

NOTE: For information or questions outside the scope of this manual contact a qualified heating professional for assistance.

Pensotti steel panel radiators are available in five different heights; 12", 16", 20", 24" and 36". Each height consists of multiple lengths as shown in the data table below. Standard equipment with each radiator includes:

- (2) A55400T Reducers
- (1) Manual Air Vent
- (1) Thermostatic valve with flow setter & white cap
- (2) Drain plugs (pre-installed)
- A set of mounting brackets
- (2) ½" Pex tubing fittings
- (2) ½" Copper pipe fittings
- (2) White Escutcheons
- (2) White Radsnap Pipe Covers

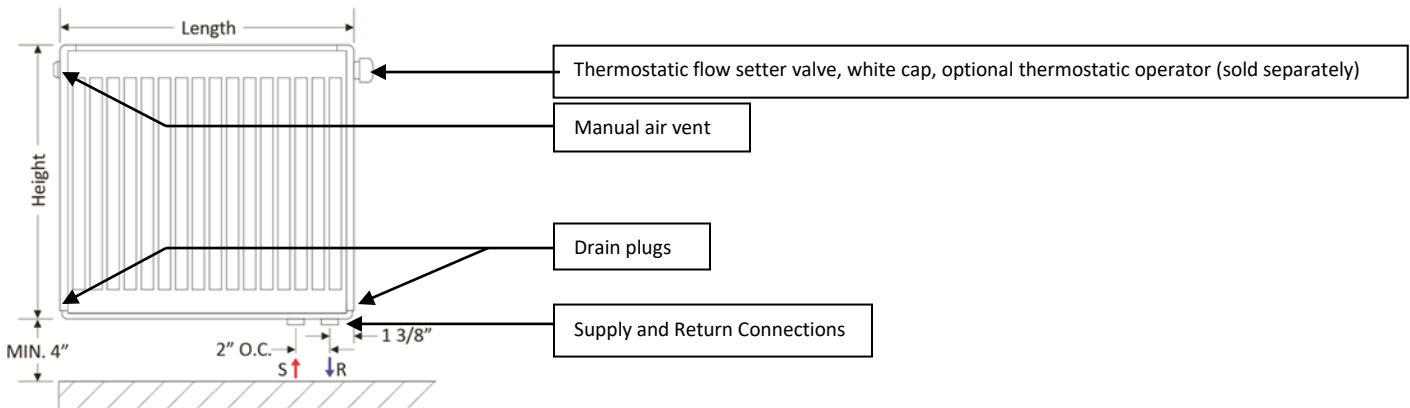
Pensotti Radiators are a perfect match for most hydronic heating applications and operate effectively and efficiently with both low and high temperature systems all the way up to 250° F.

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.

MODEL	HEIGHT	LENGTH	BASEBOARD EQUIVALENT	BTUH OUTPUT		WEIGHT
				180° F	140° F	
HD12-16D	12	16	3.33	1934	1068	17
HD12-24D	12	24	5.00	2900	1600	24
HD12-32D	12	32	6.67	3866	2133	31
HD12-40D	12	40	8.33	4831	2661	39
HD12-48D	12	48	10.00	5800	3200	46
HD16-16D	16	16	4.17	2418	1331	23
HD16-24D	16	24	6.25	3626	1999	33
HD16-32D	16	32	8.34	4835	2665	43
HD16-36D	16	36	9.38	5440	2996	48
HD16-40D	16	40	10.42	6044	3330	52
HD16-48D	16	48	12.51	7253	3995	63
HD20-16D	20	16	4.96	2876	1583	28
HD20-24D	20	24	7.44	4313	2375	40
HD20-32D	20	32	9.91	5749	3166	53
HD20-36D	20	36	11.15	6469	3562	58
HD20-40D	20	40	12.39	7186	3958	64
HD20-48D	20	48	14.87	8626	4746	76
HD24-16D	24	16	5.71	3310	1819	31
HD24-24D	24	24	8.56	4964	2730	48
HD24-32D	24	32	11.41	6619	3641	66
HD24-36D	24	36	12.84	7445	4094	75
HD24-40D	24	40	14.26	8270	4548	81
HD24-48D	24	48	17.11	9926	5459	97
HD36-16D	36	16	7.83	4541	2457	48
HD36-20D	36	20	9.79	5678	3071	56
HD36-24D	36	24	11.75	6814	3685	72
HD36-32D	36	32	15.66	9083	4913	88

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 as well as ½" Pex tubing and ½" copper pipe adapters. Isolation/bypass valves (sold separately) fit in between the A55400T reducers and the tubing/pipe adapters. Pipe thread sealant is not required.



