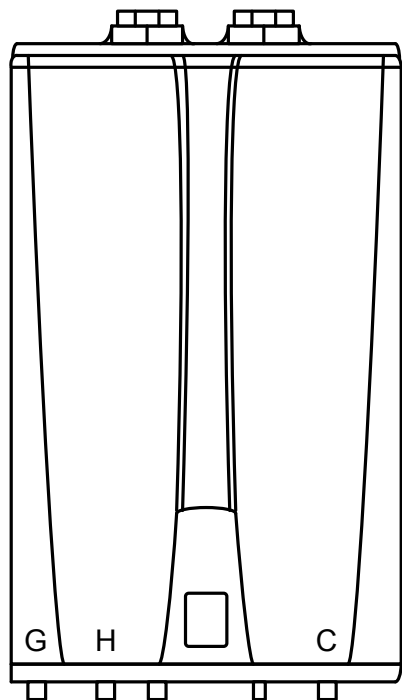
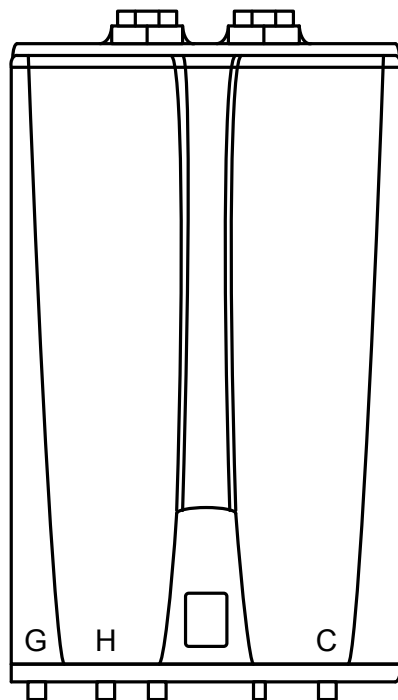


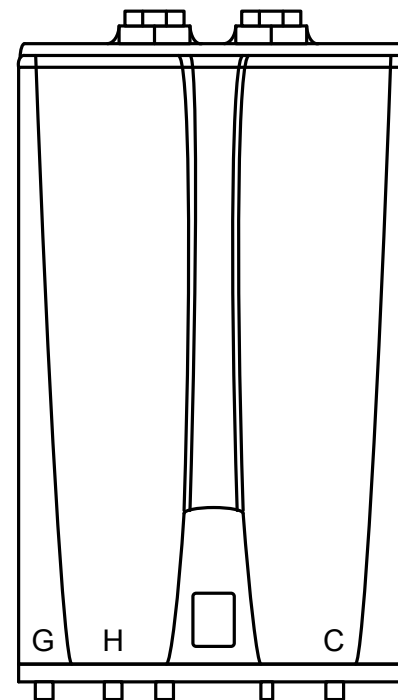
# NPE Series Application Drawings



**NPE-240A**



**NPE-210A**



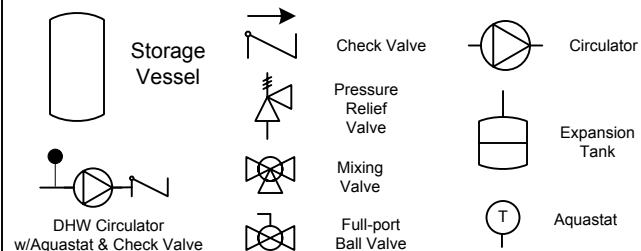
**NPE-180A**



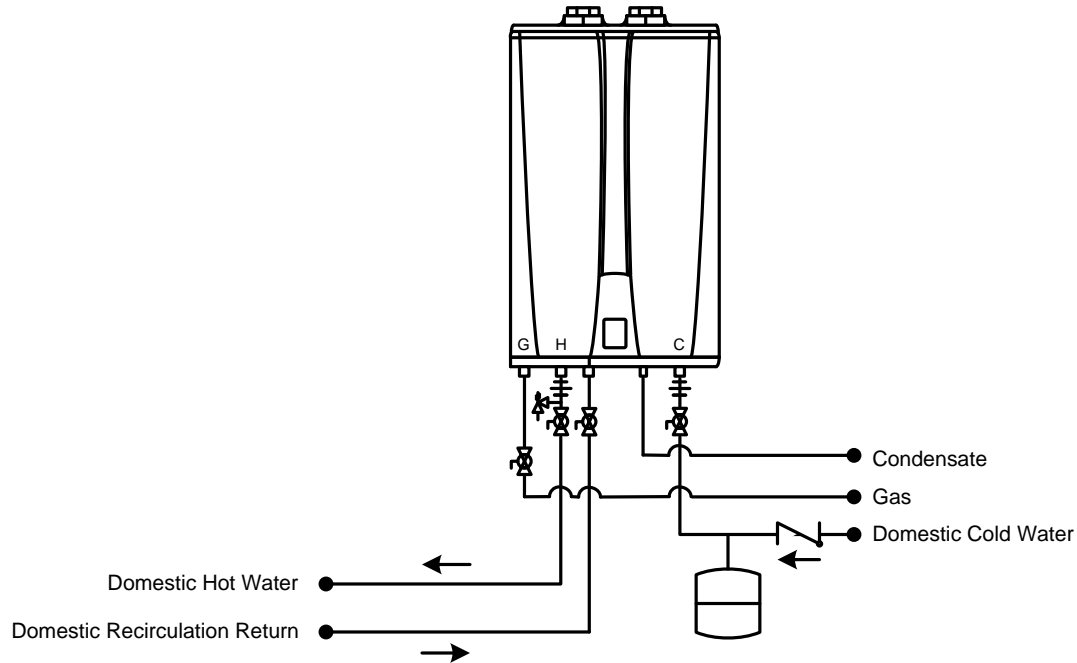
20 Goodyear  
Irvine, CA 92618  
800-519-8794  
www.Navien.com

**Guide Only**

These drawing are intended as a guide only and not as a replacement for professionally engineered project drawings. These concept system drawings do not imply compliance with local building codes. Actual installations may vary depending on installation location & parameters and it must be done in accordance with all local building codes. Verify with local building officials before commencement of system installations.



This drawing is intended only as a guide and not as a replacement for professionally engineered project drawings. This concept system drawing does not imply compliance with local building codes. Actual installation may vary depending on installation location & parameters and it must be done in accordance to all local building codes. Verify with local building officials before commencement of system installation.



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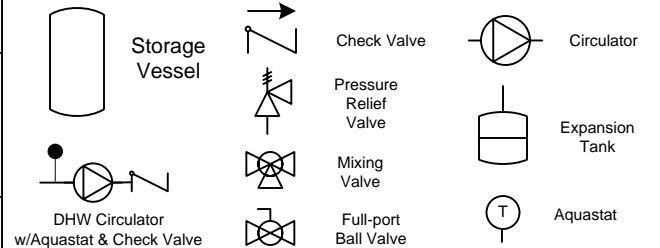
NPE-A Series Tankless Water Heater

One NPE-A Tankless  
External Recirculation Mode

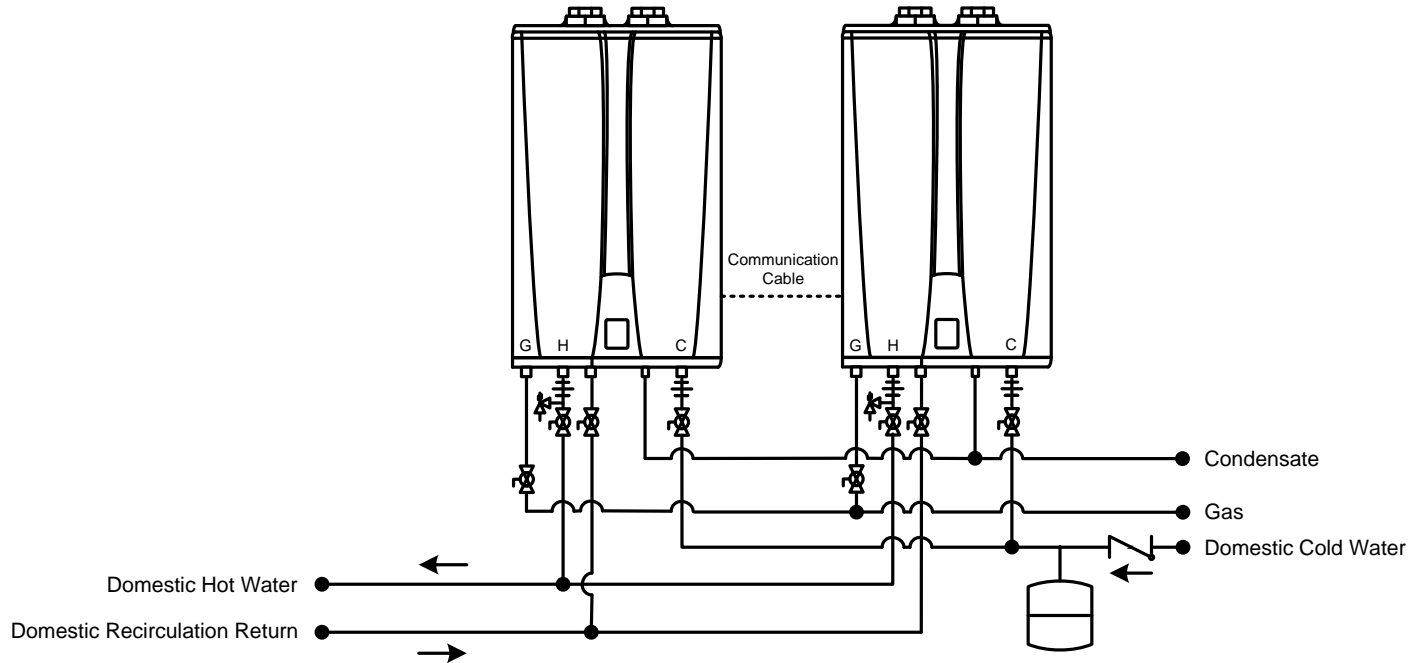
Drawn By: B. Fenske

NPE-A-1-E-BF02

August 1, 2013



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Recommended Pipe Size/Heater Count

1 Unit - 3/4"

2 Units - 1"

3 Units - 1-1/4"

4 to 5 Units - 1-1/2"

6 to 8 Units - 2"

9 to 14 Units - 2-1/2"

15 to 16 Units - 3"

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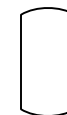
NPE-A Series Tankless Water Heater

Two NPE-A Tankless  
External Recirculation Mode

Drawn By: B. Fenske

NPE-A-2-E-BF02

August 1, 2013



Storage  
Vessel



Check Valve



Circulator



Pressure  
Relief  
Valve



Expansion  
Tank



Mixing  
Valve



Aquastat

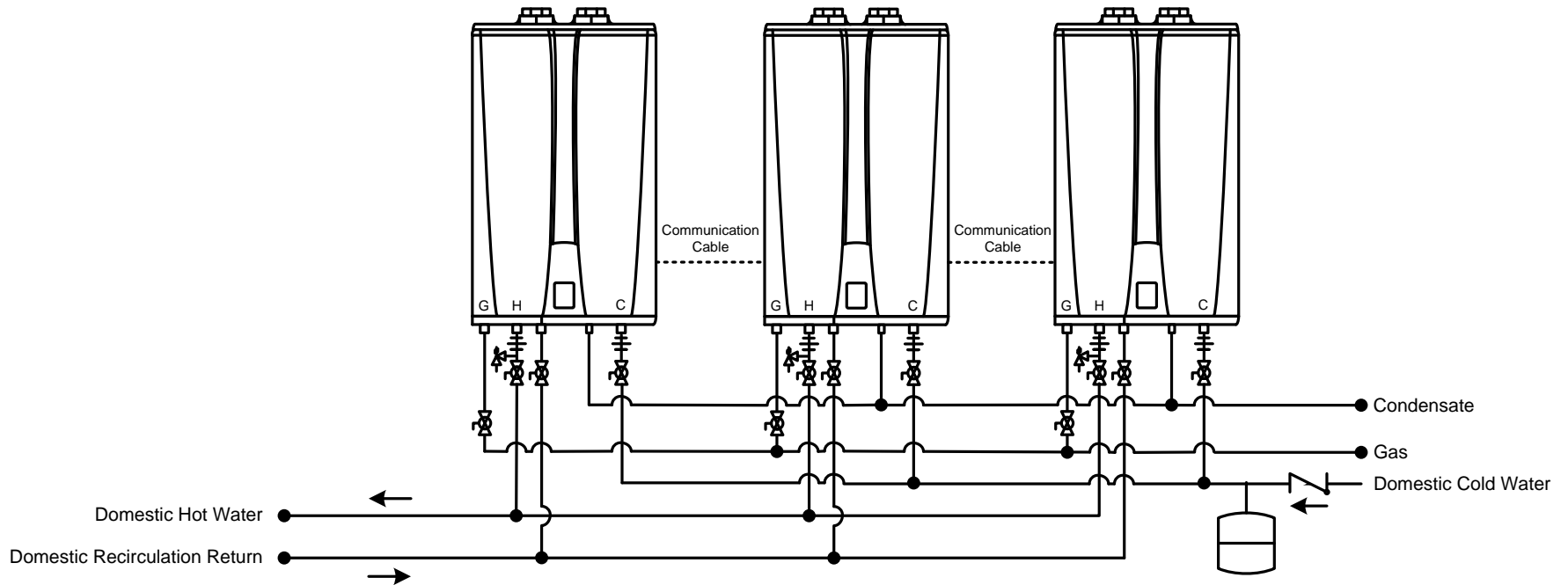


DHW Circulator  
w/Aquastat & Check Valve



Full-port  
Ball Valve

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Recommended Pipe Size/Heater Count	1 Unit - 3/4"	2 Units - 1"	3 Units - 1-1/4"	4 to 5 Units - 1-1/2"	6 to 8 Units - 2"	9 to 14 Units - 2-1/2"	15 to 16 Units - 3"
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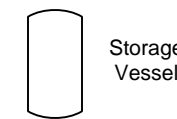
NPE-A Series Tankless Water Heater

