

**APPROXIMATE DIMENSIONS**

A = 3'-11" B = 3'-9"

\*Image not to scale\*



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer. For more information, go to [www.P65Warnings.Ca.gov](http://www.P65Warnings.Ca.gov)

NOTE: Flow rates will vary depending on existing field conditions. Leonard Valve Company always recommends using CASPAK® sizing software for proper valve sizing and model number applications.

**Product is non-cancellable and non-returnable from date from order with factory. Signed submittal required with purchase order.**

<b>Engineer's Approval</b>	Job # _____
	Arch/Eng. _____
	Contractor _____

Note: The models shown represent Leonard Products which are believed to be equivalent in type and function to items specified. Leonard Valve Company is not responsible for errors or omissions due to differences in interpretations of information provided.

- Digital Mixing Valve with 2" inlet ball and check valves, 2" Outlet with ball valve and integral RTD Sensor
- Additional Integral RTD Sensors for three critical measurement points: Inlet Hot Water, Inlet Cold Water, and Return Water temperature
- Additional Integral Pressure Sensors for two critical measurement points: Inlet Hot Water and Inlet Cold Water
- 2" inlets, 2" outlet (50.8mm X 50.8mm) 1-1/4" return (31.8mm)
- 0.25 GPM\*\* (0.95 L/min) minimum flow capacity
- Maximum operating pressure: 125 PSIG (860KPA)
- Controls water temperature to ± 2°F in accordance with ASSE 1017
- Controls water temperature to ± 2°F at the NV-200-LF during times of low/no system demand
- Automatic Hot/ Cold Water shutoff upon cold/ hot water inlet supply failure
- Automatic Hot/Cold Water shutoff upon cold/ hot water inlet supply failure
- Self-Balancing - No need to manually adjust or balance recirculation
- Self-Cleaning - Daily shuttle sweep keeps shuttle free of debris
- Alerts user when unit requires maintenance
- Displays outlet temperature
- User programmable for on-site configuration, high-temperature sanitation mode, and high/ low temperature alarm
- User adjustable settings at the controller or remotely through a Building Automation System/ Building Management System
- Six standard BMS languages, BACnet IP, BACnet MS/TP, Modbus TCP/IP, Modbus RTU, Metasys N2 and Ethernet/IP
- Cloud based data logging and monitoring capabilities
- User programmable set point range between 65°F and 180°F
- Displays outlet temperature, inlet hot water, inlet cold water, return water temperature, inlet pressures, and Options to display 4 additional temperatures, 1 flow channel input and 1 configurable flow or pressure input
- UL Listed 120V plug in power supply with 6' cord
  - Option for Backup Uninterruptable Power Supply in the event of primary power loss w/ approx. two hours run time
- Factory assembled and tested

\*\*NOTE: The valve will maintain temperature with 0.25 GPM flow from the domestic hot water loop when properly installed near the hot water source with a continuously operating recirculation pump.  
\*Factory supplied circulator standard with Taco 0034E PLUS.

See Page 2 for Specification Detail, Page 4 for Piping Method Detail & Flow Capacity Chart, Page 5 for Options

**Valve assembly is compliant with Low-Lead requirements of wetted surface area containing less than 0.25% lead by weight. All other fittings and components, the sum total of which comprise the wetted surface of this product contains less than one quarter of one percent of lead by weight.**

Valve assembly is ASSE 1017 Certified



Valve assembly is cUPC Certified



Valve electronics are UL Certified



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# LEONARD MEGATRON® MODEL NV-200-LF

Complete Digital Water Temperature Control Station to include:

- 2” inlet connections (copper tube)
- 2” outlet connection (copper tube)
- Leonard Nucleus® Digitally Controlled Mixing Valve with simple two line LED display and plumbing dashboard diagram status indicator LED’s
- Leonard Factory check valves and full port ball valves on inlet piping
- Outlet Test Connection with ball valve and 3/4” connection
- Full port ball valve mounted downstream of test connection on mixed water outlet of the system
- Subassembly with 1-1/4” return piping, Taco 0034E PLUS circulator, full port ball valves and check valves
- Two GFCI\* switches. The circulator GFCI switch will be used to turn the circulator on or off for setup \*Ground Fault Connection Interrupter\*
- System mounted on 2 separate struts, galvanized. Struts shall be assembled with three hole flat angle plate on corners, four hole tee plates or two hole flat plate connectors on all other support pieces using 3/8” grip lock nuts and 3/8”x 1” hex head cap screws, washers and lock washers
- All electrical connections to be completed by Electrical Contractor
- Taco 0034E PLUS standard pump included and installed

