DHW recirculation pump using SmartPlus® logic. More adjustments are available when using the Taco Control mobile app.

AUX PUMP 2; Primary Circulator Output: The AUX PUMP 2 output follows DIP switch setting #3 listed above. More adjustments are available when using the Taco Control mobile app.

AUX PUMP 3; Priority Zone Circulator Output: The AUX PUMP 3 output is energized when zone 1 calls for heat and zone valve end switch is closed or zone 1 terminals 3 and 4 are jumpered. More adjustments are available when using the Taco Control mobile app.

SmartPlus Recirc Logic: SmartPlus adds intelligence to your system by learning when hot water is used in the home. The pipe-mounted sensor records daily hot water usage patterns during the course of the week. Recorded data is used to automatically run the circulator at the same times the following week. So hot water is always available when it is needed. If usage pattern changes, the SmartPlus adjusts automatically.

“Smart” Mode (default mode): The SmartPlus logic will run in Pulse mode as described below for the first 7 days of operation. During the first 7 days, the SmartPlus logic monitors and records the home's hot water usage pattern. For the following 7 days, the SmartPlus logic will use the preceding week's usage pattern to cycle the pump during the recorded hot water usage times. This process of recording and repeating is continuous, and automatically adjusts the pump's “ON” times to match the household's usage pattern.

“Pulse” Mode: When set to Pulse mode, the SmartPlus logic will cycle the circulator pump “ON” for 5 minutes, then “OFF” for 10 minutes to maintain hot water at all faucets and taps. It will repeat the cycle continuously. More adjustments are available when using the Taco Control mobile app.

When a DHW supply sensor is connected to the Sensor Input terminals, AUX PUMP 1 output will now be designated for recirculation of DHW loop and activated in “Smart” mode based on DHW usage.



Troubleshooting

For your convenience, the Taco Tech Support team is available Mon-Fri 8am-5pm EST. Just call 401-942-8000 for help.

Problem: Digital thermostats do not work correctly when connected to a switching relay.

Solution: Some thermostats are a "Power Stealing" type which means they are powered by the switching relay with just 2 wires (R & W). A resistor may be needed in order to have the thermostat work properly. This resistor should be placed between the W & C (common) terminals of the switching relay. If the thermostat manufacturer does not supply a resistor, a 1000 ohm ½ watt resistor has proven to work with most.

Problem: No heat in a zone or room of building.

Solution: LED diagnostic lights will help find a component that is not working properly. The green LED should always be on, indicating that power is connected, and the solid-state fuse is good. When there is a call for heat, the red LED will come on indicating power to the zone circulator. This indicates the thermostat is working correctly. If the red LED does not come on, then check the thermostat and thermostat wiring for errors.

Troubleshooting Sensors:

As in any troubleshooting procedure, it is important to isolate a problem as much as possible before proceeding. The blinking error LED light greatly simplifies troubleshooting the zone controls. If you suspect a wiring fault, carefully check all external wiring and wiring connections.

Sensor Errors:

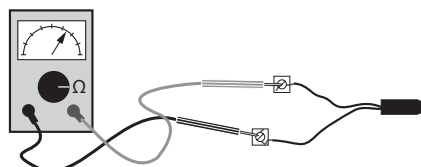
- If an outdoor sensor fault occurs, the zone controls will assume a fixed outdoor temperature of 32°F (0°C) and will target the appropriate supply water temperature. The Main Boiler light will blink indicating the outdoor sensor error.
- If a boiler sensor fault occurs, the zone controls turns the boiler output off and the Priority Boiler light will blink indicating the boiler supply sensor error.

Sensor Error Handling		
Sensor	Shorted Sensor	Open Sensor
Boiler Sensor	Flash once Main Boiler LED	Flash twice Main Boiler LED
Outdoor Sensor	Flash once Priority Boiler LED	Flash twice Priority Boiler LED
Universal Sensor (Recirc)	Flash once AUX 1 LED	Flash twice AUX 1 LED

Testing the Sensors:

A good quality test meter capable of measuring up to 5,000 kΩ (1 k = 1000 Ω) is required to measure the sensor resistance. In addition to this, the actual temperature must be measured with either a good quality digital thermometer, or, if a thermometer is not available, a second sensor can be placed alongside the one to be tested and the readings compared. First measure the temperature using the thermometer and then measure the resistance of the sensor at the control. The wires from the sensor must not be connected to the control while the test is performed. Using the chart below, estimate the temperature measured by the sensor. The sensor and thermometer readings should be close. If the test meter reads a very high resistance, there may be a broken wire, a poor wiring connection or a defective sensor. If the resistance is very low, the wiring may be shorted, there may be moisture in the sensor, or the sensor may be defective. To test for a defective sensor, measure the resistance directly at the sensor location.