Three NPE-A Tankless  
External Recirculation Mode

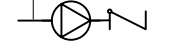
Drawn By: B. Fenske

NPE-A-3-E-BF02

August 1, 2013



Storage Vessel



DHW Circulator  
w/Aquastat & Check Valve



Check Valve



Pressure Relief Valve



Mixing Valve



Full-port Ball Valve



Circulator

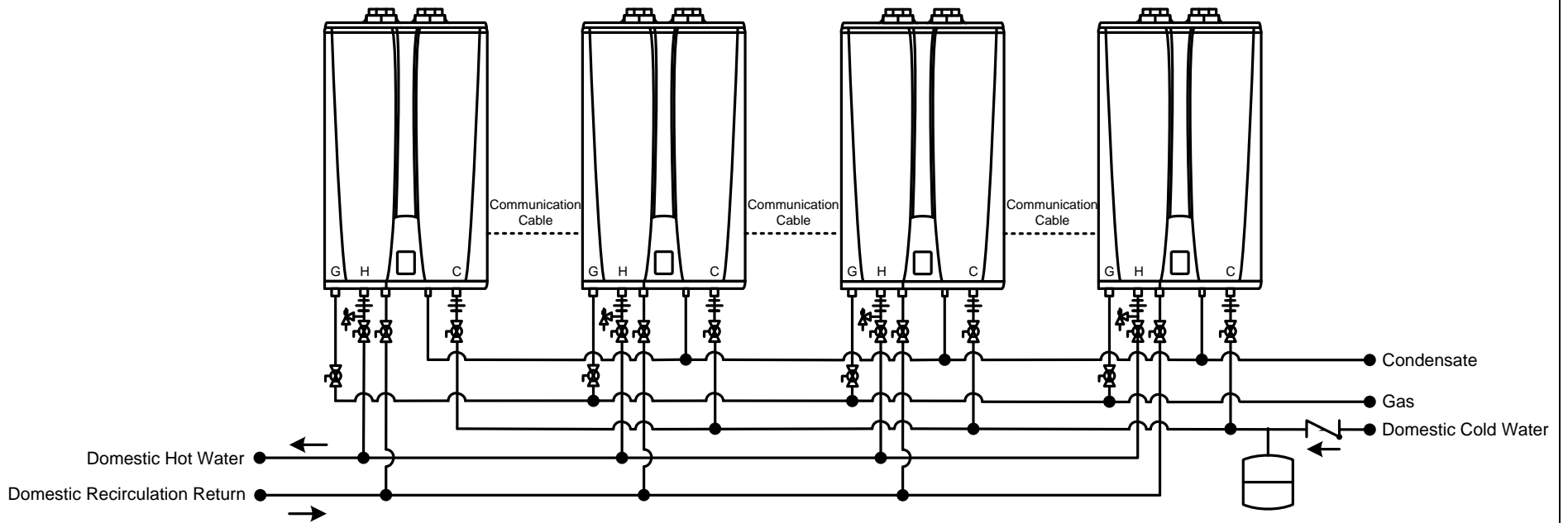


Expansion Tank



Aquastat

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Recommended Pipe Size/Heater Count

1 Unit - 3/4"

2 Units - 1"

3 Units - 1-1/4"

4 to 5 Units - 1-1/2"

6 to 8 Units - 2"

9 to 14 Units - 2-1/2"

15 to 16 Units - 3"



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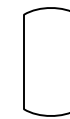
NPE-A Series Tankless Water Heater

Four NPE-A Tankless  
External Recirculation Mode

Drawn By: B. Fenske

NPE-A-4-E-BF02

August 1, 2013



Storage  
Vessel



DHW Circulator  
w/Aquastat & Check Valve



Check Valve



Pressure  
Relief  
Valve



Mixing  
Valve



Full-port  
Ball Valve



Circulator



Expansion  
Tank

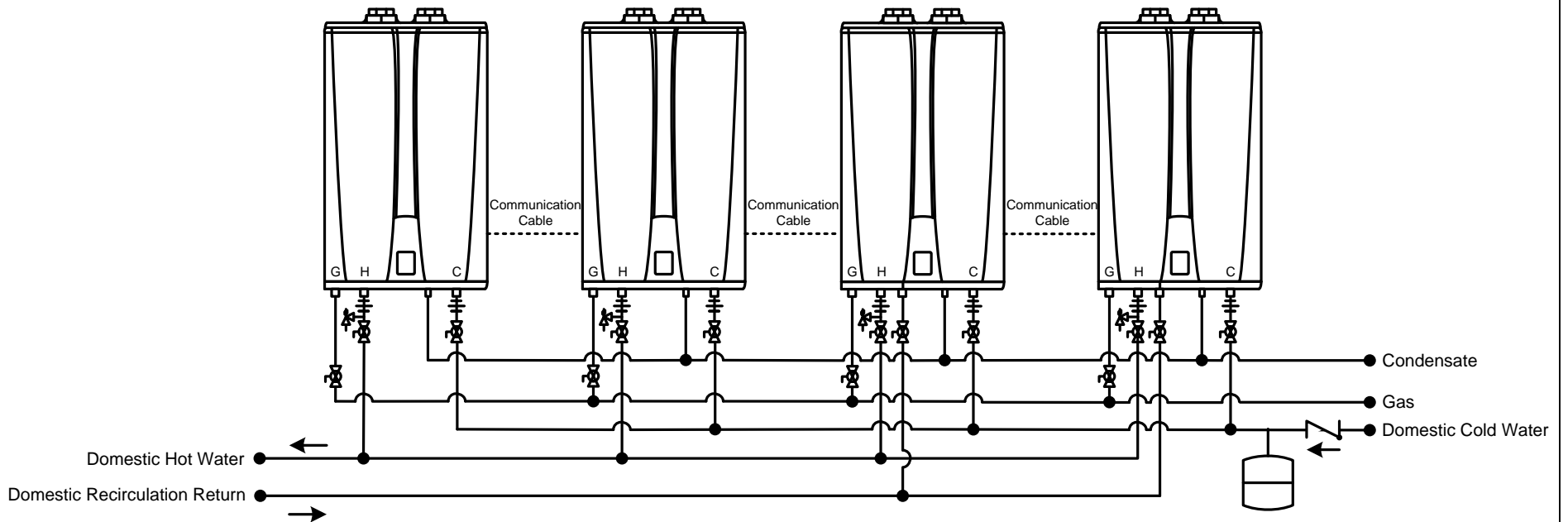


Aquastat

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**Note:**

- Applications with a mixture of Navien NPE-A (Circulation) & NPE-S (Standard) the following should be followed:
1. 50% of Tankless Units shall be NPE-A Models
  2. Minimum of 2 NPE-A (2 of 3-4, 3 of 6)



Recommended Pipe Size/Heater Count

1 Unit - 3/4"

2 Units - 1"

3 Units - 1-1/4"

4 to 5 Units - 1-1/2"

6 to 8 Units - 2"

9 to 14 Units - 2-1/2"

15 to 16 Units - 3"



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NPE-A/S Series Tankless Water Heater

Four NPE-A/NPE-S Tankless  
External Recirculation Mode

Drawn By: B. Fenske

NPE-A-S-4-E-BF02

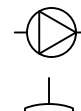
August 1, 2013



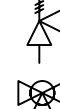
Storage Vessel



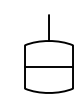
Check Valve



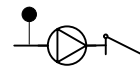
Circulator



Pressure Relief Valve



Expansion Tank



DHW Circulator  
w/Aquastat & Check Valve



Mixing Valve

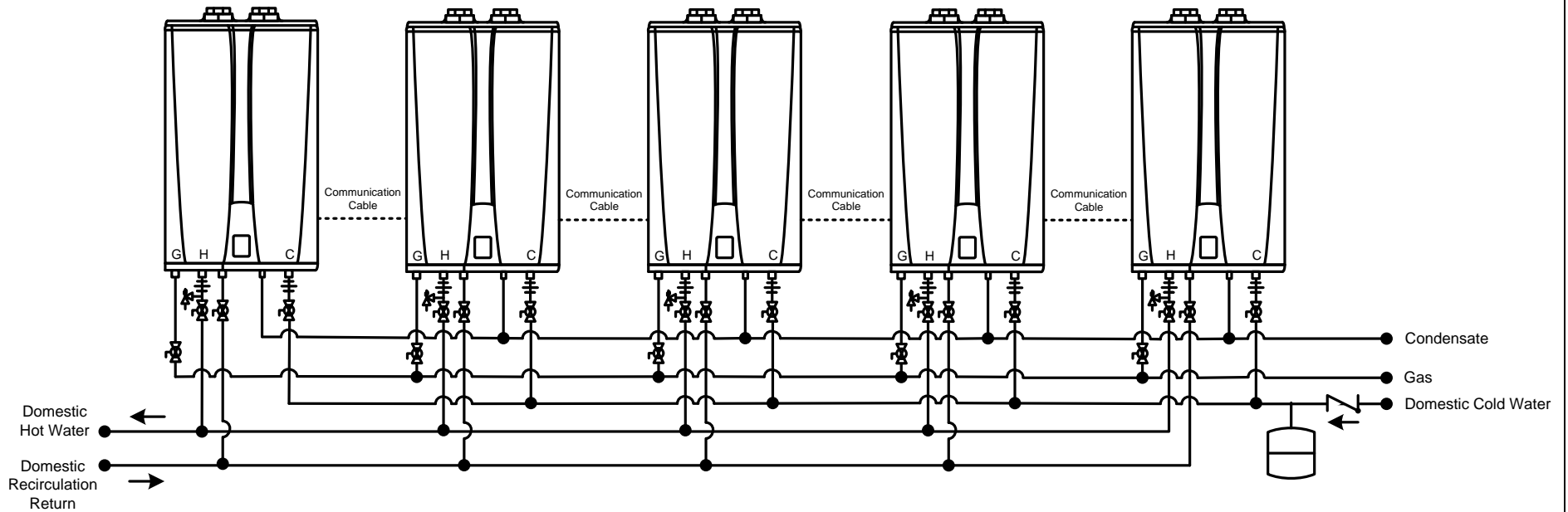


Aquastat



Full-port Ball Valve

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Recommended Pipe Size/Heater Count

1 Unit - 3/4"

2 Units - 1"

3 Units - 1-1/4"

4 to 5 Units - 1-1/2"

6 to 8 Units - 2"

9 to 14 Units - 2-1/2"

15 to 16 Units - 3"

**KD Navien**

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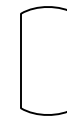
NPE-A Series Tankless Water Heater

Five NPE-A Tankless  
External Recirculation Mode

Drawn By: B. Fenske

NPE-A-5-E-BF02

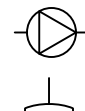
August 1, 2013



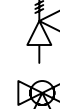
Storage  
Vessel



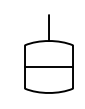
Check Valve



Circulator



Pressure  
Relief  
Valve



Expansion  
Tank



DHW Circulator  
w/Aquastat & Check Valve



Mixing  
Valve

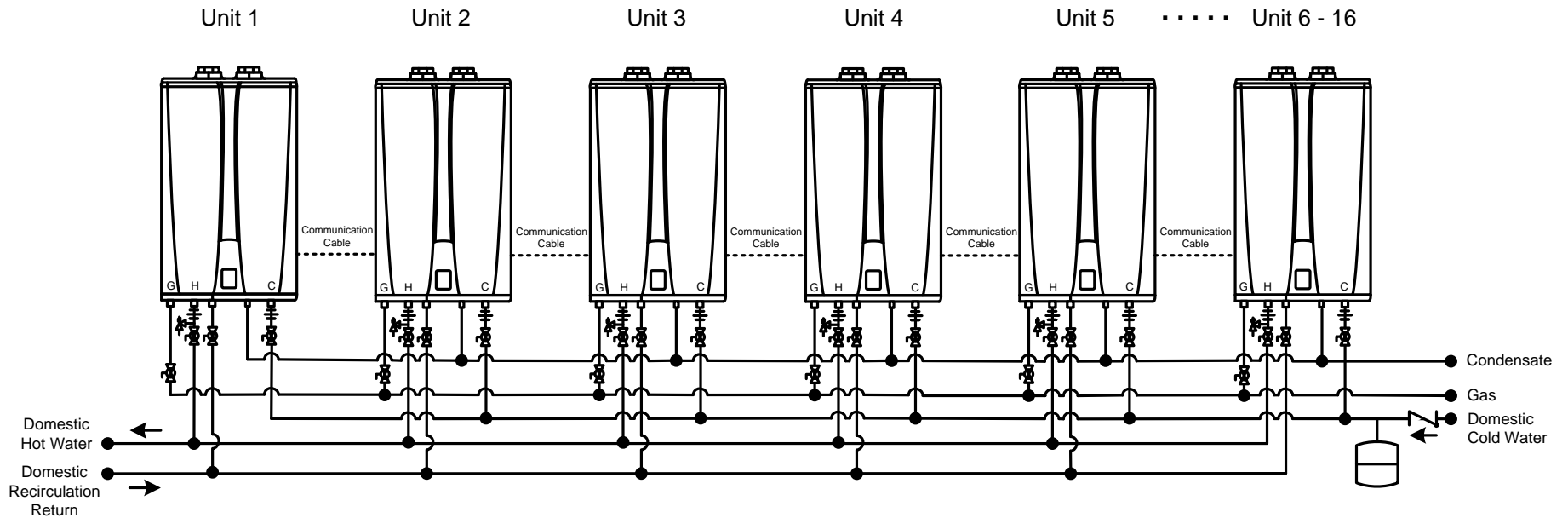


Full-port  
Ball Valve



Aquastat

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Recommended Pipe Size/Heater Count	1 Unit - 3/4"	2 Units - 1"	3 Units - 1-1/4"	4 to 5 Units - 1-1/2"	6 to 8 Units - 2"	9 to 14 Units - 2-1/2"	15 to 16 Units - 3"
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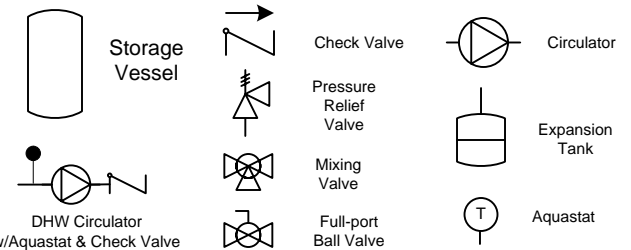
NPE-A Series Tankless Water Heater