Reduced Average Water Temperature @ 24° Delta T							
MODEL	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
HD12-16D	1696	1477	1269	1068	874	727	519
HD12-24D	2542	2218	1900	1600	1310	1037	781
HD12-32D	3392	2958	2535	2133	1747	1382	1041
HD12-40D	4237	3695	3170	2661	2184	1726	1300
HD12-48D	5087	4436	3804	3200	2620	2074	1559
HD16-16D	2119	1849	1583	1331	1092	863	648
HD16-24D	3180	2771	2378	1999	1638	1293	972
HD16-32D	4241	3695	3170	2665	2184	1726	1297
HD16-36D	4770	4159	3566	2996	2457	1941	1460
HD16-40D	5302	4620	3961	3330	2726	2156	1621
HD16-48D	6360	5545	4753	3995	3272	2590	1945
HD20-16D	2521	2197	1883	1583	1300	1024	771
HD20-24D	3780	3295	2825	2375	1945	1535	1153
HD20-32D	5043	4392	3767	3166	2593	2047	1539
HD20-36D	5670	4942	4238	3562	2914	2303	1733
HD20-40D	6302	5490	4709	3958	3238	2559	1924
HD20-48D	7561	6590	5650	4746	3886	3071	2310
HD24-16D	2900	2528	2167	1819	1488	1177	884
HD24-24D	4350	3793	3248	2730	2235	1764	1327
HD24-32D	5800	5057	4336	3641	2979	2354	1767
HD24-36D	6527	5688	4872	4094	3351	2648	1989
HD24-40D	7250	6318	5415	4548	3722	2941	2211
HD24-48D	8704	7583	6496	5459	4466	3528	2651
HD36-16D	3968	3443	2938	2457	1999	1569	1170
HD36-20D	4957	4306	3675	3071	2501	1962	1464
HD36-24D	5951	5166	4408	3685	2999	2354	1757
HD36-32D	7933	6885	5879	4913	4002	3142	2341

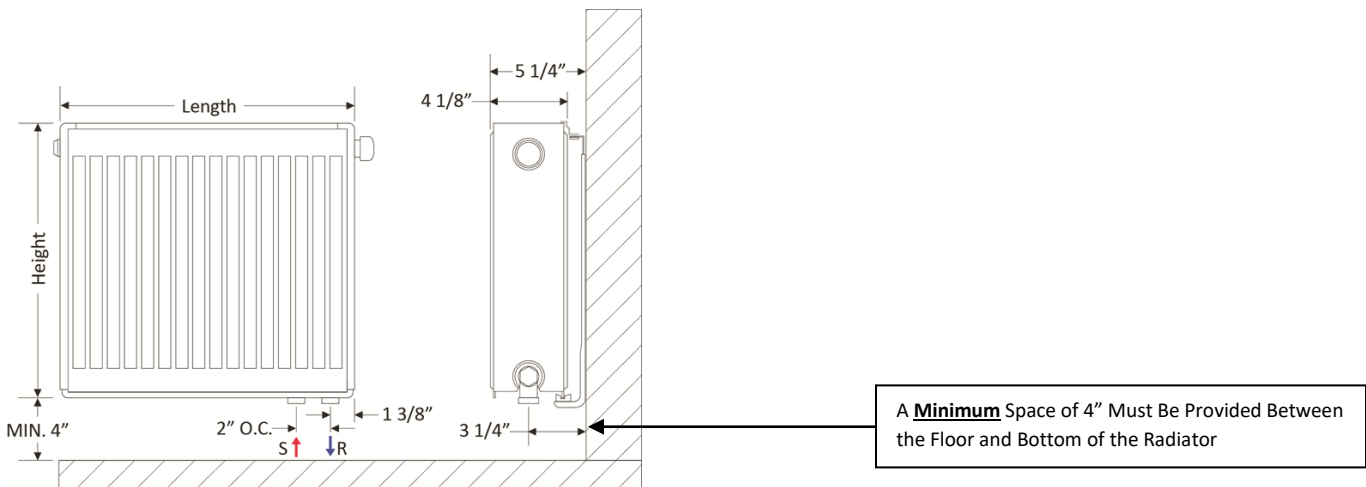
Alternate Water Temperatures

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 temperatures 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 the appropriate radiator size based on an average water temperature low enough to allow the boiler to condense throughout the heating season.

