



Pensotti Steel Panel Radiators

Pensotti Double steel panel radiators are available in five different sizes: 12, 16, 20, 24 and 36". Single steel panel radiators are available in two sizes: 20" and 24". Each size consists of multiple lengths as described in the data table below. Standard equipment with each radiator includes bottom supply and return connections with reducers, manual air vent, thermostatic valve with flow setter, white cap, two drain plugs and a set of wall mounting brackets. An assortment of PEX tubing and copper pipe fittings along with valves and accessories are available.

Pensotti Radiators are a perfect match for most hydronic heating applications and operate effectively and efficiently with both low and high temperature systems all the way up to 250° F.

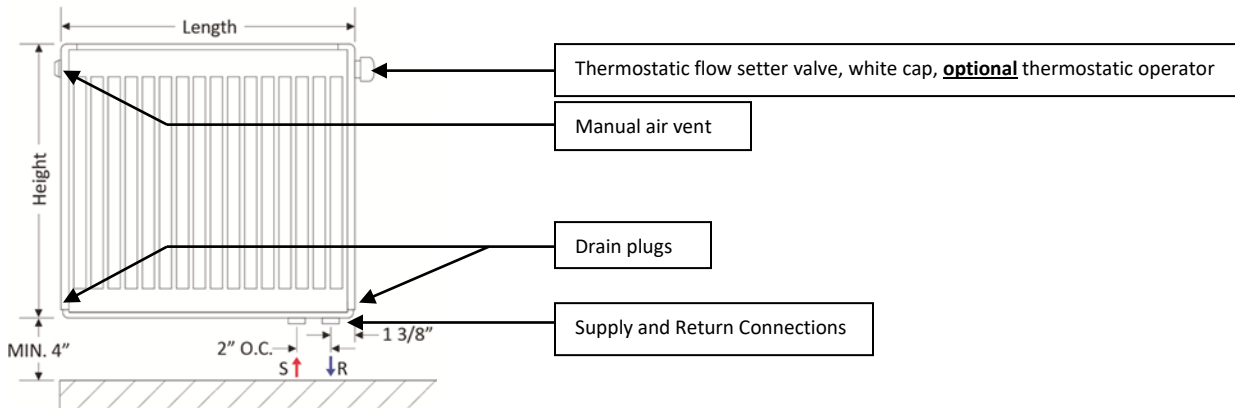
The BTUH output of each Pensotti Radiator is based on the average water temperature flowing through it, along with a 24° F temperature drop across the radiator. Reduced average water temperature output tables are provided to assist in the design of high efficiency – low temperature, condensing boiler systems.