Six Plus NPE-A Tankless  
External Recirculation Mode

Drawn By: B. Fenske

NPE-A-6P-E-BF02

August 1, 2013



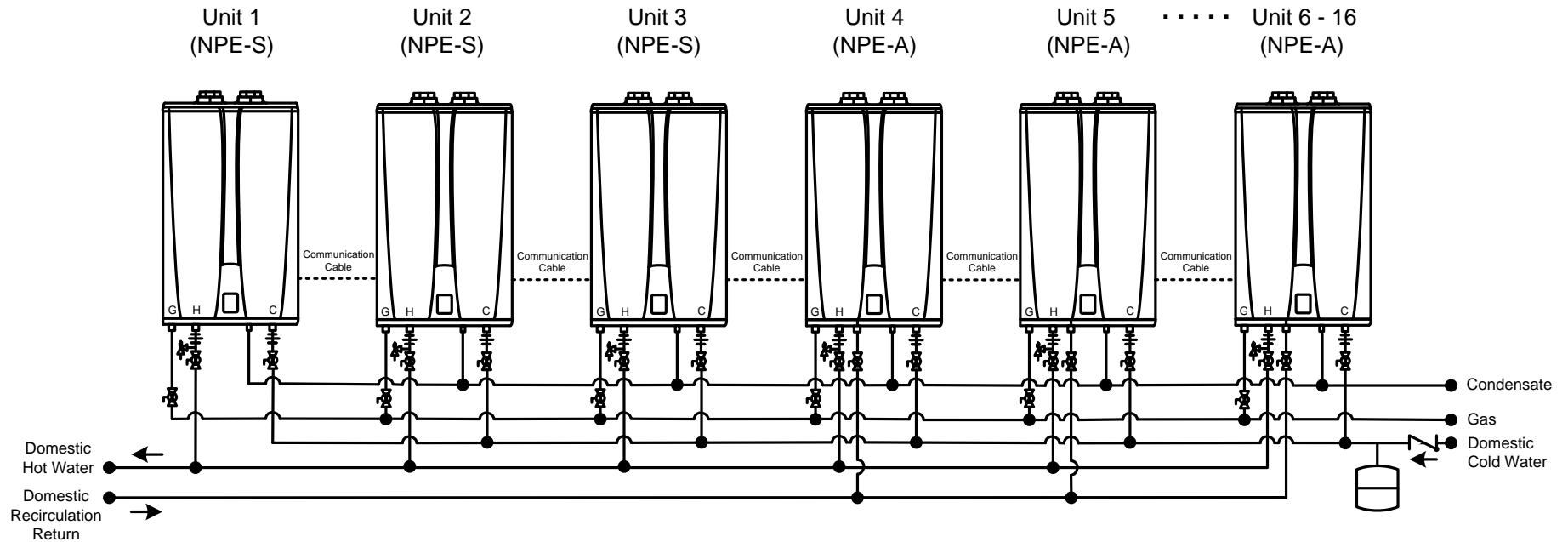


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**Note:**

Applications with a mixture of Navien NPE-A (Circulation) & NPE-S (Standard) the following should be followed:

1. 50% of Tankless Units shall be NPE-A Models
2. Minimum of 2 NPE-A (2 of 3-4, 3 of 6)



Recommended Pipe Size/Heater Count

1 Unit - 3/4"

2 Units - 1"

3 Units - 1-1/4"

4 to 5 Units - 1-1/2"

6 to 8 Units - 2"

9 to 14 Units - 2-1/2"

15 to 16 Units - 3"



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NPE-A\S Series Tankless Water Heater

Six Plus NPE-A\NPE-S Tankless  
External Recirculation Mode

Drawn By: B. Fenske

NPE-A-S-6P-E-BF02

August 1, 2013



Storage Vessel



DHW Circulator  
w/Aquastat & Check Valve



Check Valve



Pressure Relief Valve



Mixing Valve



Full-port Ball Valve



Circulator

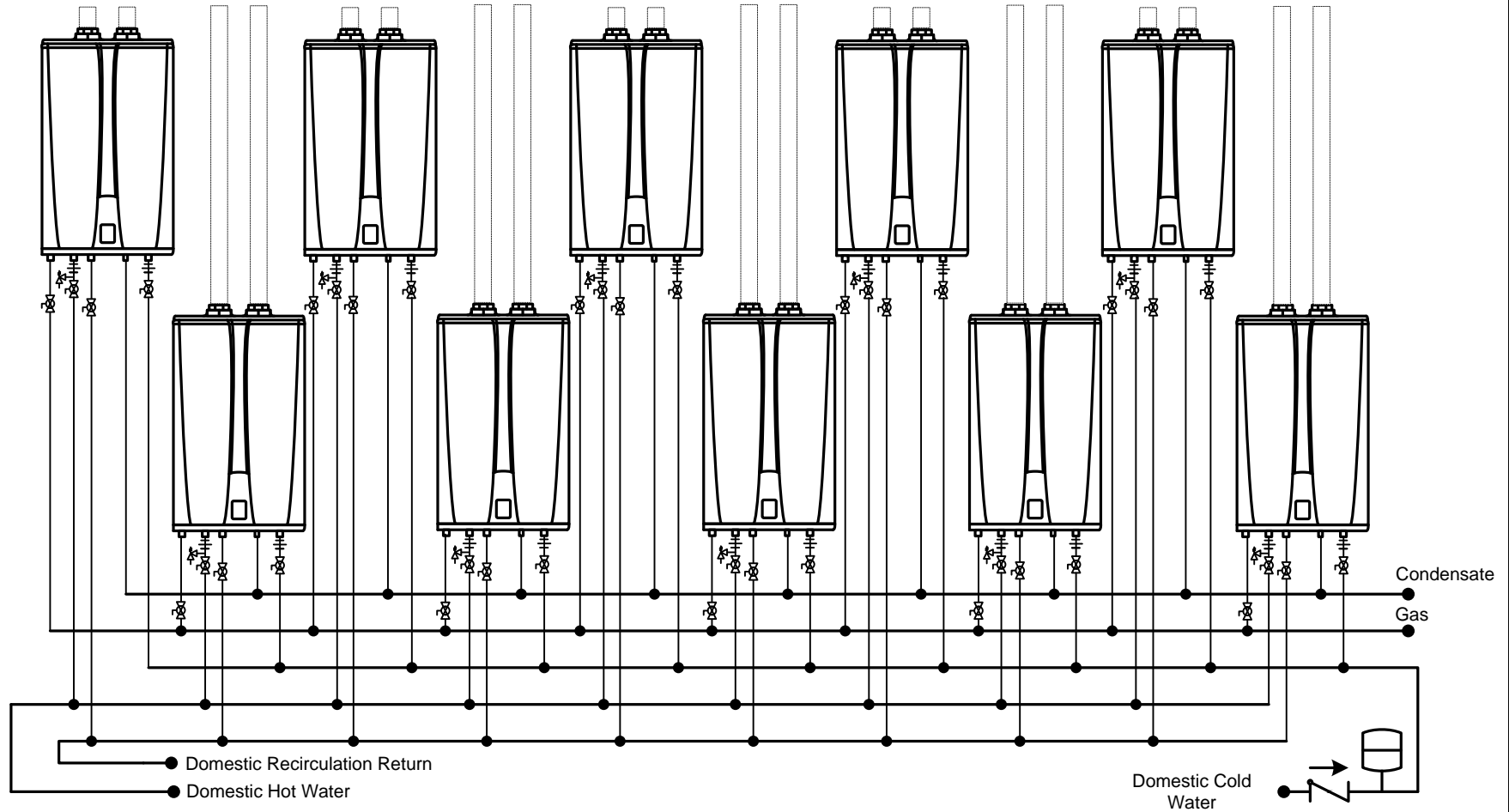


Expansion Tank



Aquastat

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Recommended Pipe Size/Heater Count

1 Unit - 3/4"

2 Units - 1"

3 Units - 1-1/4"

4 to 5 Units - 1-1/2"

6 to 8 Units - 2"

9 to 14 Units - 2-1/2"

15 to 16 Units - 3"



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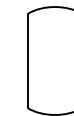
NPE-A Series Tankless Water Heater

Ten NPE-A Tankless  
External Recirculation Mode  
Alternative Mounting Shown

Drawn By: B. Fenske

NPE-A-10-E-BF02

August 1, 2013



Storage Vessel



Check Valve



Circulator



Pressure Relief Valve



Expansion Tank



Mixing Valve



Aquastat

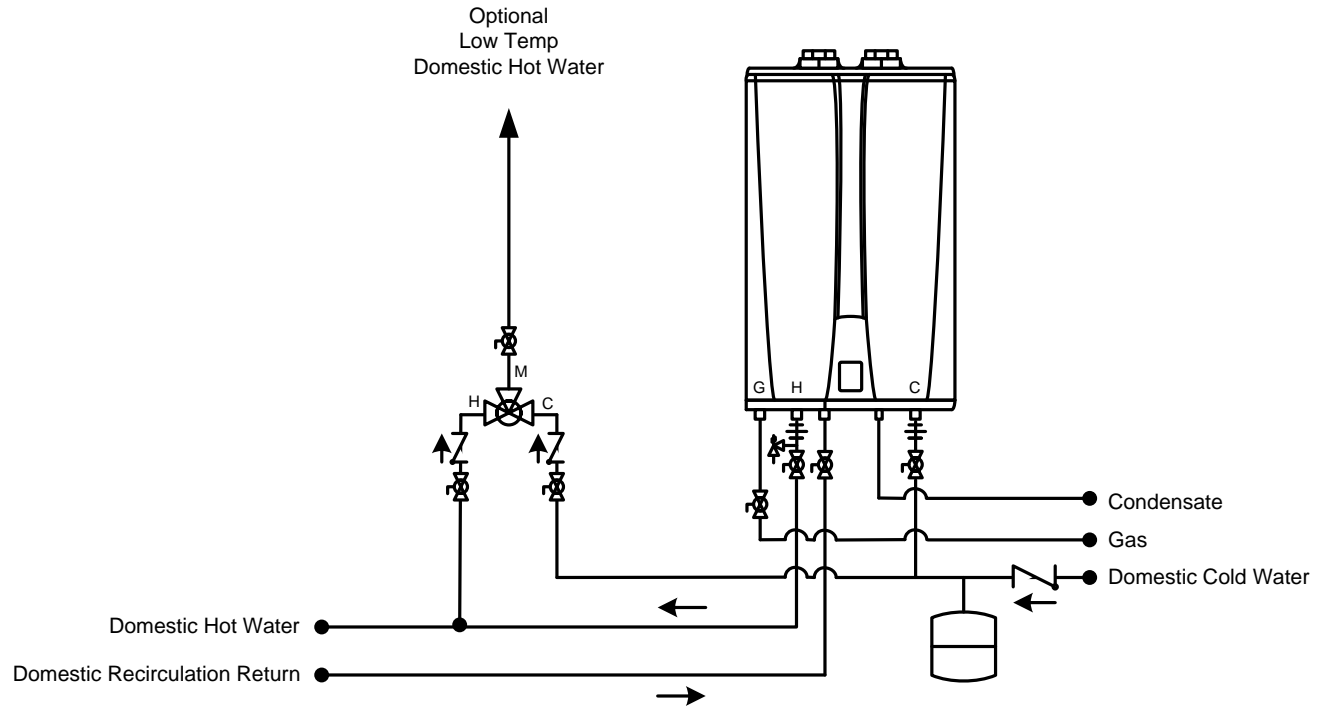


DHW Circulator  
w/Aquastat & Check Valve



Full-port Ball Valve

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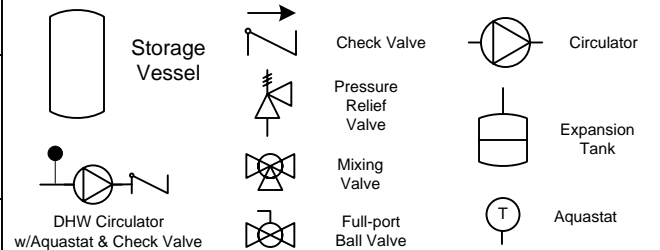
**NPE-A Series Tankless Water Heater**

One NPE-A Tankless  
External Recirculation Mode  
With Low Temp Secondary Supply

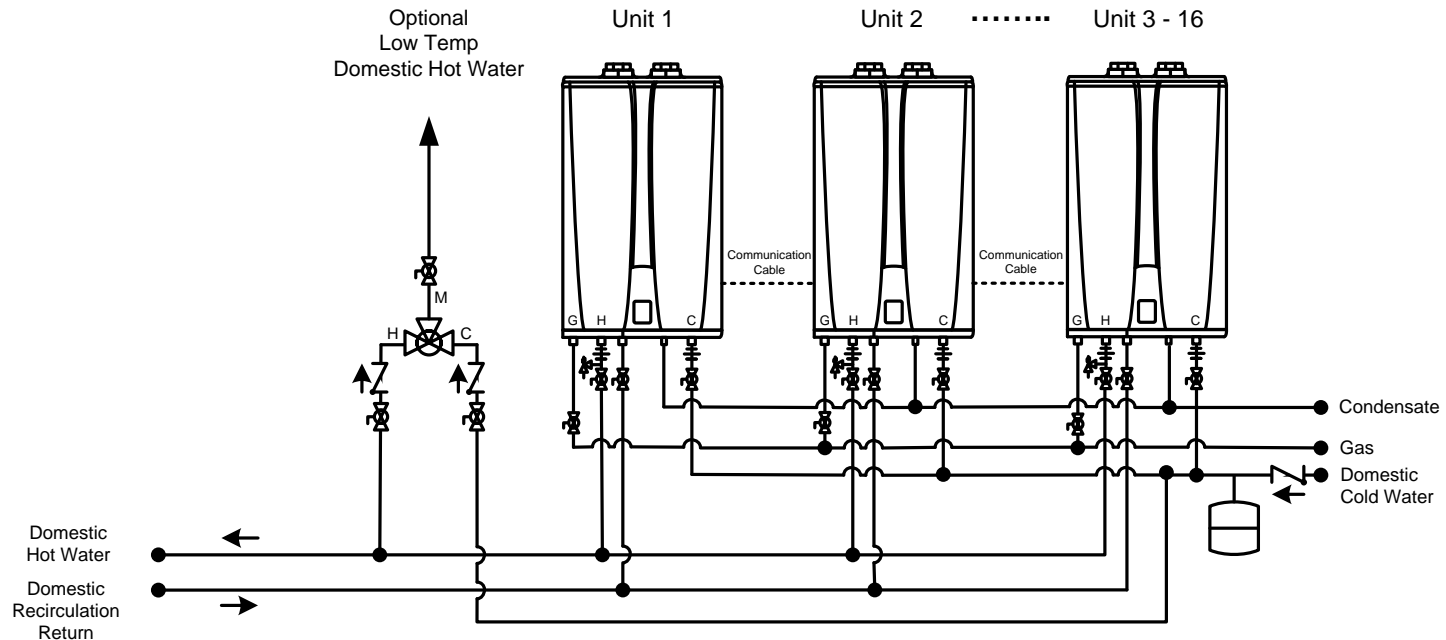
Drawn By: B. Fenske

NPE-A-1-E-MV-BF02

August 1, 2013



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Recommended Pipe Size/Heater Count	1 Unit - 3/4"	2 Units - 1"	3 Units - 1-1/4"	4 to 5 Units - 1-1/2"	6 to 8 Units - 2"	9 to 14 Units - 2-1/2"	15 to 16 Units - 3"
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**KD Navien**