Water Content

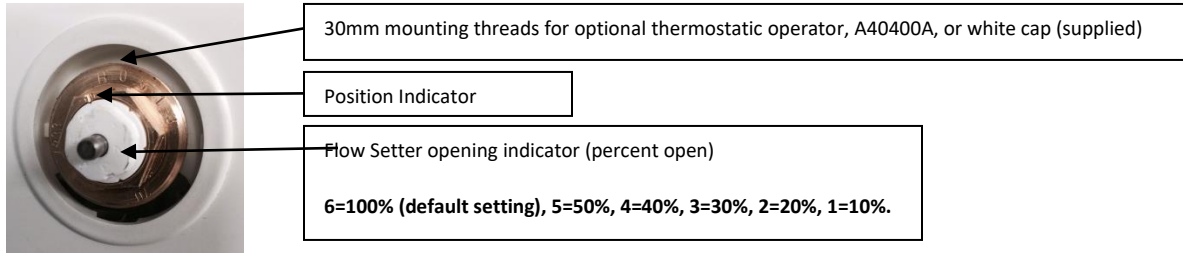
WATER CONTENT	
HEIGHT	(GALS/FT.)
12"	.35
16"	.41
20"	.47
24"	.54
36"	.73

Rough-In Dimensions



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 A40400A thermostatic operator is installed (sold separately), 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.

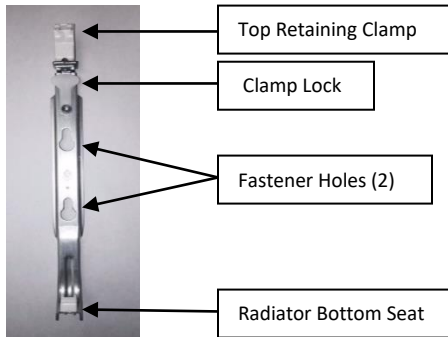


Thermostatic Operator (Provides Automatic Operation of the Thermostatic Valve) A40400A

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

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.

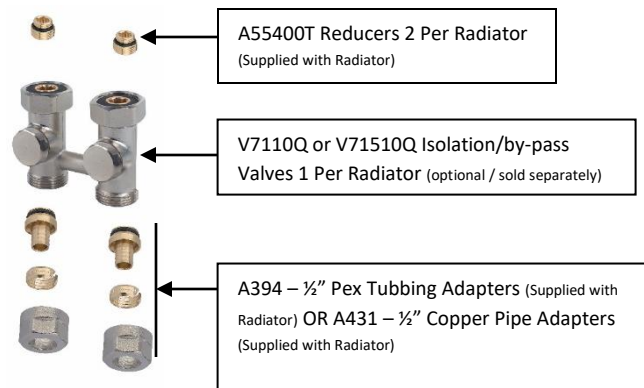
Wall Mounting Bracket (1 Pair per Radiator Is Required, Supplied With Radiator) EVKPLUS/--



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 by-pass valves are available and installed between the A55400T reducers and Pex tubing and/or copper pipe adapters.

PEX Connections:

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 overtighten.

Copper Connections:

The A431-1/2"C copper pipe adapter is one piece. Install it on the ½" 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 nut along the pipe and tighten onto the A55400T reducer. Do not overtighten.

All fittings are sealed using integral O-rings. Pipe thread sealant is not required.

Isolation By-pass Valves



V71510Q Straight Isolation Valve w/By-Pass



V71110Q Angled Isolation Valve w/By-Pass

Straight and 90° angled isolation /by-pass valves are available (sold separately)

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

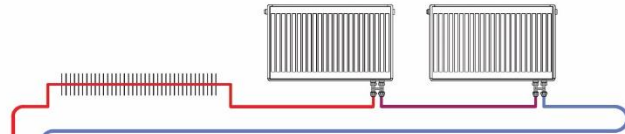
Isolation/By-Pass valves isolate the radiator (from the piping system, allowing quick and easy maintenance). They also allow radiators to be piped using one pipe systems incorporating the optional thermostatic operators. Each valve is factory set at 35% flow through the radiator and 65% through the by-pass. 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 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.

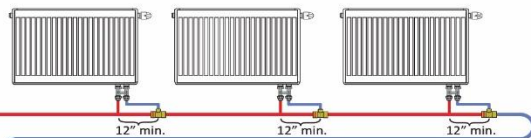
Series Circuit w/By-Pass Valves

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



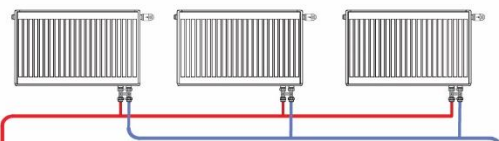
Monoflow w/Thermostatic Operators and Isolation Valves

- 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