RADIATOR MODEL	HEIGHT (in.)	LENGTH (in.)	DEPTH (in.)	BASEBOARD EQUIVALENT	BTUH OUTPUT		WEIGHT		
					180°F	140°F			
DD22-12.16	12	16	4	3.3	1934	1068	17		
DD22-12.24		24		5.00	2900	1600	24		
DD22-12.32		32		6.7	3866	2133	31		
DD22-12.40		40		8.3	4831	2661	39		
DD22-12.48		48		10.0	5800	3200	46		
DD22-12.56		56		11.7	6766	3733	53		
DD22-12.64		64		13.3	7732	4265	60		
DD22-16.16	16	16	4	4.2	2418	1331	23		
DD22-16.20		20		5.2	3022	1665	28		
DD22-16.24		24		6.3	3626	1999	33		
DD22-16.28		28		7.3	4231	2330	38		
DD22-16.32		32		8.3	4835	2665	43		
DD22-16.36		36		9.4	5440	2996	48		
DD22-16.40		40		10.4	6044	3330	52		
DD22-16.44		44		11.5	6648	3665	57		
DD22-16.48		48		12.5	7253	3995	63		
DD22-16.56		56		14.5	8417	4668	75		
DD22-16.64		64		16.6	9620	5334	85		
DD22-16.72		72		18.7	10822	6000	96		
DD22-20.16		20		16	4	5.0	2876	1583	28
DD22-20.20				20		6.2	3593	1979	34
DD22-20.24	24		7.4	4313		2375	40		
DD22-20.28	28		8.7	5033		2771	46		
DD20-20.32	32		10.0	5749		3166	53		
DD20-20.36	36		11.2	6469		3562	58		
DD22-20.40	40		12.4	7186		3958	64		
DD22-20.44	44		13.6	7906		4354	71		
DD22-20.48	48		14.9	8626		4746	76		
DD22-20.56	56		17.3	10013		5546	91		
DD22-20.64	64		19.7	11440		6335	105		
DD22-20.72	72		22.2	12871		7127	116		
DD22-24.16	24		16	4		5.7	3310	1819	31
DD22-24.20			20			7.1	4135	2276	40
DD22-24.24		24	8.6		4964	2730	48		
DD22-24.28		28	10.0		5790	3183	56		
DD22-24.32		32	11.4		6619	3641	66		
DD22-24.36		36	12.8		7445	4094	75		
DD22-24.40		40	14.3		8270	4548	81		
DD22-24.44		44	15.7		9100	5002	89		
DD22-24.48		48	17.1		9926	5459	97		
DD22-24.56		56	20.0		11580	6367	114		
DD22-24.64		64	22.8		13235	7278	130		
DD22-24.72		72	25.7		14890	8190	149		
DD22-36.16		36	16		4	7.8	4541	2457	48
DD22-36.20			20			9.8	5678	3071	56
DD22-36.24	24		11.7	6814		3685	72		
DD22-36.32	32	15.7	9083	4913	88				
DD21-20.16	20	16	2 5/8	3.7	2171	1198	22		
DD21-20.20		20		4.7	2714	1497	28		
DD21-20.24		24		5.6	3256	1797	33		
DD21-20.28		28		6.5	3799	2096	38		
DD21-20.32		32		7.5	4342	2396	44		
DD21-20.36		36		8.4	4884	2695	49		
DD21-20.40		40		9.4	5427	2994	54		
DD21-20.48		48		11.2	6512	3593	65		
DD21-20.56		56		13.1	7598	4792	75		
DD21-20.64		64		15	8683	4791	86		
DD21-20.72		72		16.8	9769	5390	97		
DD21-24.16		24		16	2 5/8	4.3	2497	1373	26
DD21-24.20				20		5.4	3122	1717	32
DD21-24.24				24		6.5	3746	2060	38
DD21-24.28	28		7.5	4370		2403	44		
DD21-24.32	32		8.6	4995		2747	50		
DD21-24.36	36		9.7	5619		3090	57		
DD21-24.40	40		10.8	6243		3433	63		
DD21-24.44	44		11.8	6868		3777	69		
DD21-24.48	48		12.9	7492		4120	75		
DD21-24.56	48		15.1	8741		4807	87		
DD21-24.64	64		17.2	9989		5494	100		
DD21-27.72	72		19.4	11239		6180	112		

FITTINGS, VALVES AND ACCESSORIES	
ITEM #	DESCRIPTION
A55400T	3/4"EK x 1/2" REDUCER
DD10-376300	12" WALL BRACKET SET
DD10-376400	16" WALL BRACKET SET
DD10-376500	20" WALL BRACKET SET
DD10-376600	24" WALL BRACKET SET
DD10-376900	36" WALL BRACKET SET
DD10-870-20	FLOOR MOUNTING BRACKET SET
A56958E	WHITE PIPE ESCUTCHEON
A56956B	CHROME PIPE ESCUTCHEON
A394-3/8"PEX	A39418Q -3/8" PEX TUBING ADAPTER
A394-1/2"PEX	A39406Q - 1/2" PEX TUBING ADAPTER
A394-5/8"PEX	A39419Q - 5/8" PEX TUBING ADAPTER
A431-1/2"COPPER	A43305Q - 1/2" COPPER PIPE ADAPTER
V71110Q	ANGLE ISOLATION VALVE W/BY-PASS
V72111Q	ANGLE ISOLATION VALVE
V71510Q	STRAIGHT ISOLATION VALVE W/BY-PASS
V72510Q	STRAIGHT ISOLATION VALVE
V721112Q	STRAIGHT SUPPLY/RETURN INVERTER
V721125Q	ANGLED SUPPLY/RETURN INVERTER
A40400A	THERMOSTATIC OPERATOR
V06304B	AUTOMATIC AIR VENT
RADSNAP8W	8" WHITE RADSNAP PIPE COVER
RADSNAP8C	8" CHROME RADSNAP PIPE COVER
A54700L	NICKEL FINISH PIPE COVER KIT
A54700E	WHITE FINISH PIPE COVER KIT