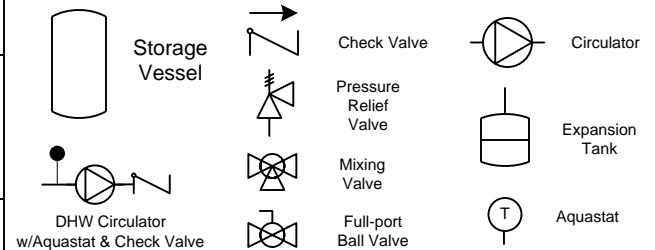
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NPE-A Series Tankless Water Heater  
Three Plus NPE-A Tankless Domestic External Recirculation Mode With Thermostatic Mixing Valve for Low Temp Fixtures

Drawn By: B. Fenske

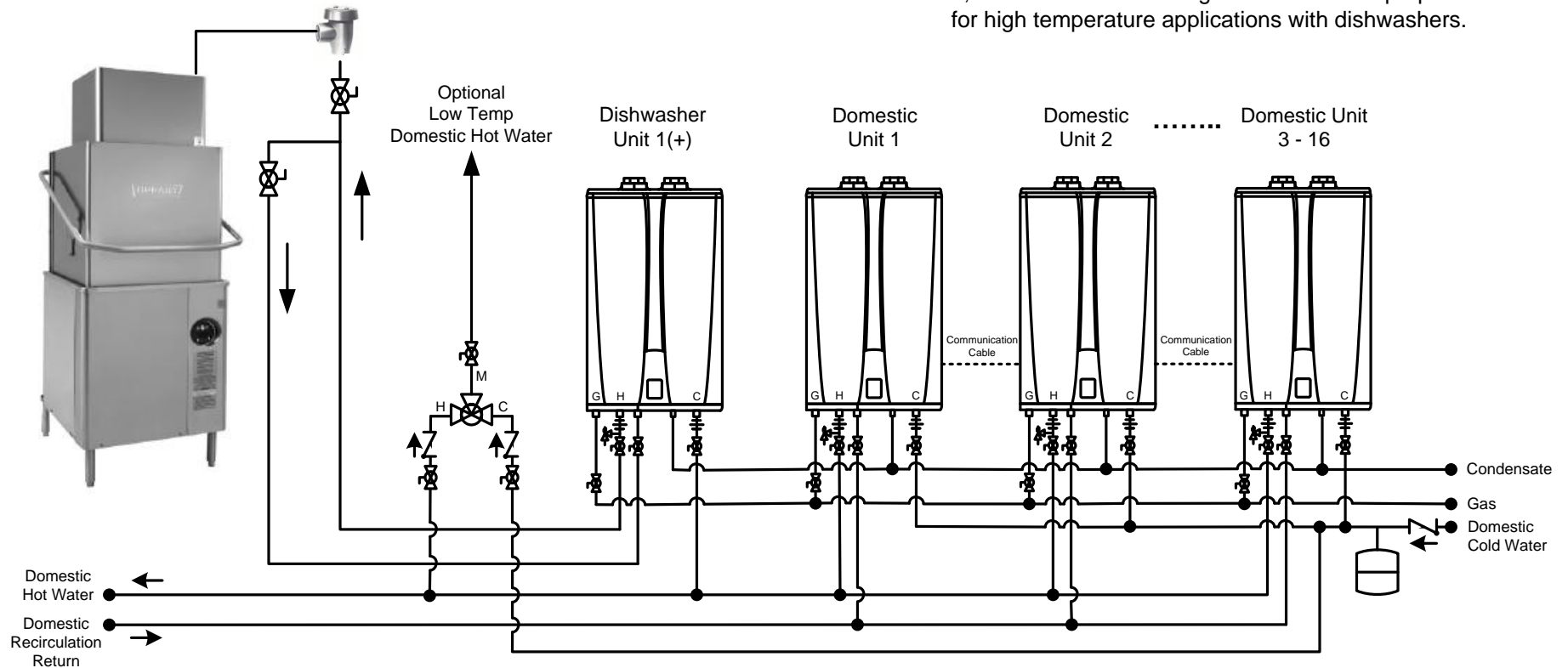
NPE-A-3P-E-MV-BF02

August 1, 2013



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1. Domestic restaurant tankless units typically set at 140°F.
2. High-temperature dishwasher tankless unit(s) typically set at 180°F+ for sanitation.
3. Select count of tankless units serving dishwasher to meet flow rate requirements @ 40-45°F rise.
4. Dishwasher tankless unit(s) may not be cascaded or common vented with domestic supply tankless units.
5. Follow tankless venting instructions with proper materials for high temperature applications with dishwashers.



Recommended Pipe Size/Heater Count

1 Unit - 3/4"

2 Units - 1"

3 Units - 1-1/4"

4 to 5 Units - 1-1/2"

6 to 8 Units - 2"

9 to 14 Units - 2-1/2"

15 to 16 Units - 3"



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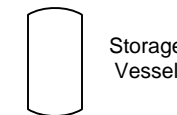
NPE-A Series Tankless Water Heater

Three Plus NPE-A Tankless Domestic External Recirculation Mode with NPE Tankless as High-Temperature Booster Heater for Dishwasher

Drawn By: B. Fenske

NPE-A-6P-E-DW-BF02

August 1, 2013



Storage Vessel



Check Valve



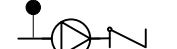
Pressure Relief Valve



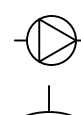
Mixing Valve



Full-port Ball Valve



DHW Circulator w/Aquastat & Check Valve



Circulator

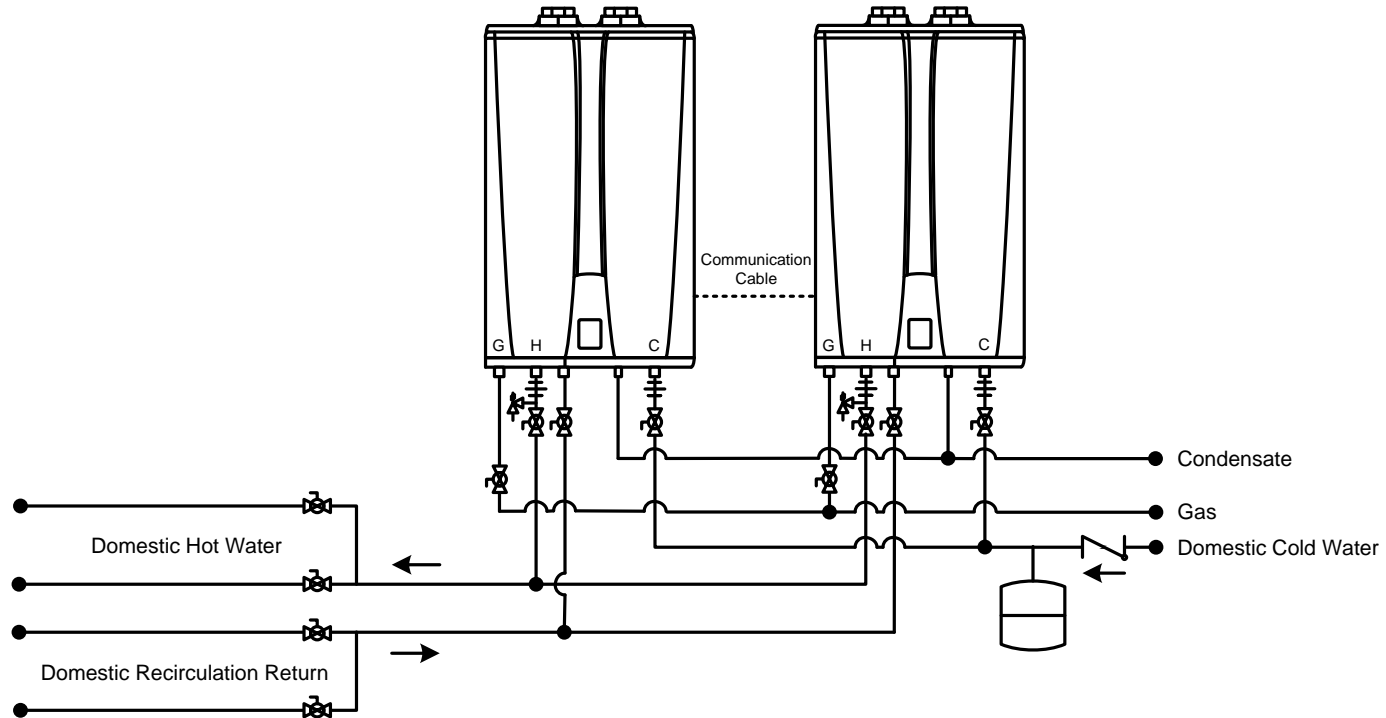


Expansion Tank



Aquastat

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Recommended Pipe Size/Heater Count

1 Unit - 3/4"

2 Units - 1"

3 Units - 1-1/4"

4 to 5 Units - 1-1/2"

6 to 8 Units - 2"

9 to 14 Units - 2-1/2"

15 to 16 Units - 3"

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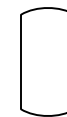
NPE-A Series Tankless Water Heater

Two NPE-A Tankless  
External Recirculation Mode  
Two Domestic Circuits

Drawn By: B. Fenske

NPE-A-2-E2-BF02

August 1, 2013



Storage Vessel



Check Valve



Circulator



Pressure Relief Valve



Expansion Tank



Mixing Valve



Aquastat

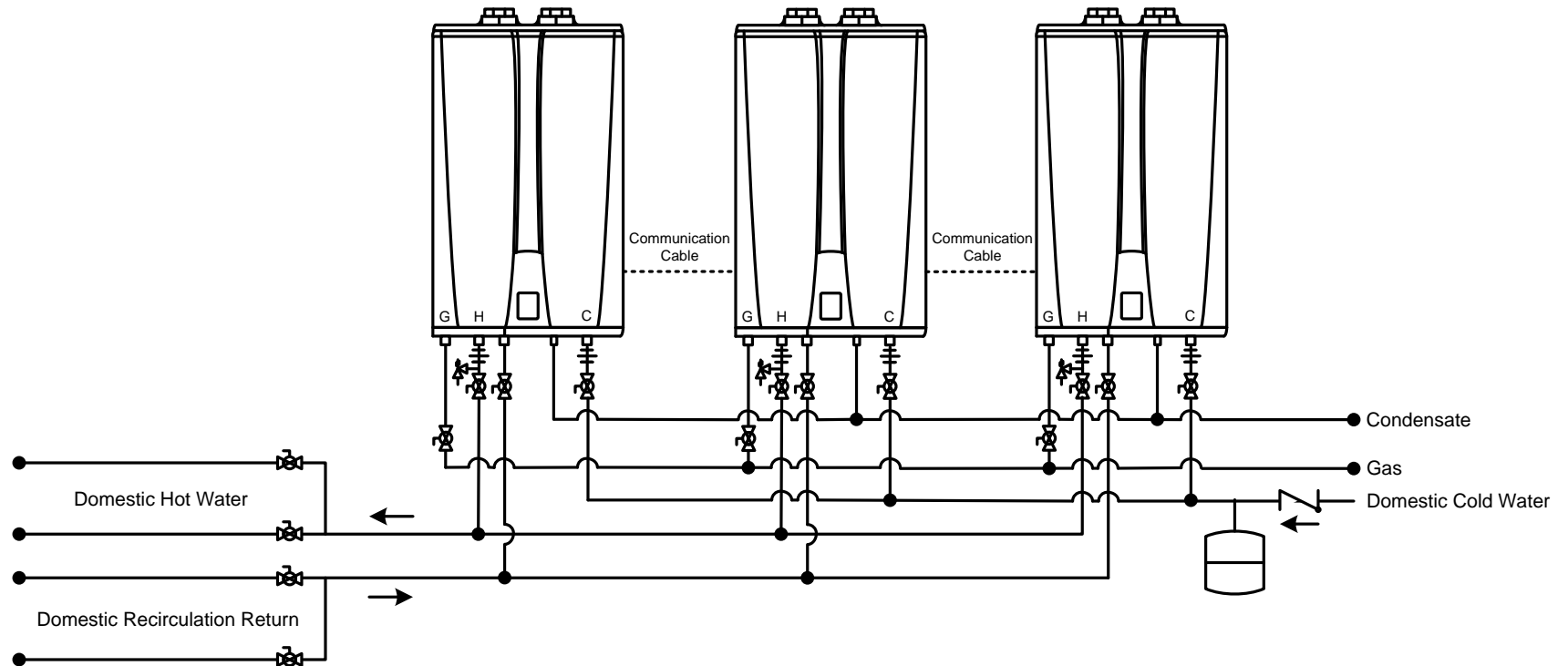


DHW Circulator  
w/Aquastat & Check Valve



Full-port Ball Valve

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Recommended Pipe Size/Heater Count	1 Unit - 3/4"	2 Units - 1"	3 Units - 1-1/4"	4 to 5 Units - 1-1/2"	6 to 8 Units - 2"	9 to 14 Units - 2-1/2"	15 to 16 Units - 3"
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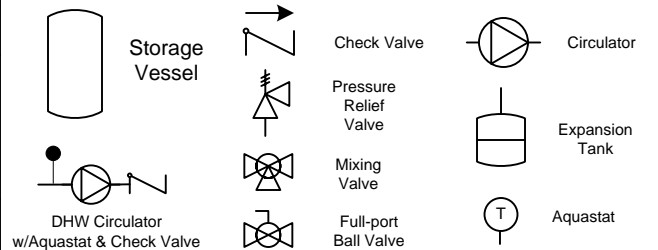
**NPE-A Series Tankless Water Heater**