Temperature		Resistance	Temperature		Resistance	Temperature		Resistance	Temperature		Resistance
°F	°C	Ω	°F	°C	Ω	°F	°C	Ω	°F	°C	Ω
-30	-34	234,196	30	-1	34,558	90	32	7,334	150	66	2,045
-20	-29	165,180	40	4	26,099	100	38	5,828	160	71	1,689
-10	-23	118,018	50	10	19,900	110	43	4,665	170	77	1,403
0	-18	85,362	60	16	15,311	120	49	3,760	180	82	1,172
10	-12	62,465	70	21	11,883	130	54	3,050	190	88	983
20	-7	46,218	80	27	9,299	140	60	2,490	200	93	829





Standard Terms and Definitions

Switching Relay: Transformer and relay in one box, which allows a low voltage thermostat to control a line voltage load (circulator), with an isolated end switch that can energize the boiler.

Zone Valve Control: Transformer and relay in one box, which allows a low voltage thermostat to control a low voltage zone valve, with an isolated end switch that can energize the boiler and/or circulators.

Dry Contacts: Set of relay contacts where no voltage is present. Usually, can switch 24 or 120 VAC.

Isolated End Set Switch: Set of dry contacts that when a zone calls for heat. Usually connected to a boiler's aquastat TT.

TT: Where thermostat or aquastat connects on a heating control.

XX: Denotes Isolated End Switch.

Low Voltage: 24 VAC for most HVAC systems.

Line Voltage: Normally 120 VAC relative to ground.

H or L1: Hot side of line voltage.

N or L2: Neutral side of line voltage.

ZR: 120 VAC (Hot) signal from switching relay to boiler's operating aquastat to fire the burner to high limit when any zone calls for heat. Also ideal for controlling primary circulator.

ZC: 120 VAC (Hot) signal from boiler's operating aquastat to switching relay allowing circulator(s) to run when aquastat is above the set low limit.

Cold Start: A boiler that fires only when there is a call for heat.

Tankless Coil: A method of heating domestic water utilizing a heat exchanger inside a boiler. The boiler also maintains heat year round to deliver hot water on demand.

Mod-Con: Is short for Modulating Condensing boiler. The boiler will modulate the output based on load connected and the flue gases condense in boiler to gain higher efficiency over non-condensing type boilers.

DHW Heater: A method of heating domestic water utilizing a heat exchanger and storage tank.

Transformer: A component for increasing or reducing AC voltage. Rated in VA (volts x amps).

OHMS Law:	Example: A 24 volt, 40 VA transformer can produce how much current? Current = VA / Voltage 40 / 24 = 1.6 Amps
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$I = E/R$ $R = E/I$ $E = I \times R$ $W = E \times I$ $I = W(VA)/E$	WHERE	I = Current in Amps R = Resistance in Ohms E = Volts W = Watts or VA
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Relay Contacts:

N/C: Normally closed connection of a relay, when not energized.

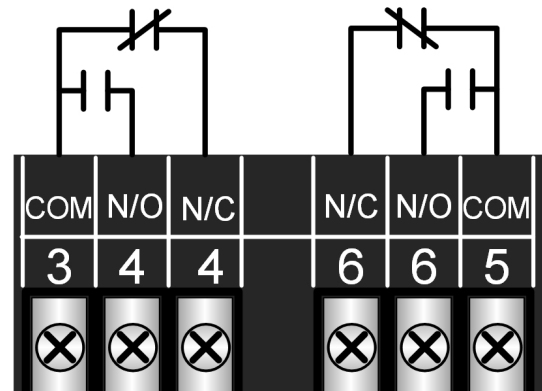
N/O: Normally open connection of a relay, when not energized.

Com: The common terminal for normally open and normally closed.

Pole: The number of independent circuits of a switch or relay.

Throw: The number of settings which a switch or relay can have.

DPDT = Double Pole Double Throw





Zone Controls Cross Reference

Product Description	Taco Model Number	Argo Model Number		Azel Model Number	Caleffi Model Number	Grundfos Model Number	Honeywell Model Number		Tekmar Model Number
SWITCHING RELAYS - FOR CIRCULATING PUMPS									
1 Zone Switching Relay	SR501-5	AR82211		SP-81	ZSR101	UPZCP-1		HPSR101	301P
2 Zone Switching Relay	SR502-5	ARM-2P		SP-82					302P
3 Zone Switching Relay	SR503-5	ARM-3P	UZ3	SP-83	ZSR103	UPZCP-3		HPSR103	303P
4 Zone Switching Relay	SR504-5	ARM-4P	UZ4	SP-84	ZSR104	UPZCP-4	AQ25042B	HPSR104	304P
6 Zone Switching Relay	SR506-5	ARM-6P	UZ6	SP-86	ZSR106	UPZCP-6		HPSR106	306P
ZONE VALVE CONTROLS - FOR ZONE VALVES									
3 Zone - Zone Valve Control	ZVC403-5	AZ-3	UZ3		ZVR103	UPCV-3		HPZC103	303V
4 Zone - Zone Valve Control	ZVC404-5	AZ-4CP	UZ4	SZ-84DX	ZVR104	UPCV-4	AQ25044B	HPZC104	304V
5 Zone - Zone Valve Control	ZVC405-5	AZ-5						HPZC105	305V
6 Zone - Zone Valve Control	ZVC406-5	AZ-6CP	UZ6	SZ-86DX	ZVR106	UPCV-6		HPZC106	306V

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