Piping Connections

Pensotti panel radiators are reversible. As such, the supply and returns connections, which are located on the bottom of the radiator, can be on either the left or right side. The inside connection is always the supply (**the supply and return connections cannot be reversed**). A pair of brass, O-ring seat starting reducers (A55400T) is supplied with each radiator. 3/8", 1/2", and 5/8" pex tubing and 1/2" copper pipe adapters are available and attach to the A55400T reducers. Valves, if installed, fit in between the A55400T reducers and the tubing/pipe adapters. Pipe thread sealant is not required.



Alternate Water Temperatures

MODEL	BTU OUTPUT 180 F AVG. WATER 192 F / 168 F	BTU OUTPUT 170 F AVG. WATER	BTU OUTPUT 160 F AVG. WATER	BTU OUTPUT 150 F AVG. WATER	BTU OUTPUT 140 F AVG. WATER	BTU OUTPUT 130 F AVG. WATER	BTU OUTPUT 120 F AVG. WATER	BTU OUTPUT 110 F AVG. WATER
DD22-12.16	1934	1696	1477	1269	1068	874	727	519
DD22-12.24	2900	2542	2218	1900	1600	1310	1037	781
DD22-12.32	3866	3392	2958	2535	2133	1747	1382	1041
DD22-12.40	4831	4237	3695	3170	2661	2184	1726	1300
DD22-12.48	5800	5087	4436	3804	3200	2620	2074	1559
DD22-12.56	6766	5933	5175	4439	3733	3057	2419	1819
DD22-12.64	7732	6783	5913	5074	4265	3494	2763	2081
DD22-16.16	2418	2119	1849	1583	1331	1092	863	648
DD22-16.20	3022	2651	2310	1982	1665	1365	1078	812
DD22-16.24	3626	3180	2771	2378	1999	1638	1293	972
DD22-16.28	4231	3709	3235	2774	2330	1911	1512	1136
DD22-16.32	4835	4241	3695	3170	2665	2184	1726	1297
DD22-16.36	5440	4770	4159	3566	2996	2457	1941	1460
DD22-16.40	6044	5302	4620	3961	3330	2726	2156	1621
DD22-16.44	6648	5831	5083	4357	3665	2999	2371	1784
DD22-16.48	7253	6360	5545	4753	3995	3272	2590	1945
DD22-16.56	8417	7431	6475	5553	4668	3821	3022	2274
DD22-16.64	9620	8493	7400	6345	5334	4368	3456	2599
DD22-16.72	10822	9552	8322	7137	6000	4914	3886	2923
DD22-20.16	2876	2521	2197	1883	1583	1300	1024	771
DD22-20.20	3593	3153	2747	2354	1979	1621	1279	962
DD22-20.24	4313	3780	3295	2825	2375	1945	1535	1153
DD22-20.28	5033	4412	3845	3296	2771	2269	1791	1347
DD20-20.32	5749	5043	4392	3767	3166	2593	2047	1539
DD20-20.36	6469	5670	4942	4238	3562	2914	2303	1733
DD22-20.40	7186	6302	5490	4709	3958	3238	2559	1924
DD22-20.44	7906	6933	6040	5179	4354	3562	2815	2115
DD22-20.48	8626	7561	6590	5650	4746	3886	3071	2310
DD22-20.56	10013	8835	7694	6598	5546	4539	3589	2698
DD22-20.64	11440	10095	8794	7540	6335	5187	4101	3080
DD22-20.72	12871	11358	9893	8483	7127	5836	4614	3466
DD22-24.16	3310	2900	2528	2167	1819	1488	1177	884