Three NPE-A Tankless  
External Recirculation Mode  
Two Domestic Circuits

Drawn By: B. Fenske

NPE-A-3-E2-BF02

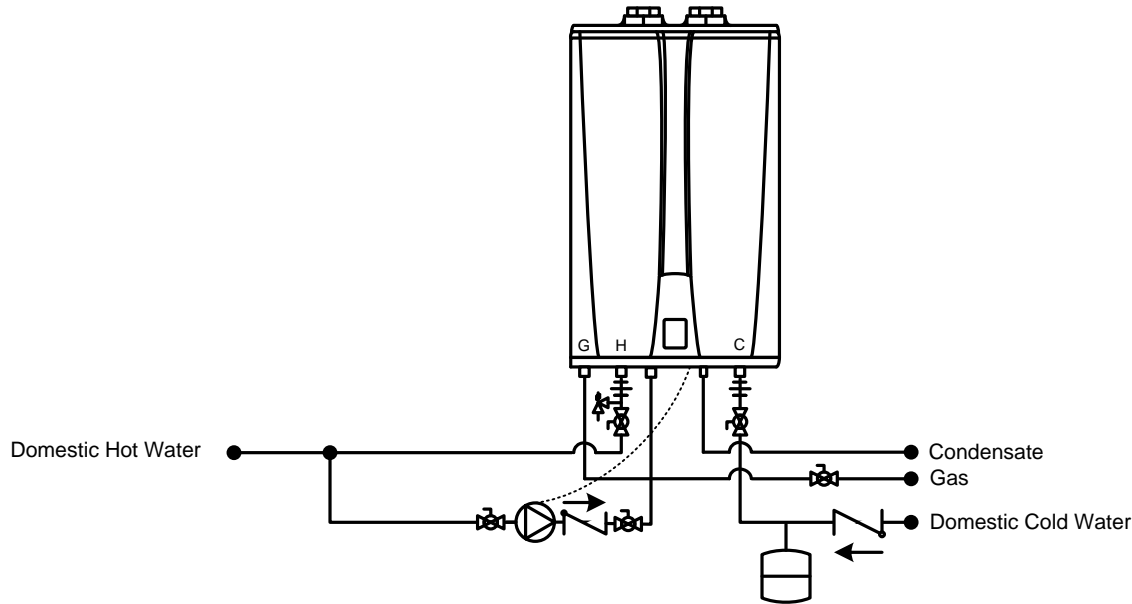
August 1, 2013



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**Notes:**

1. Use Navien Cord P #30011612A
  2. Set DIP Switches on Integrated Controller  
#1 – OFF, #2 – ON, #3 – ON
  3. Select External Circulator Performance  
to be 2 GPM Minimum, 4 GPM Maximum based  
on 5 Psi drop @ 4 GPM at tankless
- \* Refer to NPE Installation Manual for further details



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800-519-8794  
www.Navien.com

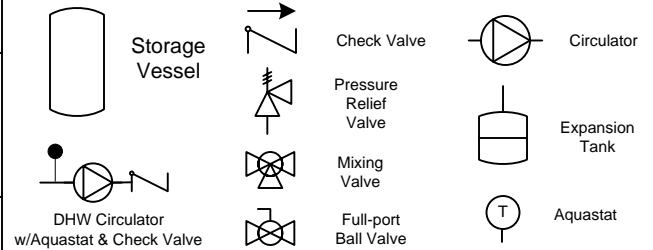
**NPE-A Series Tankless Water Heater**

One NPE-A Tankless  
Using External Pump for Booster Recirculation  
with Part #30011612A External Pump Wire

Drawn By: B. Fenske

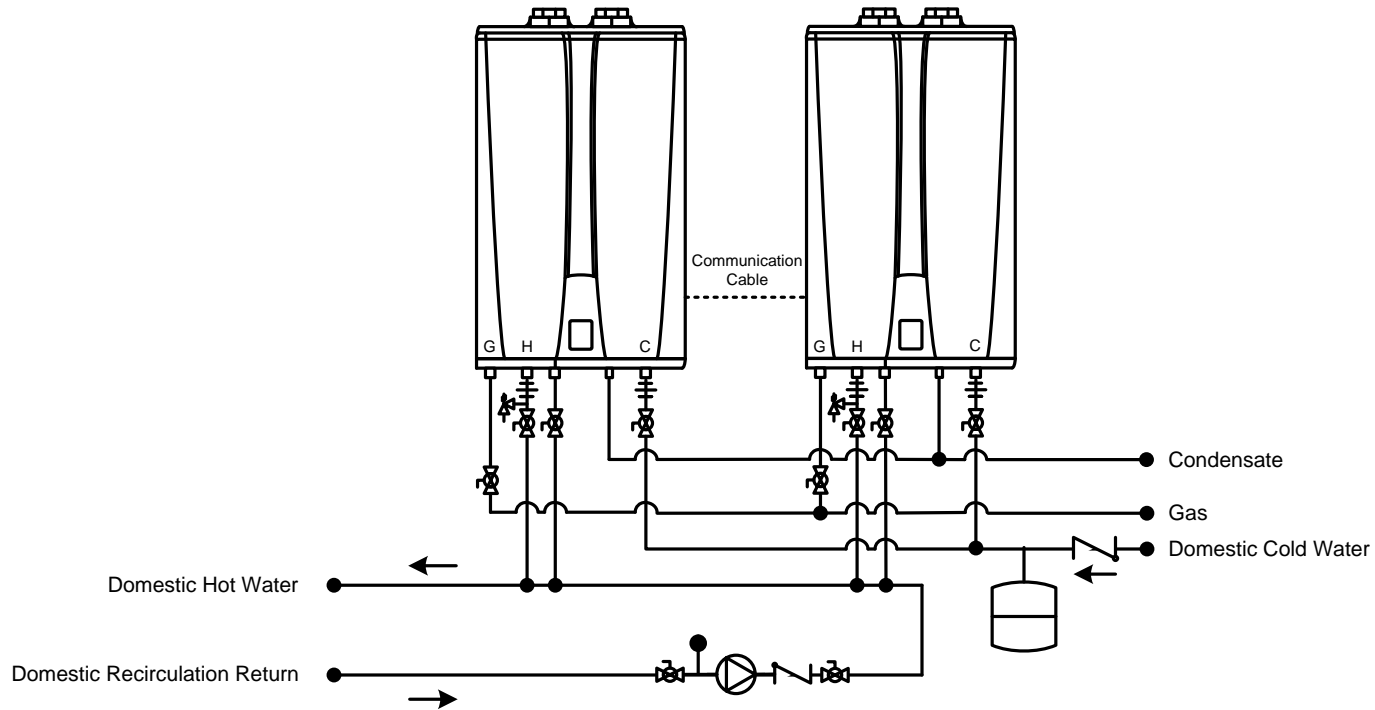
NPE-A-1-PW-EC-BF02

August 1, 2013





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Recommended Pipe Size/Heater Count

1 Unit - 3/4"

2 Units - 1"

3 Units - 1-1/4"

4 to 5 Units - 1-1/2"

6 to 8 Units - 2"

9 to 14 Units - 2-1/2"

15 to 16 Units - 3"

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800-519-8794  
www.Navien.com

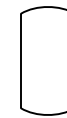
NPE-A Series Tankless Water Heater

Two NPE-A Tankless  
External Recirculation Mode  
With External Circulator

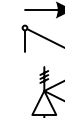
Drawn By: B. Fenske

NPE-A-2-EC-BF02

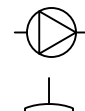
August 1, 2013



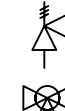
Storage Vessel



Check Valve



Circulator



Pressure Relief Valve



Expansion Tank



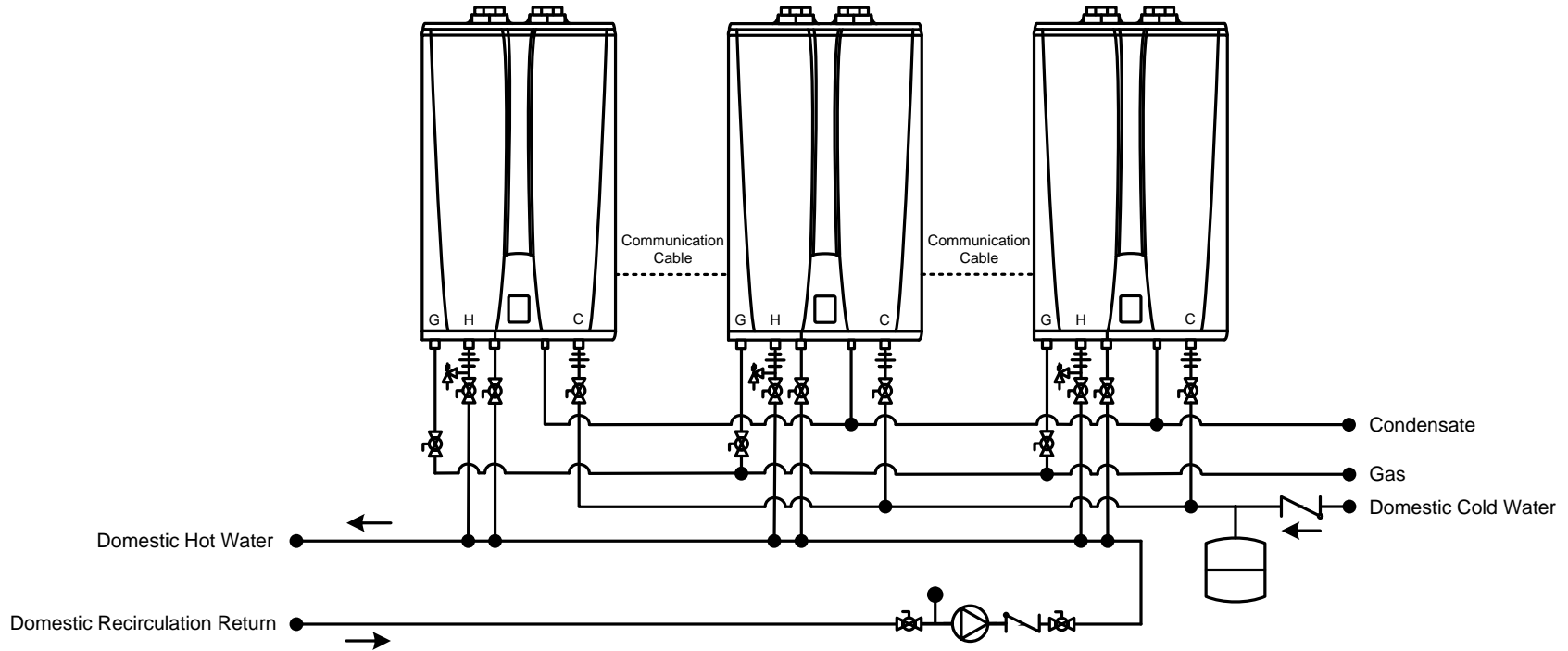
Mixing Valve



Aquastat

DHW Circulator  
w/Aquastat & Check Valve

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Recommended Pipe Size/Heater Count

1 Unit - 3/4"

2 Units - 1"

3 Units - 1-1/4"

4 to 5 Units - 1-1/2"

6 to 8 Units - 2"

9 to 14 Units - 2-1/2"

15 to 16 Units - 3"



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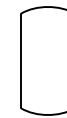
NPE-A Series Tankless Water Heater

Three NPE-A Tankless  
External Recirculation Mode  
With External Circulator

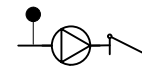
Drawn By: B. Fenske

NPE-A-3-EC-BF02

August 1, 2013



Storage Vessel



DHW Circulator  
w/Aquastat & Check Valve



Check Valve



Pressure Relief Valve



Mixing Valve



Full-port Ball Valve



Circulator

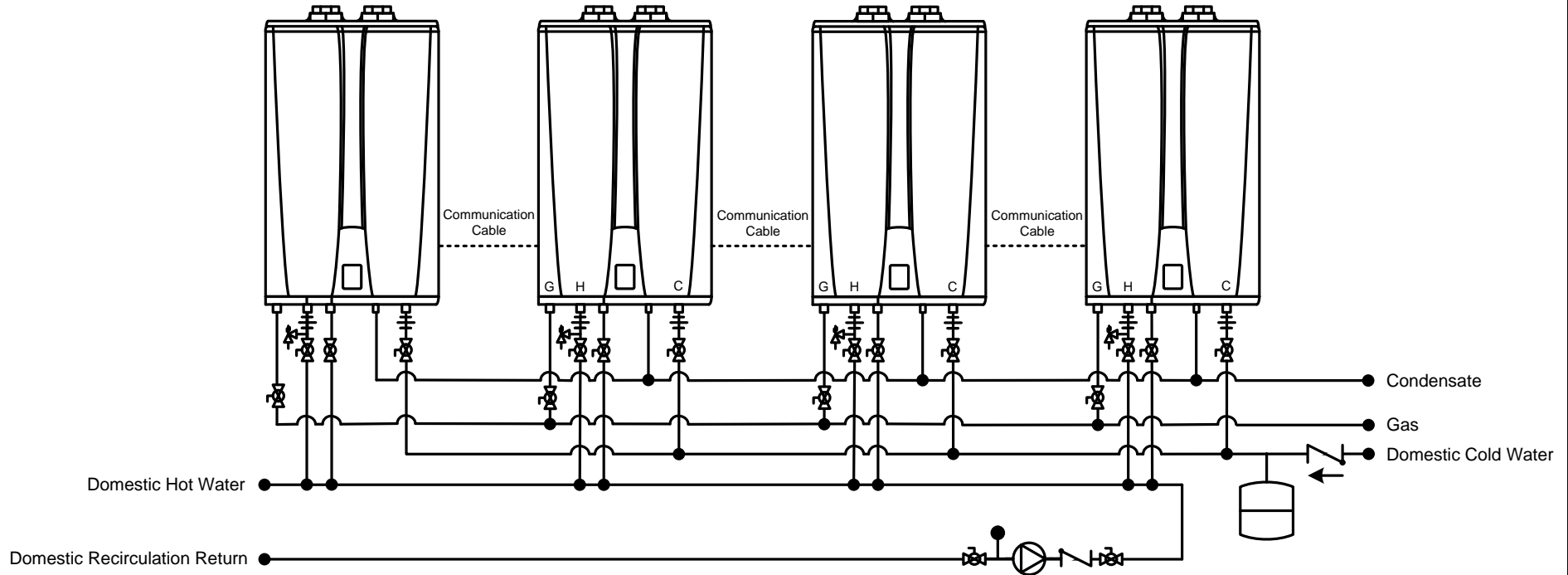


Expansion Tank



Aquastat

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Recommended Pipe Size/Heater Count