High-performance, variable speed, wet-rotor circulator with high-efficiency ECM permanent magnet technology, Simple 3-button control

An intuitive digital user interface lets you choose between a variety of operating modes; activeADAPT™, five Constant Pressure curves, five Proportional Pressure curves, Min/Max fixed speed or speed control through 0-10V DC or PWM external input

Digital LED screen displays; Watts, GPM, Head, RPM and diagnostic error codes  
Maximums of 34 feet of head and 50 GPM



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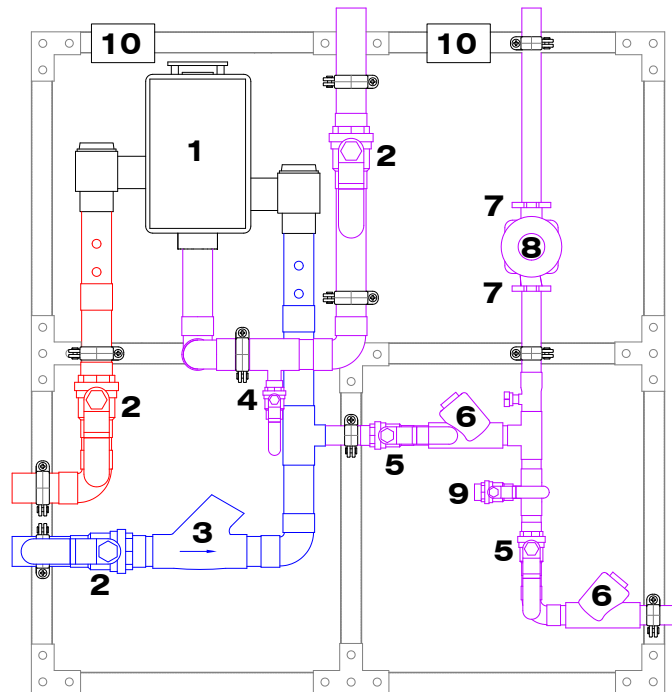
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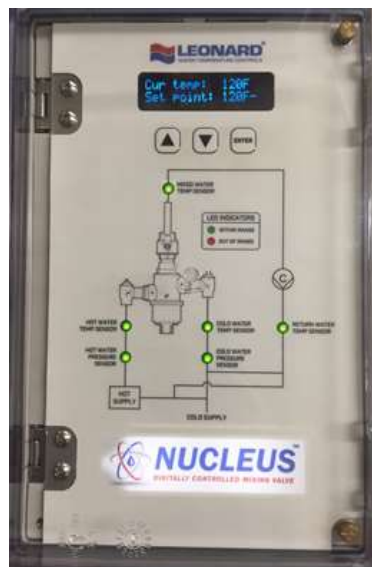
# LEONARD MEGATRON® MODEL NV200-LF DIGITAL TEMPERATURE CONTROL STATION

\*Image not to scale\*



- |                                |                            |
|--------------------------------|----------------------------|
| 1. NUCLEUS VALVE AND CONTROLS  | 6. 1-1/4" CHECK VALVE      |
| 2. 2" FULL PORT BALL VALVE     | 7. PUMP SHUT-OFFS          |
| 3. 2" CHECK VALVE              | 8. CIRCULATOR              |
| 4. 3/4" TEST CONNECTION        | 9. BOILER DRAIN CONNECTION |
| 5. 1-1/4" FULL PORT BALL VALVE | 10. GFCI ELECTRICAL OUTLET |