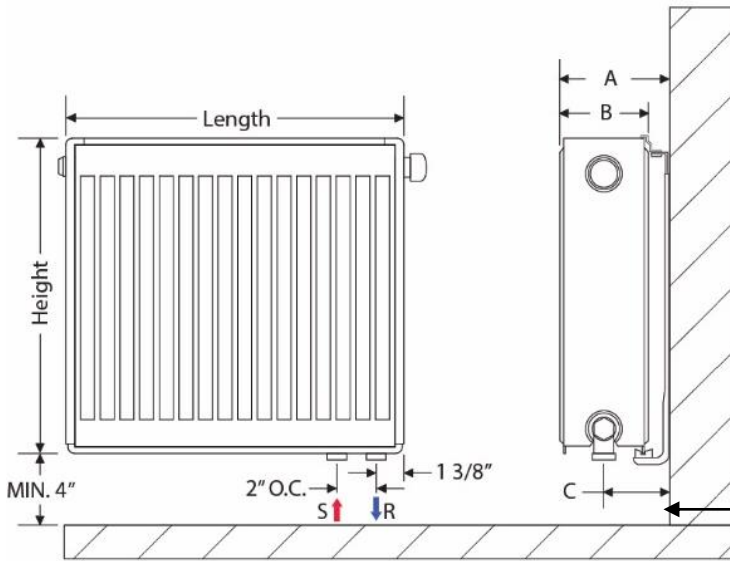
MODEL	BTUH OUTPUT 180°F AVERAGE WATER	BTUH OUTPUT 170°F AVERAGE WATER	BTUH OUTPUT 160°F AVERAGE WATER	BTUH OUTPUT 150°F AVERAGE WATER	BTUH OUTPUT 140°F AVERAGE WATER	BTUH OUTPUT 130°F AVERAGE WATER	BTUH OUTPUT 120°F AVERAGE WATER	BTUH OUTPUT 110°F AVERAGE WATER
DD22-24.20	4135	3627	3160	2706	2276	1863	1471	1105
DD22-24.24	4964	4350	3793	3248	2730	2235	1764	1327
DD22-24.28	5790	5077	4424	3791	3183	2607	2057	1546
DD22-24.32	6619	5800	5057	4336	3641	2979	2354	1767
DD22-24.36	7445	6527	5688	4872	4094	3351	2648	1989
DD22-24.40	8270	7250	6318	5415	4548	3722	2941	2211
DD22-24.44	9100	7977	6952	5957	5002	4094	3235	2429
DD22-24.48	9926	8704	7583	6496	5459	4466	3528	2651
DD22-24.56	11580	10154	8847	7581	6367	5213	4118	3095
DD22-24.64	13235	11604	10111	8663	7278	5957	4705	3535
DD22-24.72	14890	13054	11376	9745	8190	6701	5295	3978
DD22-36.16	4541	3968	3443	2938	2457	1999	1569	1170
DD22-36.20	5678	4957	4306	3675	3071	2501	1962	1464
DD22-36.24	6814	5951	5166	4408	3685	2999	2354	1757
DD22-36.32	9083	7933	6885	5879	4913	4002	3142	2341
DD21-20.16	2171	1914	1666	1427	1198	979	773	580
DD21-20.20	2714	2393	2082	1784	1497	1224	966	725
DD21-20.24	3256	2871	2499	2140	1797	1469	1160	870
DD21-20.28	3799	3350	2915	2497	2096	1714	1353	1015
DD21-20.32	4342	3828	3332	2854	2396	1959	1546	1160
DD21-20.36	4884	4307	3748	3211	2695	2204	1739	1305
DD21-20.40	5427	4785	4165	3567	2994	2449	1933	1450
DD21-20.48	6512	5742	4998	4281	3593	2938	2319	1740
DD21-20.56	7598	6699	5831	4994	4192	3428	2706	2030
DD21-20.64	8683	7656	6664	5708	4791	3918	3092	2320
DD21-20.72	9769	8613	7497	6421	5390	4408	3479	2610
DD21-24.16	2497	2200	1914	1638	1373	1124	884	662
DD21-24.20	3122	2751	2392	2047	1717	1402	1105	828
DD21-24.24	3746	3301	2870	2457	2060	1683	1326	993
DD21-24.28	4370	3851	3349	2866	2403	1963	1547	1159
DD21-24.32	4995	4401	3827	3275	2747	2244	1768	1324
DD21-24.36	5619	4951	4306	3685	3090	2524	1989	1490
DD21-24.40	6243	5501	4784	4094	3433	2804	2210	1656
DD21-24.44	6868	6051	5263	4504	3777	3085	2431	1821
DD21-24.48	7492	6601	5741	4913	4120	3365	2653	1987
DD21-24.56	8116	7151	6220	5322	4457	3646	2875	2153
DD21-24.64	8741	7701	6698	5732	4807	3926	3095	2318
DD21-24.72	9365	8251	7177	6143	5148	4207	3317	2484