1 Unit - 3/4"

2 Units - 1"

3 Units - 1-1/4"

4 to 5 Units - 1-1/2"

6 to 8 Units - 2"

9 to 14 Units - 2-1/2"

15 to 16 Units - 3"

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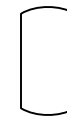
NPE-A Series Tankless Water Heater

Four NPE-A Tankless  
External Recirculation Mode  
With External Circulator

Drawn By: B. Fenske

NPE-A-4-EC-BF02

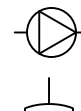
August 1, 2013



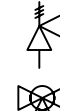
Storage Vessel



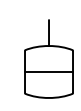
Check Valve



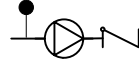
Circulator



Pressure Relief Valve



Expansion Tank



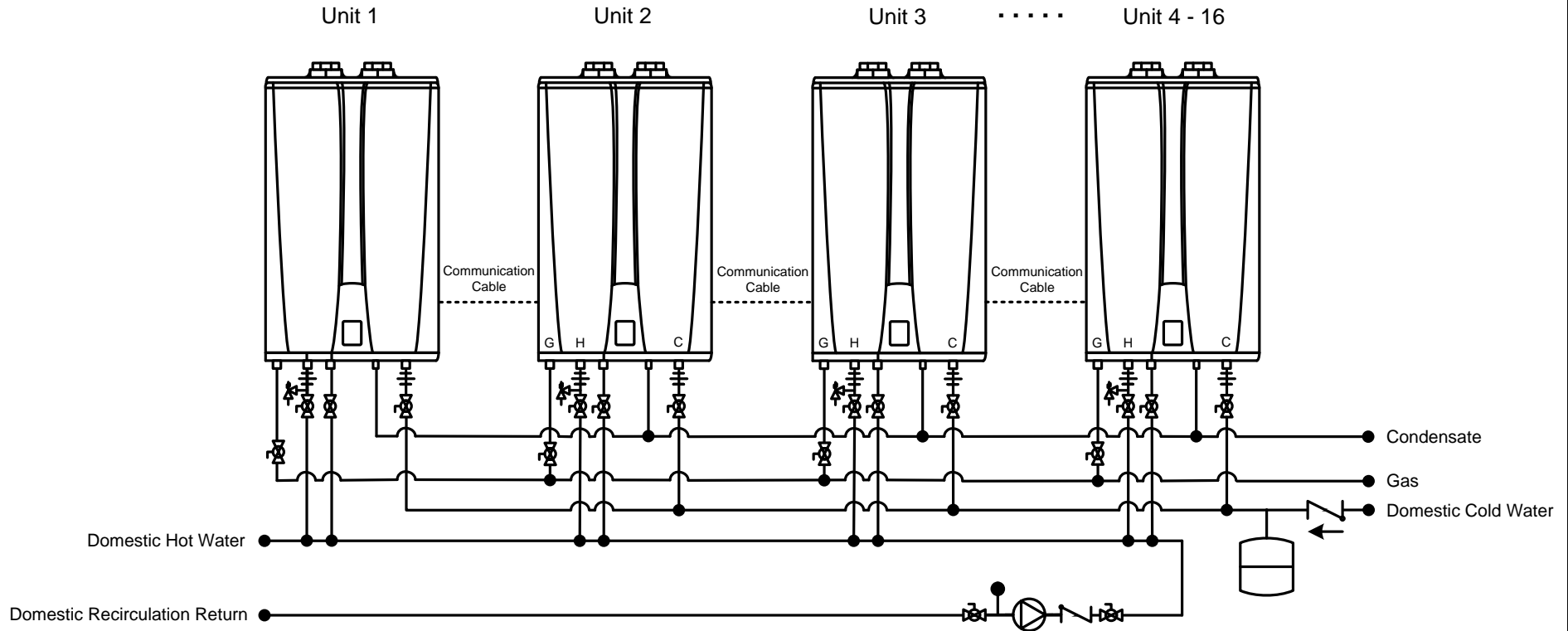
Mixing Valve



Aquastat

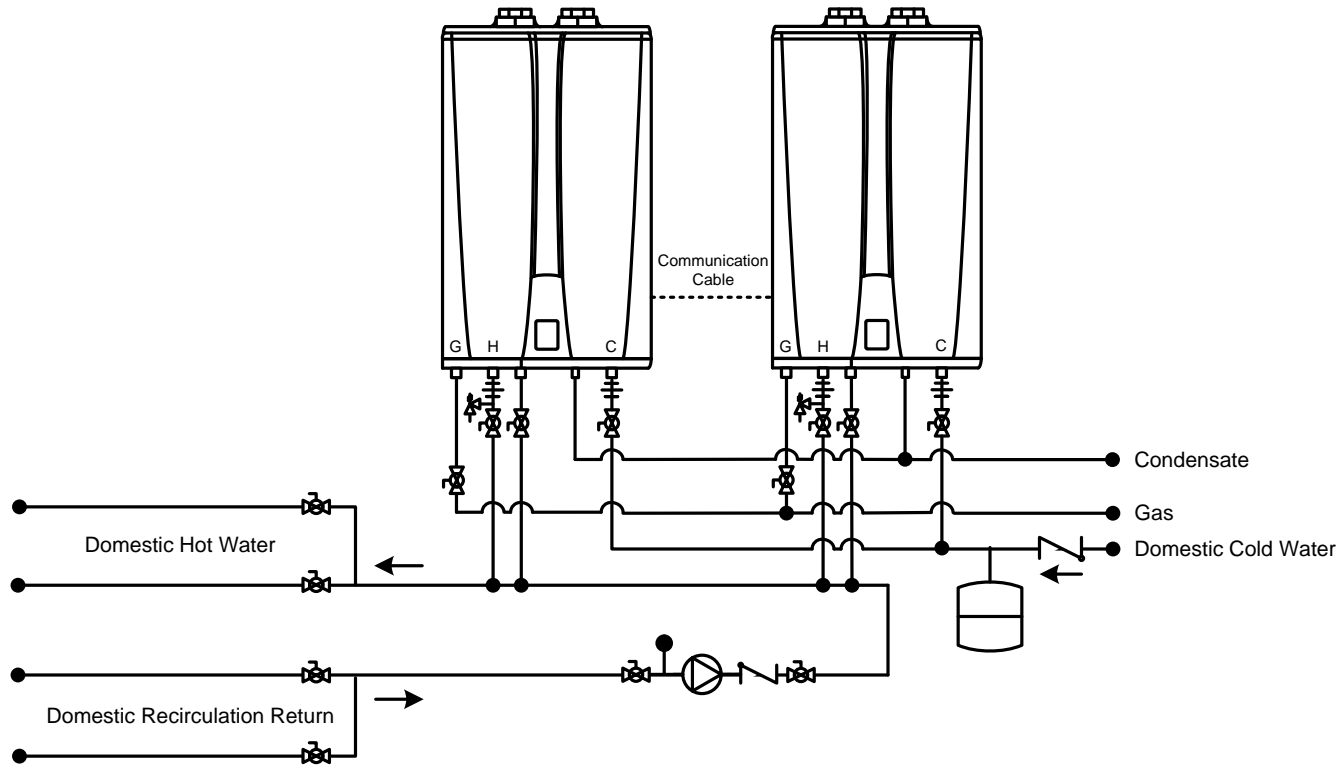
DHW Circulator  
w/Aquastat & Check Valve

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Recommended Pipe Size/Heater Count	1 Unit - 3/4"	2 Units - 1"	3 Units - 1-1/4"	4 to 5 Units - 1-1/2"	6 to 8 Units - 2"	9 to 14 Units - 2-1/2"	15 to 16 Units - 3"
 20 Goodyear Irvine, CA 92618 800-519-8794 www.Navien.com	<b>NPE-A Series Tankless Water Heater</b>  <b>Four Plus NPE-A Tankless External Recirculation Mode With External Circulator</b>				Storage Vessel DHW Circulator w/Aquastat & Check Valve		
	Drawn By: B. Fenske NPE-A-4Plus-EC-BF02 August 1, 2013	Check Valve Pressure Relief Valve Mixing Valve Full-port Ball Valve			Circulator Expansion Tank Aquastat		

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Recommended Pipe Size/Heater Count

1 Unit - 3/4"

2 Units - 1"

3 Units - 1-1/4"

4 to 5 Units - 1-1/2"

6 to 8 Units - 2"

9 to 14 Units - 2-1/2"

15 to 16 Units - 3"

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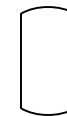
NPE-A Series Tankless Water Heater

Two NPE-A Tankless  
External Recirculation Mode  
With External Circulator – 2 Returns

Drawn By: B. Fenske

NPE-A-2-EC2-BF02

August 1, 2013



Storage Vessel



Check Valve



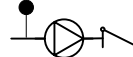
Circulator



Pressure Relief Valve



Expansion Tank



DHW Circulator  
w/Aquastat & Check Valve



Mixing Valve

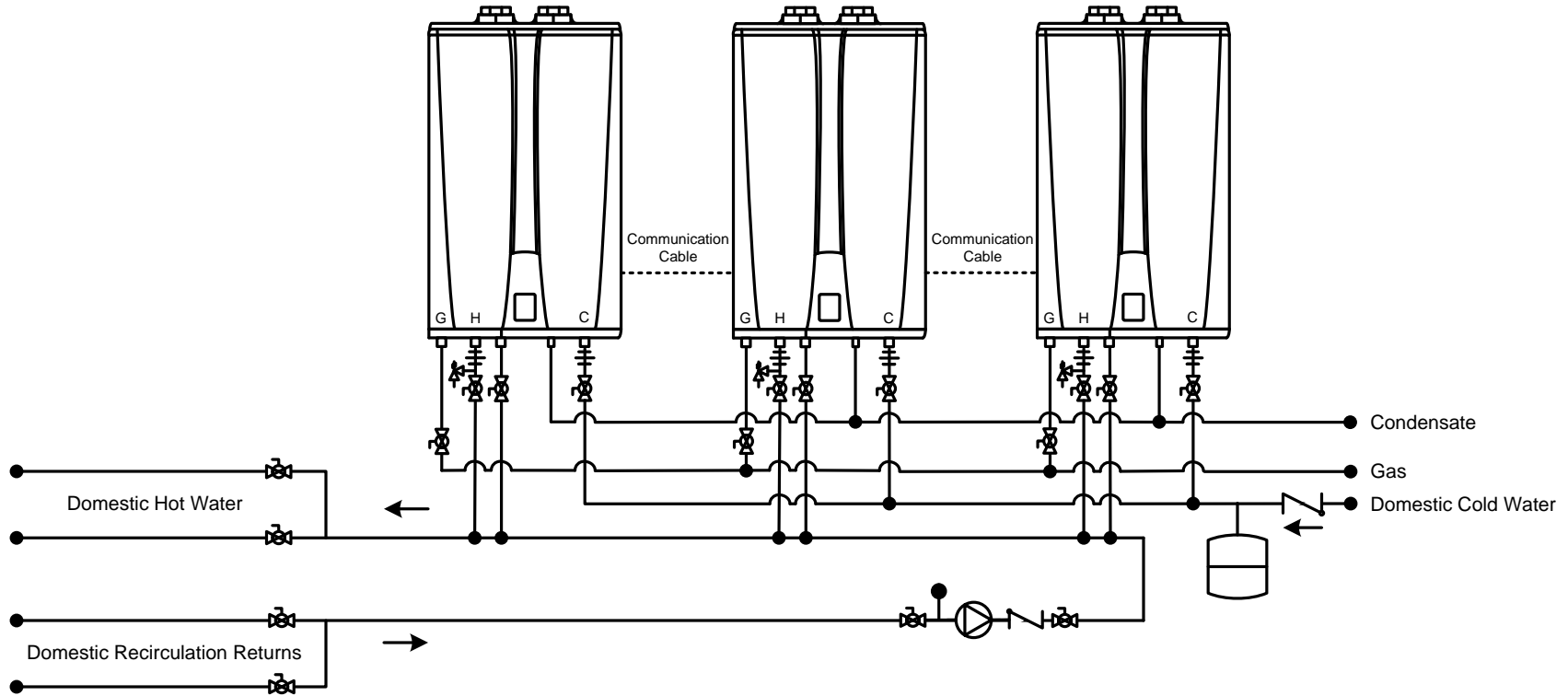


Aquastat



Full-port Ball Valve

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Recommended Pipe Size/Heater Count

1 Unit - 3/4"

2 Units - 1"

3 Units - 1-1/4"

4 to 5 Units - 1-1/2"

6 to 8 Units - 2"

9 to 14 Units - 2-1/2"

15 to 16 Units - 3"



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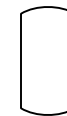
NPE-A Series Tankless Water Heater

Three NPE-A Tankless  
External Recirculation Mode  
With External Circulator – 2 Returns