## NUCLEUS VALVE CONTROL BOX



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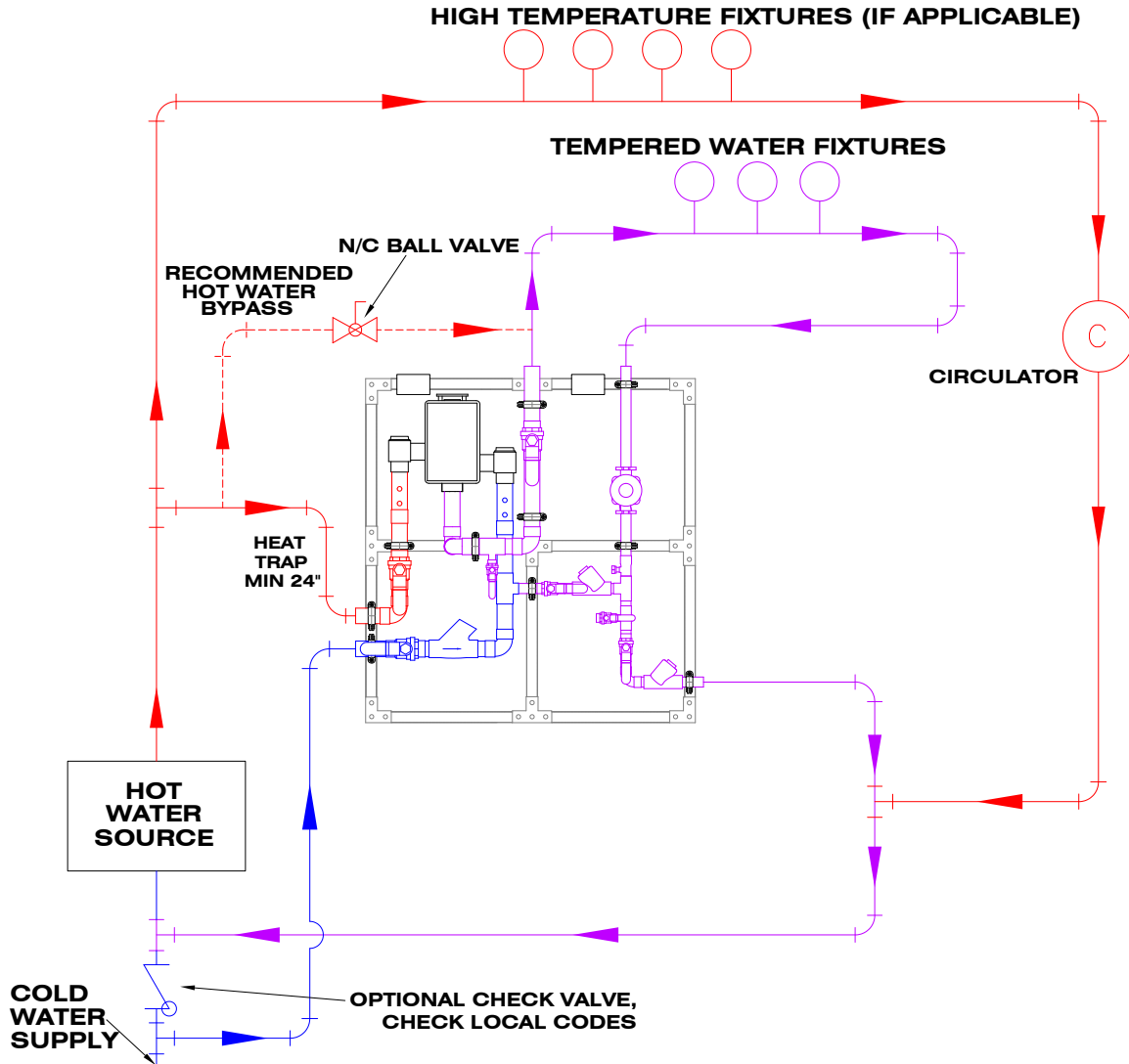
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# MEGATRON® MODEL NV-200-LF

\*Image not to scale\*



MINIMUM FLOW (GPM) (l/min)	PRESSURE DROP										
	5	10	15	20	25	30	35	40	45	50	PSI
	.3	.7	.97	1.4	1.7	2.1	2.4	2.8	3.1	3.4	BAR
0.25** (.95)	80	115	130	147	165	173	189	198	215	226	GPM
	303	435	492	556	625	655	715	750	814	856	l/min

NOTE: Flowrates will vary depending on existing field conditions. Leonard Valve Company always recommends using CASPAK® sizing software for proper valve sizing and model number applications.



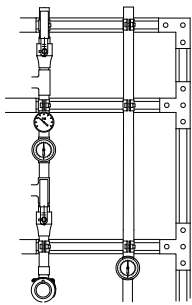
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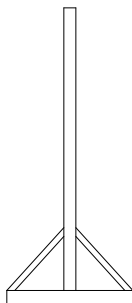
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# OPTIONS



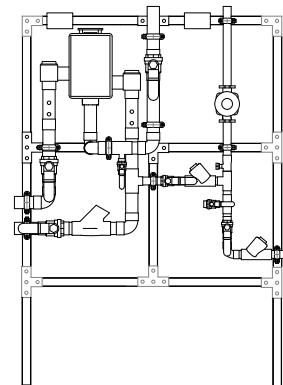
## LC

Megatron® furnished without a circulator.



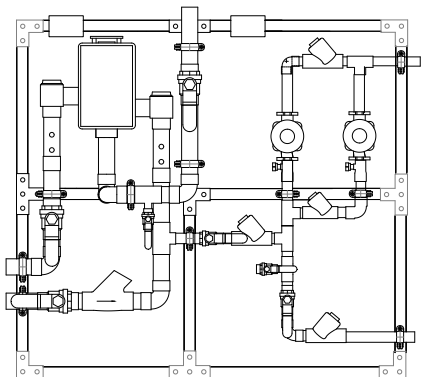
## FM

Megatron® with 3 legs, 3 1/2" feet and 45 degree braces front and back for mounting to floor in center of room.



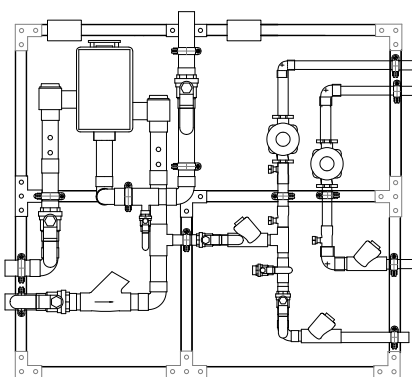
## FS

Megatron® with separate legs to floor to support the unit without hangers.



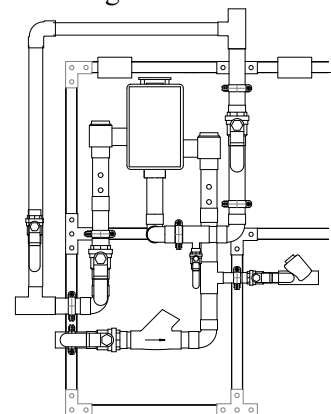
## 2 PUMPS R

Redundant recirculation pump



## 2 PUMPS H

High temperature loop recirculation pump



## HBP

High temperature by-pass flush with locking ball valve

### OPTIONS \*

- LC** Less circulator
- FM** Floor mount
- FS** Free standing
- 2 PUMP R** Redundant recirculator pump
- 2 PUMP H** High temperature loop recirculator pump
- HBP** High temperature by-pass flush
- 265-1** Timer, Analog, 24 hour
- 265-3** Timer, Digital, 7 day
- HOA** HOA switch

### OPTIONS (shown on next page) \*

- RDU** Remote Display Unit
- SCO** Solenoid Control Option
- BPS** Back up Power Supply
- DA** Digital Aquastat
- User chosen pump** (specify on next page)
- DB** Daughter Board
- T5** Extra 5<sup>th</sup> temperature sensor (requires "DB" option)
- T6** Extra 6<sup>th</sup> temperature sensor (requires "DB" option)
- T7** Extra 7<sup>th</sup> temperature sensor (requires "DB" option)
- T8** Extra 8<sup>th</sup> temperature sensor (requires "DB" option)
- F1** Flow sensor (requires "DB" option)
- P3** 3<sup>rd</sup> pressure sensor (requires "DB" option, cannot choose **F2** as well)
- F2** 2<sup>nd</sup> Flow sensor (requires "DB" option, cannot choose **P3** as well)

### PIPING OPTIONS \*

- RP 1-1/2** 1-1/2" Return line size
- RP 2** 2" Return line size

\* Any option chosen will alter pricing





### **OPTION RDU: Leonard Remote Display Unit**

- Activation by Primary Alarm's (pictured above) remote alarm contacts
- Alarm Delay Module with yellow, red, green LED indicators
- Recommended maximum distance from controller to RDU is 500'



### **SCO: Solenoid Control Option**

- For use with Alarm relay switch
- Galvanized box with dimensions 6" Wide x 6" High x 4" Deep
- Solid state relay and terminal strip mounted and wired
- UL listed 100-240VAC power supply with 10' cord
- For either normally open or normally closed operation
- For use with 24-240 VAC solenoids only



### **BPS: Backup Power Supply**

- Uninterruptable Power Supply with up to 2 hours run time in case of primary power loss



### **OPTION DA: Digital Aquastat**

- Electronic digital aquastat with Nema 1 case and SPDT Relay Output

### **OPTION DB: Daughter Board**

- Required extra circuit board, only needed if any options below are chosen

### **OPTION T5-T8: Extra temperature sensors**

### **OPTION F1: Flow Meter on outlet of mixing valve**

### **OPTION P3: Pressure sensor on return line, cannot be combined with F2**

### **OPTION F2: Flow Meter on return line, cannot be combined with P3**

## **OPTION USER CHOSEN PUMP**

Standard pump is TACO 0034E PLUS, if another manufacturer is preferred please specify, but note that ANY change from standard pump will result in a **PRICE INCREASE**



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