Pensotti panel radiators can be used in all temperature heating systems up to 250° F. The reduced water temperature table above is provided to assist both designers and installers with the proper size selection of radiators at other than the standard average water temperature of 180°F. The BTUH outputs listed are based on the average water temperature with a 24° F drop across the radiator. When designing a system incorporating a condensing boiler, be sure to select a Pensotti radiators' size based on an average water temperature low enough to allow the boiler to condense throughout the heating season.

Water Content

WATER CONTENT		
	Double	Single
HEIGHT	(GALS/Foot)	(GALS/Foot)
12"	.35	-
16"	.41	-
20"	.47	.47
24"	.54	.54
36"	.73	-

Rough-In Dimensions

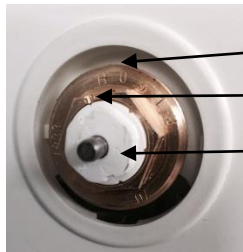


A **Minimum** Space of 4" Must Be Provided Between the Floor and Bottom of the

Radiator Model	Height (inches)	A	B	C
Single	20 24	3 3/4"	2 5/8"	2 1/2" o.c.
Double	12 16 20 24 36	5 1/4"	4 1/8"	3 1/4" o.c.

Thermostatic Flow Setter Valve

Each radiator is equipped with a thermostatic flow setter valve installed. This valve incorporates two elements: a manually adjustable flow balancing valve and a temperature control. When an **optional** thermostatic operator is installed (A40400A), the flow rate of the water and therefore the heat output of the radiator will automatically be controlled. If the optional thermostatic operator is not installed the white decorative knob supplied with the radiator must be left loose to provide unrestricted water flow through the radiator. The balancing function can be adjusted by turning the white portion of the valve stem and aligning a number on the scale with the position indicator located on the brass portion of the valve. See percentage scale below.



- 30mm mounting threads for optional thermostatic operator, A40400A, or white cap
- Position Indicator
- Flow Setter opening indicator (percent open)
6=100%, 5=50%, 4=40%, 3=30%, 2=20%, 1=10%.

Thermostatic Operator (Provides Automatic Operation of the Thermostatic Valve) A40400A

A thermostatic operator is easily installed on the thermostatic flow setter valve. Simply, turn the setting on the operator to #5, remove the white cap from the thermostatic flow setter valve and screw the operator onto the valve completely. Set the operator to the desired temperature using the table to the left.

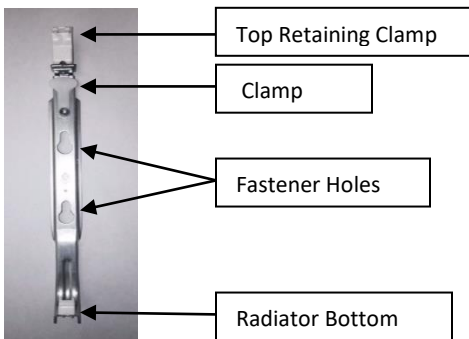


Number	Approximate Room Temperature
Snowflake	43.7 F
1	51.8 F
2	60.8 F
3	68.0 F
4	75.2 F
5	81.5 F