Drawn By: B. Fenske

NPE-A-3-EC2-BF02

August 1, 2013



Storage Vessel



DHW Circulator  
w/Aquastat & Check Valve



Check Valve



Pressure Relief Valve



Mixing Valve



Full-port Ball Valve



Circulator



Expansion Tank

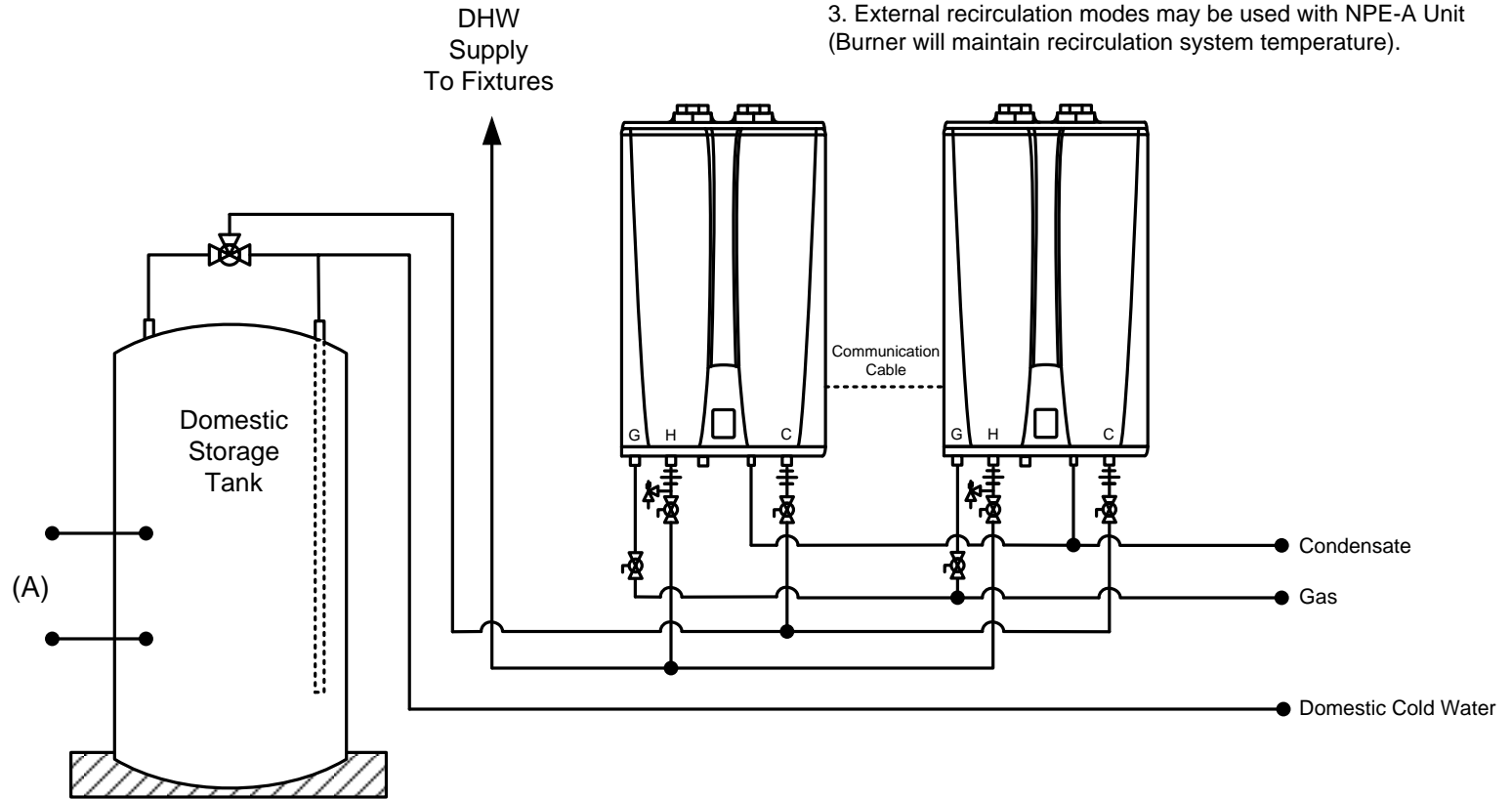


Aquastat

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**Notes:**

1. For Storage Tank/Geothermal Operation; DIP Switch #6 of 10 located on Integrated Display Panel should be set ON (UP).
2. With Storage Tank/Geothermal Operation Enabled, NPE Tankless DHW setting may be set at or near storage tank thermostatic mixing valve temperature output.
3. External recirculation modes may be used with NPE-A Unit (Burner will maintain recirculation system temperature).



(A) Follow GeoThermal Unit and Tank Manufacturer Recommendations and Requirements

Recommended Pipe Size/Heater Count	1 Unit - 3/4"	2 Units - 1"	3 Units - 1-1/4"	4 to 5 Units - 1-1/2"	6 to 8 Units - 2"	9 to 14 Units - 2-1/2"	15 to 16 Units - 3"
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**NPE-A/S Series Tankless Water Heater**

**Three NPE-A/S Tankless  
With Geo-Thermal Storage Feed**

Drawn By: B. Fenske

NPE-A-3G-BF02

August 1, 2013



Storage Vessel



DHW Circulator  
w/Aquastat & Check Valve



Check Valve



Pressure  
Relief  
Valve



Mixing  
Valve



Full-port  
Ball Valve



Circulator



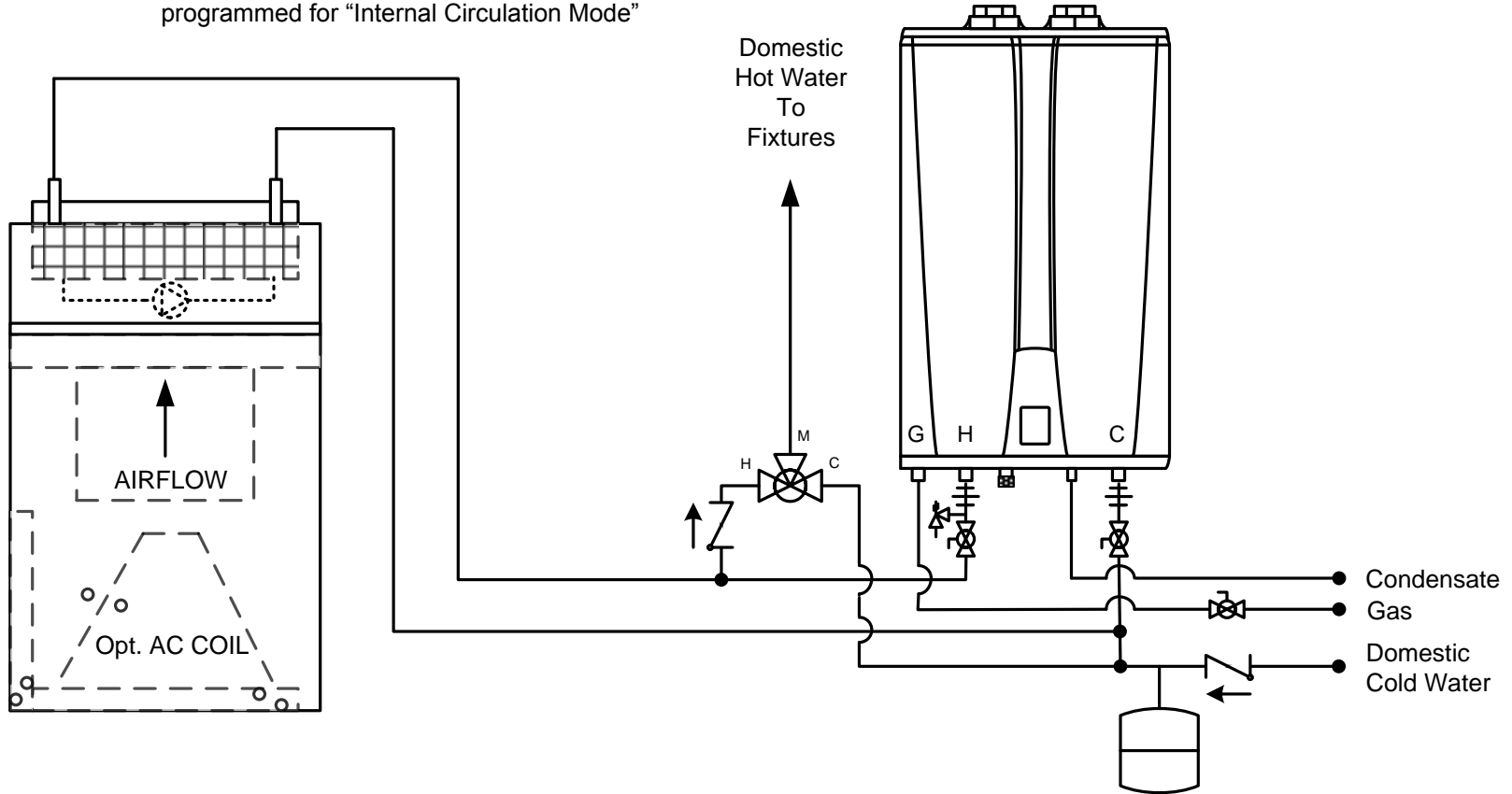
Expansion  
Tank



Aquastat

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Using Existing Air Handler Internal Circulator  
 Navien NPE Internal Circulator must be programmed for "Internal Circulation Mode"



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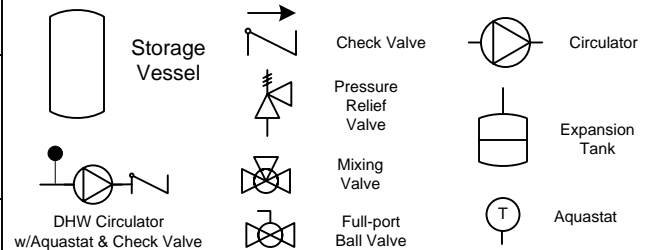
NPE-A Series Tankless Water Heater

Navien NPE-A Series Tankless  
 Combi Use Application with Air Handler  
 "Apollo/Hydroheat Tank Replacement"

Drawn By: B. Fenske

NPE-A-Combi-AH-BF02

August 1, 2013

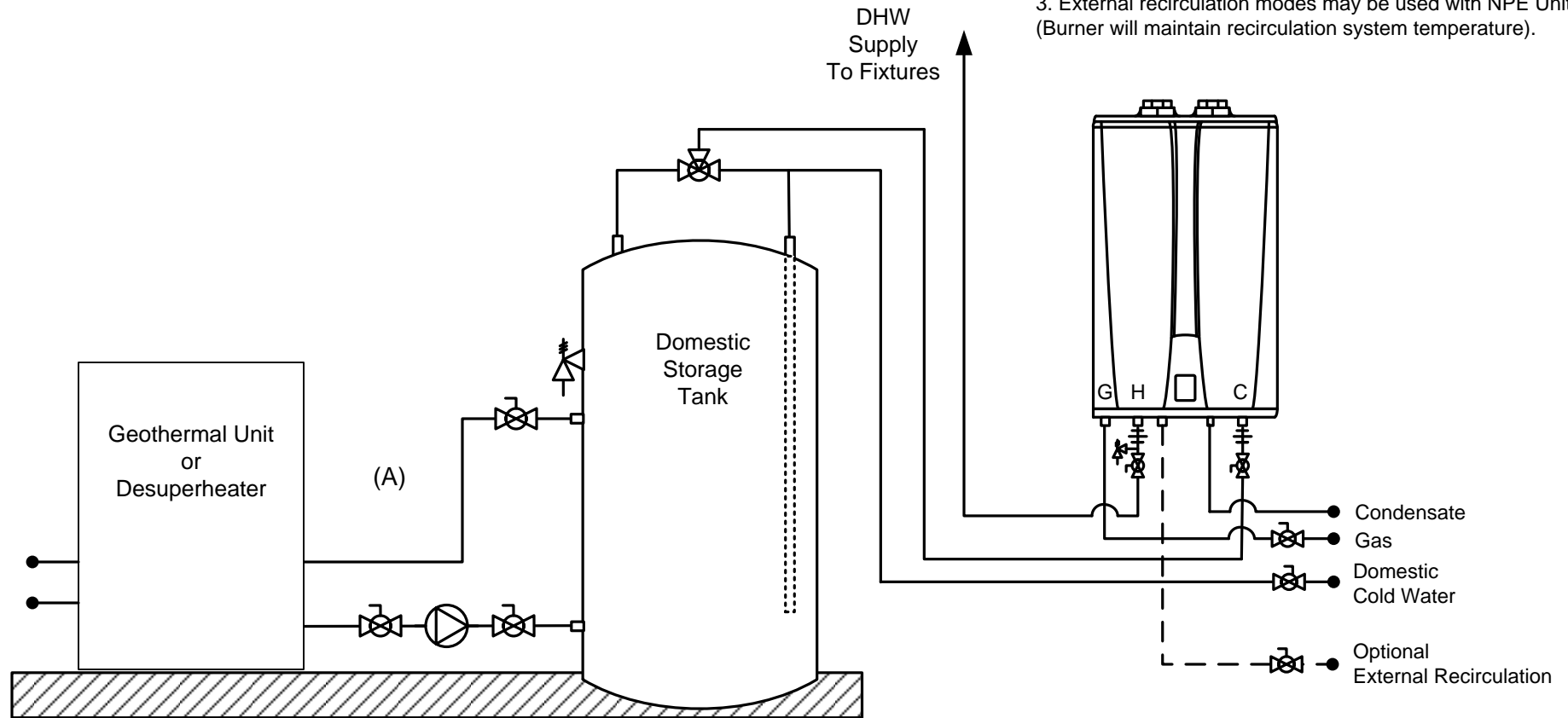




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**Notes:**

1. For Storage Tank/Geothermal Operation; DIP Switch #6 of 10 located on Integrated Display Panel should be set ON (UP).
2. With Storage Tank/Geothermal Operation Enabled, NPE Tankless DHW setting may be set at or near storage tank thermostatic mixing valve temperature output.
3. External recirculation modes may be used with NPE Unit (Burner will maintain recirculation system temperature).



(A) Follow GeoThermal Unit and Tank Manufacturer Recommendations and Requirements



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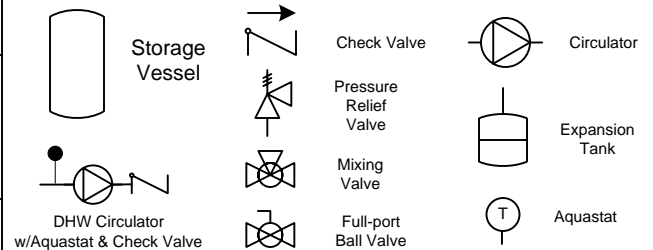
NPE-A Series Tankless Water Heater

NPE-A Domestic Hot Water Standard  
Installation with Geothermal or  
Desuperheater

Drawn By: B. Fenske

NPE-A-G-BF02

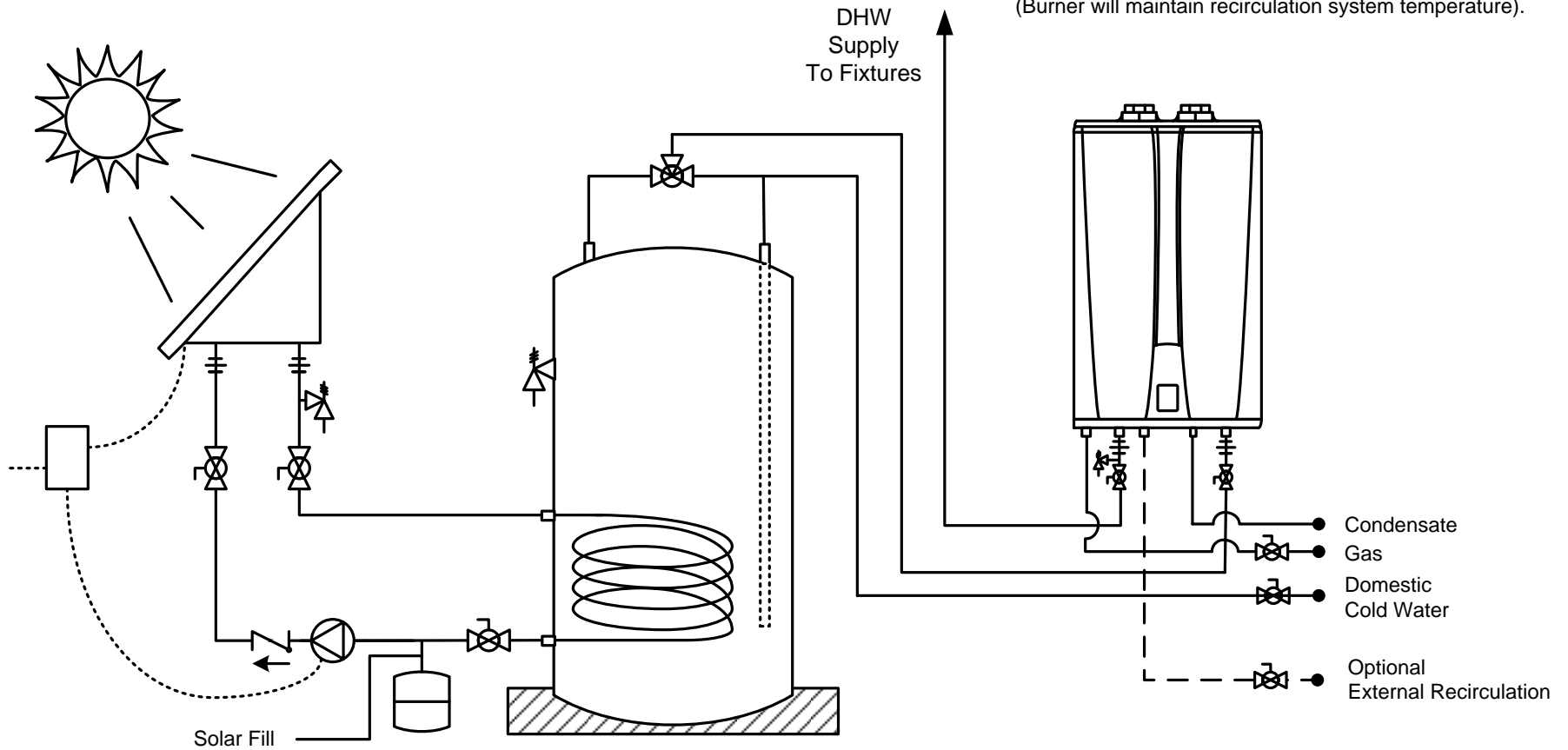
August 1, 2013



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**Notes:**

1. For Storage Tank/Solar Operation; DIP Switch #6 of 10 located on Integrated Display Panel should be set ON (UP).
2. With Storage Tank/Solar Operation Enabled, NPE Tankless DHW setting may be set at or near storage tank thermostatic mixing valve temperature output.
3. External recirculation modes may be used with NPE Unit (Burner will maintain recirculation system temperature).



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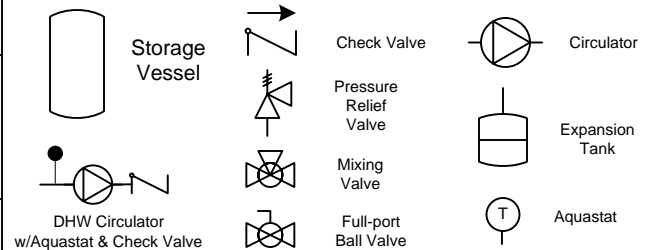
NPE-A Series Tankless Water Heater

NPE-A Domestic Hot Water Standard  
Installation with Solar Application

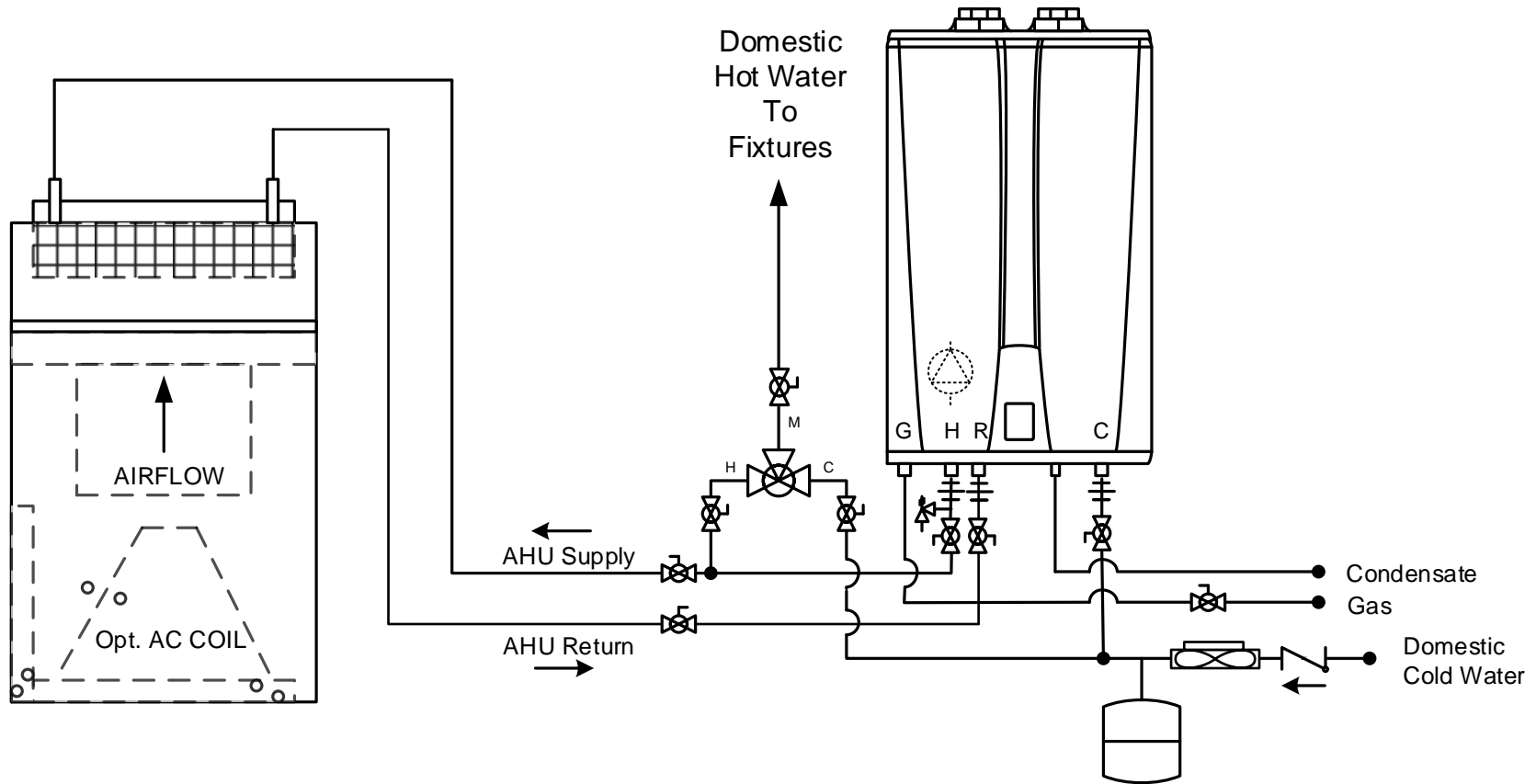
Drawn By: B. Fenske

NPE-A-S-BF02

August 1, 2013



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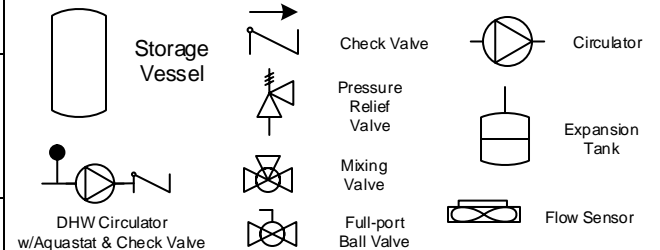
NPE-A Series Tankless Water Heater

Navien NPE-A Series Tankless  
ComfortAir+ Application  
with Air Handler

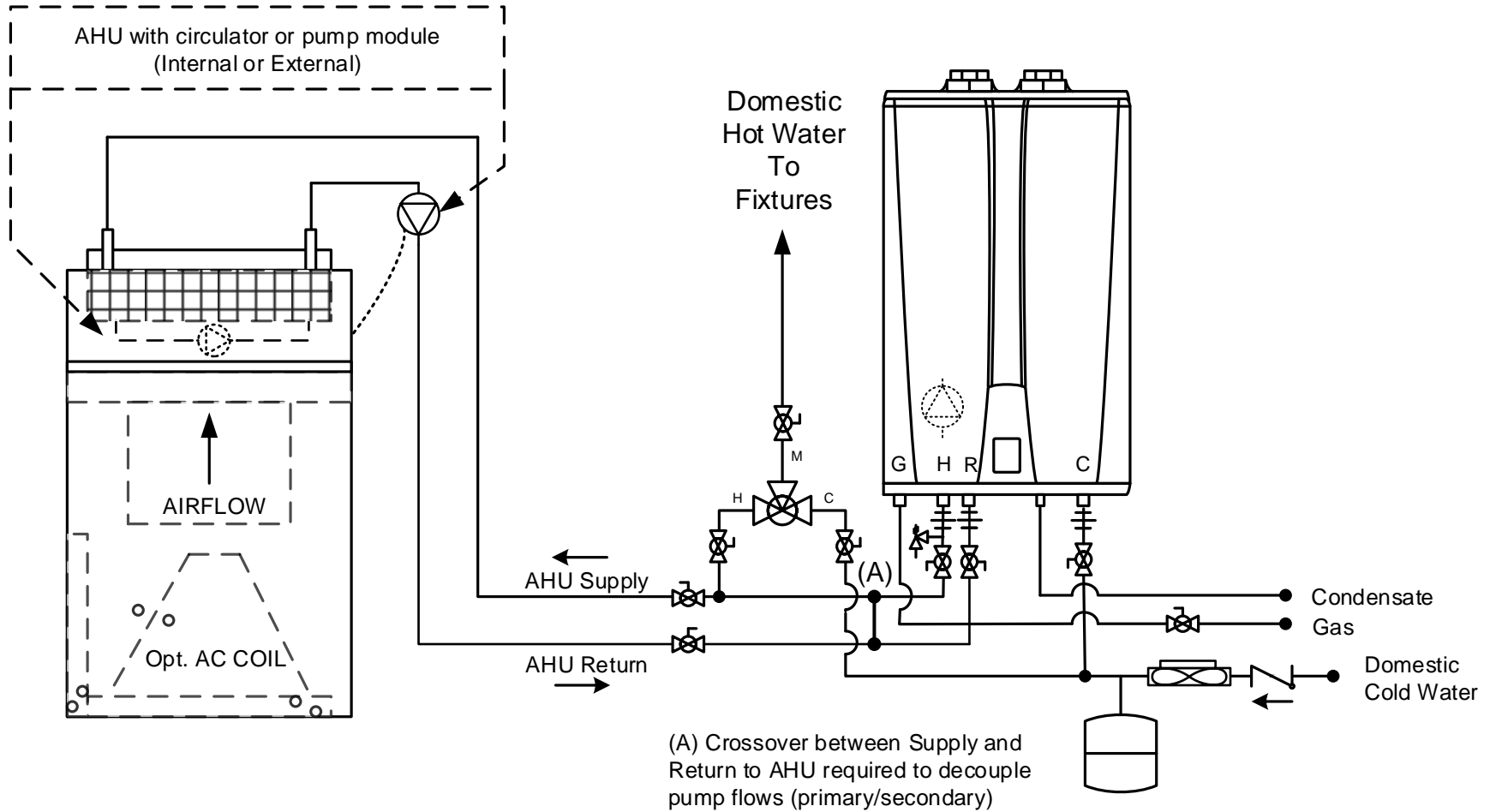
Drawn By: B.F.

NPE-A-ComfortAir+-BF01

April 1, 2015



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NPE-A Series Tankless Water Heater

Navien NPE-A Series Tankless  
ComfortAir+ Application  
with Air Handler Pump Module

Drawn By: B.F.

NPE-A-ComfortAir+-P-BF01

April 1, 2015