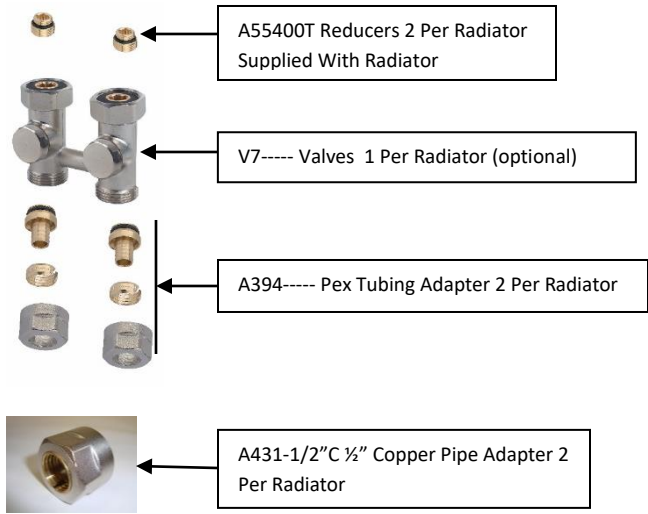
Wall Mounting Bracket (1 Pair per Radiator Is Required, Supplied with Radiator) EVKPLUS/--

Pensotti Snap Grip mounting brackets must be securely fastened to the wall. Frame type construction requires that the brackets be fastened to the wall studs, preferably evenly spaced and toward the ends of the radiator. Each set of mounting brackets includes 2 masonry wall anchors, these are **not** to be used as hollow wall anchors in frame type construction applications.

Install the brackets, aligning the bottom with the desired height of the radiator bottom; a minimum of 4" is required. Plumb the brackets against the wall and mark the hole locations. Drill pilot holes and install the screws, do not tighten, hang the brackets from the screws then tighten completely. Extend the top clamp by pulling the clamp lock away from the bracket slightly and lifting the clamp. Lift the radiator and fit the rear bottom edge into the bottom seats. Tilt the top of the radiator towards the wall, when plumb, push the top retaining clips down into the radiator grill until a click is heard. A screw on the top of the retaining clamp permits minor adjustments if necessary. Additional bracket sets are available if required.



Tubing, Pipe Fitting and Valves



Pensotti panel radiators can be connected directly to a piping system using the available PEX tubing and copper pipe adapters (see Page 1). Two adapters are required per radiator. Isolation and By-pass valves are available and installed between the A55400T reducers and Pex tubing and/or copper pipe adapters.

Insert the A55400T reducers into the supply and return connections of the radiator and tighten with a 12mm allen wrench. Slide the 3 piece Pex adapters onto the proper size tubing, nut first, then compression ring and lastly the O-ring insert. Slide the end of the tubing into the A55400T reducer completely and hold it. Slide the adapter nut and compression ring along the tubing and tighten onto the A54400T reducer. Do not over tighten. **Pipe adapters are not designed to support the weight of the pipe. Secure all pipes with the proper hangers beginning no further than 12" from the pipe adapter.**

The A431-1/2"C copper pipe adapter is one piece. Install it on the 1/2" copper pipe compression ring end first. Slide the end of the copper pipe into the A55400T reducer completely and hold it. Slide the copper adapter along the pipe and tighten onto the A55400T reducer. Do not overtighten. **Pipe adapters are not designed to support the weight of the pipe. Secure all pipes with the proper hangers beginning no further than 12" from the pipe adapter.**

Isolation and By-pass Valves



Straight and 90° angled isolation valves, along with straight and 90° angled isolation/by-pass valves are available.

Isolation valves are designed to simply isolate the radiator from the piping system, allowing quick and easy maintenance.

Straight valves are designed for through the floor piping and 90° angled valves for through the wall.

Isolation/By-Pass valves not only isolate the radiator but also allow radiators to be piped using one pipe systems incorporating the optional thermostatic operators. Each valve is factory set at 35% flow through the radiator and 65% through the by-pass. Additional adjustment can be accomplished by adjusting the by-pass screw with a 5mm allen wrench. Turning the adjustment clockwise increases water flow through the radiator. To set the adjustment screw back to the factory setting, turn it clockwise to the fully closed position, then turn it counter-clockwise 1 3/4 turns.

Installation Examples

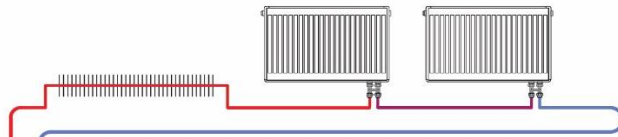
Pensotti panel radiators can be installed utilizing common system piping practices. Some, such as series circuit systems, are accompanied with strict limitations. Please consult a qualified distributor to assist you in designing an efficient, functional system.

Important!

Before filling the system with water, tighten all radiator plugs, air vent, thermostatic valve and supply and return fittings. All new installations must be air pressure tested for leaks before the piping system and radiator(s) are filled with water.

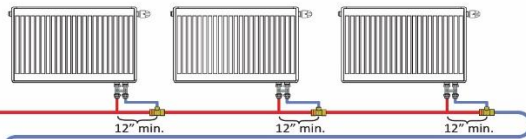
Series Circuit w/By-Pass Valves

- Maximum 2 GPM and/or 4 radiators
- Thermostatic operators should **NOT** be used



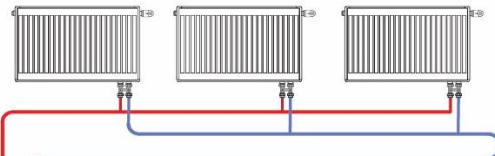
Monoflow w/Thermostatic Operators and Isolation Valves

- Min. 12" spacing between supply tee and monoflow tee
- Thermostatic operators offer individual radiator zoning



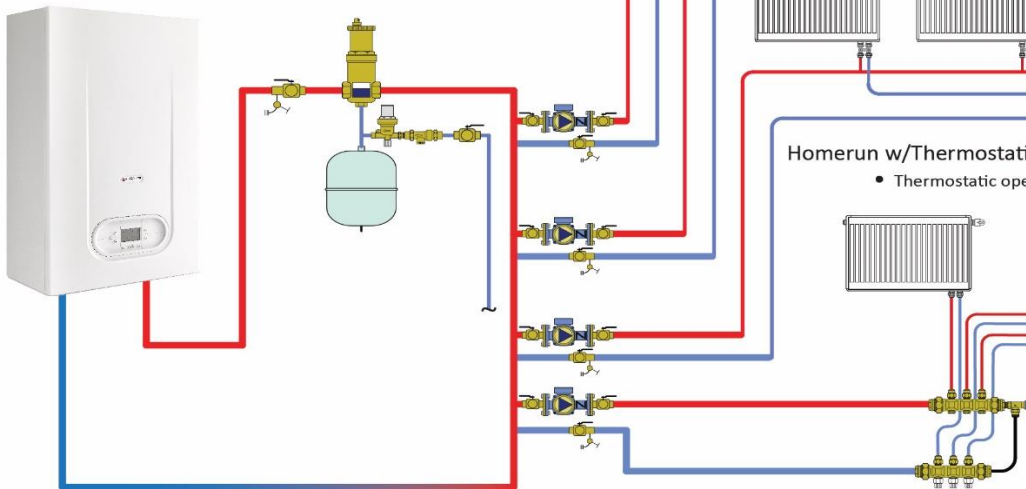
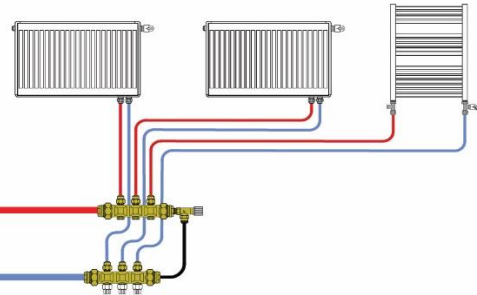
Reverse Return w/Thermostatic Operators and Isolation Valves

- Isolation valves are optional
- Thermostatic operators offer individual radiator zoning



Homerun w/Thermostatic Operators and Manifold By-Pass

- Thermostatic operators offer individual radiator zoning



Notes: