



Hydronic Radiant and Snowmelt

v.7.2023

Product Catalog

Tubing
Panel Systems
Manifold and Mixing Stations
Fittings and Tools
Valves and Controls

Living full of energy

Hydronic and Radiant Heating Product Catalog



Table of Contents

Section 1 - Tubing.....3

Section 2 - Radiant Installation Systems.....5

Section 3 - Manifolds.....9

Section 4 - Mixing Stations.....17

Section 5 - PE-RT/PEX Fittings and Tools.....19

Section 6 - Installation Accessories.....25

Section 7 - Hydronic Valves.....29

Section 8 - Hydronic Controls.....34

Section 1 - Tubing

X-PERT S5 Multilayer PE-RT Tubing for Radiant and Hydronic Heating Systems.....4

Tubing



X-PERT S5®

- Five Layer PE-RT tubing (Polyethylene of Raised Temperature)
- DOWLEX™ 2344 Polyethylene Copolymer Resin
- Layers: PE-RT - Adhesive - EVOH oxygen diffusion barrier - Adhesive - PE-RT
- Used for all radiant and hydronic heating applications
- Unsurpassed flexibility and recyclable
- Compatible with standard PEX fittings, cold expansion fittings, and mechanical fastening systems
- Cold bending radius – 6 x diameter

Custom Lengths in 25' Increments Available - 30,000' or \$10,000 Min. Order

3/8" X-PERT S5

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2352129000	3/8" Coil x 300'	1 Coil	14 (5.5)
2352129300	3/8" Coil x 1000'	1 Coil	44 (20.0)

1/2" X-PERT S5

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2352159000	1/2" Coil x 300'	1 Coil	18 (8.2)
2352159300	1/2" Coil x 1000'	1 Coil	56 (25.4)
2352159301	1/2" Coil x 2000'	1 Coil	110 (49.9)

5/8" X-PERT S5

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2352199100	5/8" Coil x 500'	1 Coil	40 (18.2)
2352199300	5/8" Coil x 1500'	1 Coil	117 (53.1)

3/4" X-PERT S5

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2352229000	3/4" Coil x 100'	1 Coil	12 (5.5)
2352229301	3/4" Coil x 300'	1 Coil	32 (14.5)
2352229100	3/4" Coil x 600'	1 Coil	64 (29.0)
2352229300	3/4" Coil x 1000'	1 Coil	105 (47.7)
2352229101	3/4" x 20' sticks	Bag of 10 sticks	25 (12.0)

1" X-PERT S5

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2352289000	1" Coil x 100'	1 Coil	19 (8.6)
2352289100	1" Coil x 500'	1 Coil	86 (39.0)
2352289101	1" x 20' sticks	Bag of 10 sticks	40 (18)

Section 2 - Radiant Installation Systems

Radiant Panel System.....6

Crete-Heat Insulated Floor Panel System.....7

Thermo-Fin Plates.....8

Heat Transfer Plates- Single Groove.....8

Heat Transfer Plates- Double Groove.....8

Radiant Installation Systems

Radiant Panel System

Master Panel



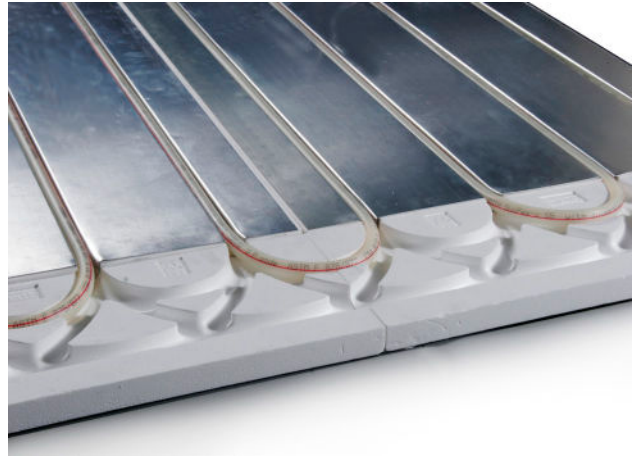
Roth's versatile, lightweight panel system has the insulation on the bottom and the aluminum heat transfer sheet on the top - The way it should be!

- Can be installed over any new or existing subfloor
- Used with a variety of floor coverings
- Ideal for wall and ceiling radiant installations
- Easily installed over an existing concrete floor
- Lightweight - Easy to transport and install
- Two pipe sizes: 3/8" & 1/2"
- Quick recovery time allows for night time setback
- Panel height: 3/8" - .75" (19 mm) 1/2" - 1" (25 mm)
- Insulation R-values: 3/8" - R -3.7 1/2" - R -4.5
- Tubing centers: 6" (15.24 cm) (Can use 12" center if desired)
- Aluminum Sheet: 24 ga
- Insulation: High density EPS (Expanded Polystyrene)
60 psi (6.3 kg/cm²)
- Normal Operating Temperatures: 60° F - 140° F (15° C - 60° C)

Radius Panel



Transition Panel



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight w/ box lbs (kg)</i>
2371000009	Radiant Panel System For 3/8" Tubing	1 Box consists of the following parts (will cover 96 sq.ft.): 10 Master Panels (4' x 2') 6 Radius Panels (8" x 2') 12 Transition Panels (4" x 2')	49 (22.3)
2371000010	Radiant Panel System For 1/2" Tubing	1 Box consists of the following parts (will cover 96 sq.ft.): 10 Master Panels (4' x 2') 6 Radius Panels (8" x 2') 12 Transition Panels (4" x 2')	58 (26.3)
2371000008	Radius Panel for 3/8" Tubing	1 Box consists of 10 Radius Panels	2 (0.9)
2371000011	Radius Panel for 1/2" Tubing	1 Box consists of 10 Radius Panels	3 (1.4)

Radiant Installation Systems

Insulated Floor Panel Systems

by **CRETE-HEAT™** LLC



- Simplifies installation of concrete or gypsum based radiant floor heating systems
- Cuts installation time by as much as 2/3
- Insulation, vapor barrier and radiant tube holding grid in one product
- UV protected packaging for outdoor storage
- Board size - 25" x 49" Effective area - 24" x 48"
- Radiant tubing spacing - 3" centers

Crete-Heat - CH-1

- Total thickness (including 1" insulation) - 1 7/8"
- Thermal resistance - R-6
- For use with 3/8", 1/2" & 5/8" tubing
- 96 sq. ft. (12 boards) per bag

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2379000001	Crete-Heat CH-1 Bag of 12	1	30 (13.6)

Crete-Heat - CH-2

- Total thickness (including 2" insulation) - 2 7/8"
- Thermal resistance - R-10
- For use with 3/8", 1/2" & 5/8" tubing
- 64 sq. ft. (8 boards) per bag



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2379000002	Crete-Heat CH-2 Bag of 8	1	30 (13.6)

Crete-Heat - CH-2 Melt

- Total thickness (including 2" insulation) - 2 7/8"
- Thermal resistance - R-10
- For use with 3/4" and 1" tubing
- 64 sq. ft. (8 boards) per bag

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2379000004	Crete-Heat CH-2 Melt Bag of 8	1	30 (13.6)

Crete-Heat - CH-3

- Total thickness (including 3" insulation) - 3 7/8"
- Thermal resistance - R-14
- For use with 3/8", 1/2" & 5/8" tubing
- 48 sq. ft. (6 boards) per bag



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2379000003	Crete-Heat CH-3 Bag of 6	1	30 (13.6)

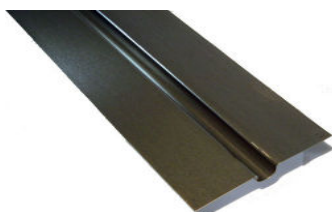
Radiant Installation Systems

Thermo-Fin and Thin-Fin Plates

- Heavy duty, 15 and 16 gauge - .05”(1.29 mm) extruded aluminum
- Use with X-PERT S5, DuoPex S5 and AluLaser Plus



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg) w/ box</i>	<i>Dimensions inches (mm)</i>
2340034334	Thin-Fin Plates - 1/2” Tubing 16 gauge extruded aluminum PRE-DRILLED HOLES	20	25 (11.4)	3.5” x 48” (88.9 x 1219.2)
2340034332	Thermo-Fin Plates - 3/8” Tubing 15 gauge extruded aluminum NO HOLES	20	25 (11.4)	4” x 48” (101.6 x 1219.2)



Heat Transfer Plates – Single Groove

- 26 gauge (0.46 mm) aluminum, single groove - for 3/8”, 1/2” & 5/8” tubing
- Use with X-PERT S5, DuoPex S5 and AluLaser Plus

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>	<i>Dimensions inches (mm)</i>
2340034133	Single Groove	50	15 (6.8)	5” x 24” (127 x 609.6)



Heat Transfer Plates - Double Groove

- 26 gauge (0.46 mm) aluminum, double groove - for 3/8”, 1/2” & 5/8” tubing
- Use with X-PERT S5, DuoPex S5 and AluLaser Plus

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>	<i>Dimensions inches (mm)</i>
2340034233	Double-Groove	50	30 (13.6)	13” x 24” (330.2 x 609.6)

Section 3 - Manifolds

RSS Manifolds and Accessories.....10

RSS Manifold Accessories.....11

CM Manifolds12

CM Manifold Accessories.....13

Transition Fittings using Manifold Tubing Fitting Assemblies.....14

Copper Manifolds & Accessories - Commercial.....14

Manifold Cabinets.....16

Manifolds



RSS Manifolds Sets

- Constructed of “Eco” friendly, non-polished stainless steel
- Available in 1” and 1 1/4” trunk sizes, 2 - 12 loop connections
- Sets include:
 - Straight isolation ball valves on trunk supply and return connections with temperature gauges
 - Fill/drain/vent tees with 3/4” garden hose thread, 1/4 turn valve and manual (coin) vent
 - Flowmeters on supply manifold outlets with 0 – 2 gpm scale
 - Flow regulator valves on return manifold outlets with manual multi-turn operators
 - 3/4” Euroconical compression fittings (R20) used to attach tubing to manifold inlets/outlets (sold separately)

1” RSS Manifolds

<i>Part #</i>	<i>Description</i>	<i>Stations/ Loops</i>	<i>Shipping Length (in)</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2315020002	RSS, 1" x 2 Loop Manifold	2	15x9x4	1	10 (4.6)
2315020003	RSS, 1" x 3 Loop Manifold	3	15x9x4	1	12 (5.5)
2315020004	RSS, 1" x 4 Loop Manifold	4	15x9x4	1	15 (6.8)
2315020005	RSS, 1" x 5 Loop Manifold	5	15x14x4	1	17 (7.8)
2315020006	RSS, 1" x 6 Loop Manifold	6	15x14x4	1	19 (8.7)
2315020007	RSS, 1" x 7 Loop Manifold	7	15x17x4	1	21 (9.6)
2315020008	RSS, 1" x 8 Loop Manifold	8	15x17x4	1	23 (10.5)
2315020009	RSS, 1" x 9 Loop Manifold	9	15x19x4	1	25 (11.4)
2315020010	RSS, 1" x 10 Loop Manifold	10	15x29x4	1	27 (12.3)
2315020011	RSS, 1" x 11 Loop Manifold	11	15x29x4	1	28 (12.8)
2315020012	RSS, 1" x 12 Loop Manifold	12	15x29x4	1	30 (13.7)

1-1/4” RSS Manifolds

<i>Part #</i>	<i>Description</i>	<i>Stations/ Loops</i>	<i>Shipping Length (in)</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2315020103	RSS, 1-1/4" x 3 Loop Manifold	3	15x9x4	1	15 (6.8)
2315020104	RSS, 1-1/4" x 4 Loop Manifold	4	15x14x4	1	17 (7.8)
2315020105	RSS, 1-1/4" x 5 Loop Manifold	5	15x14x4	1	19 (8.7)
2315020106	RSS, 1-1/4" x 6 Loop Manifold	6	15x17x4	1	21 (9.6)
2315020107	RSS, 1-1/4" x 7 Loop Manifold	7	15x17x4	1	23 (10.5)
2315020108	RSS, 1-1/4" x 8 Loop Manifold	8	15x19x4	1	25 (11.4)
2315020109	RSS, 1-1/4" x 9 Loop Manifold	9	15x29x4	1	27 (12.3)
2315020110	RSS, 1-1/4" x 10 Loop Manifold	10	15x29x4	1	28 (12.8)
2315020111	RSS, 1-1/4" x 11 Loop Manifold	11	15x29x4		29 (13.4)
2315020112	RSS, 1-1/4" x 12 Loop Manifold	12	15x29x4	1	30 (13.7)

Manifolds

RSS PERT/PEX Fittings

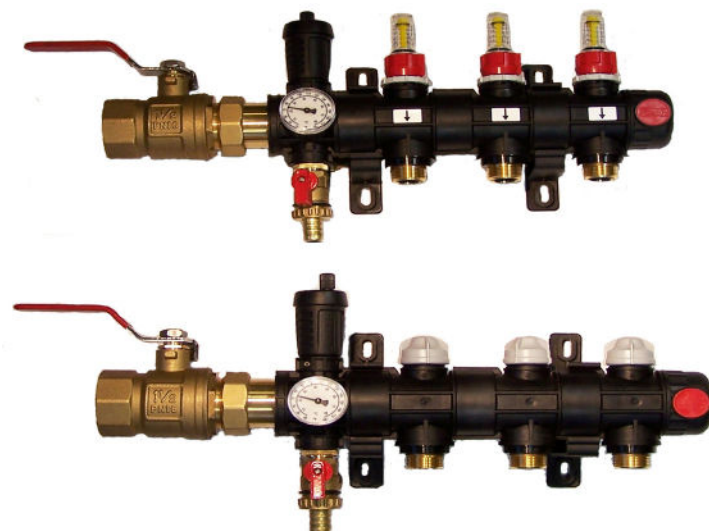
- R20 (Nominal 3/4") threaded euroconical nickel-plated brass compression fittings
- Attaches various types and size tubing to manifold branch outlets

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs</i>
2315021000	3/8" RSS Manifold Fitting Assembly - bag of 10	10	10 (5)
2315021001	1/2" RSS Manifold Fitting Assembly - bag of 10	10	10 (5)
2315021002	5/8" RSS Manifold Fitting Assembly - bag of 10	10	10 (5)
2315021003	3/4" RSS Manifold Fitting Assembly - bag of 2	2	2 (1)

RSS Manifold Accessories

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs</i>
2315021004	Automatic Air Vent	1	1 (.5)
2315021005	Differential Pressure Bypass Valve	1	1 (.5)
2315021006	Manifold extension - Supply & Return 1"	1	1 (.5)
2315021007	Loop Cap - 3/4"	1	1 (.5)
2315021008	Trunk Cap - 1"	1	1 (.5)
2315021009	Trunk Cap - 1 1/4"	1	1 (.5)
2315021010	Manifold Trunk Coupling - 1"	1	1 (.5)
2315021011	Manifold Trunk Coupling - 1 1/4"	1	1 (.5)
2315021012	Vent / Fill fitting (3/4" GHB) - 1"	1	1 (.5)
2315021013	Vent / Fill fitting (3/4" GHB) - 1-1/4"	1	1 (.5)
2315021014	Vent / Fill fitting gasket - 1"	1	1 (.5)
2315021015	Vent / Fill fitting gasket - 1-1/4"	1	1 (.5)
2315021016	Manual Air Vent	1	1 (.5)
2315021017	Supply/return ball valve assem - 1"	1	1 (.5)
2315021018	Supply/return ball valve assem - 1-1/4"	1	1 (.5)
2315021021	Supply/return ball valve thermometer	1	1 (.5)
2315021022	Flowmeter valve assem for 1" w/seals	1	1 (.5)
2315021023	Flowmeter valve assem for 1-1/4" w/seals	1	1 (.5)
2315021024	Flowmeter Valve Nipple - 1"	1	1 (.5)
2315021025	Flowmeter Valve Nipple - 1-1/4"	1	1 (.5)
2315021026	Flowmeter adjustment tool	1	1 (.5)
2315021027	Regulation valve assembly w/seals	1	1 (.5)
2315021028	Regulation valve cap	1	1 (.5)
2315021029	Mounting bracket assembly - 1"	1	1 (.5)
2315021030	Mounting bracket assembly - 1-1/4"	1	2 (1.0)

Manifolds



CM Manifolds Sets

- Modular, large bore manifolds (1 1/2") constructed of glass-fibre reinforced polyamide. (PA66 GF30 black)
- System includes supply and return manifolds with 1 1/2" ball valves, temperature gauges, fill/drain valves, automatic air vents and mounting brackets.
- Supply manifolds include adjustable flowmeters and flow valves. (5 gpm max)
- Return manifolds include manual shut off valves and assemblies for electronic actuator attachment.
- Optional pressure gauge available when required.
- Supply and return manifold segments can be easily added or removed in the field.

CM Manifolds

<i>Part #</i>	<i>Description</i>	<i>Stations/ Loops</i>	<i>Shipping Length (in) (mm)</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2315005102	CM Manifold Set 1 1/2" x 2 Loop	2	16x16x16	1	6 (2.3)
2315005103	CM Manifold Set 1 1/2" x 3 Loop	3	16x16x16	1	6 (2.3)
2315005104	CM Manifold Set 1 1/2" x 4 Loop	4	16x16x16	1	6 (2.3)
2315005105	CM Manifold Set 1 1/2" x 5 Loop	5	16x16x16	1	8 (3.7)
2315005106	CM Manifold Set 1 1/2" x 6 Loop	6	16x16x16	1	12 (5.5)
2315005107	CM Manifold Set 1 1/2" x 7 Loop	7	16x16x16	1	15 (6.9)
2315005108	CM Manifold Set 1 1/2" x 8 Loop	8	16x16x16	1	15 (6.9)
2315005109	CM Manifold Set 1 1/2" x 9 Loop	9	16x16x16	1	18 (8.2)
2315005110	CM Manifold Set 1 1/2" x 10 Loop	10	16x16x16	1	20 (9.1)
2315005111	CM Manifold Set 1 1/2" x 11 Loop	11	16x16x16	1	20 (9.1)
2315005112	CM Manifold Set 1 1/2" x 12 Loop	12	16x16x16	1	23 (10.5)
2315005113	CM Manifold Set 1 1/2" x 13 Loop	13	16x16x16	1	23 (10.5)
2315005114	CM Manifold Set 1 1/2" x 14 Loop	14	16x16x16	1	25 (11.4)
2315005115	CM Manifold Set 1 1/2" x 15 Loop	15	26x20x12	1	25 (11.4)
2315005116	CM Manifold Set 1 1/2" x 16 Loop	16	26x20x12	1	28 (12.8)
2315005117	CM Manifold Set 1 1/2" x 17 Loop	17	26x26x12	1	28 (12.8)
2315005118	CM Manifold Set 1 1/2" x 18 Loop	18	26x26x12	1	30 (13.7)
2315005119	CM Manifold Set 1 1/2" x 19 Loop	19	26x26x12	1	30 (13.7)
2315005120	CM Manifold Set 1 1/2" x 20 Loop	20	26x26x12	1	30 (13.7)

Manifolds

CM Manifold Accessories

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2315005001	Manifold kit 1, supply & return, w/ flow	1	1 (.5)
2315005002	Manifold kit 2, supply & return, w/ flow	1	1 (.5)
2315005003	Manifold kit 3, supply & return, w/ flow	1	2 (1)
2315005004	Manifold kit 4, supply & return, w/ flow	1	2 (1)
2315005005	Manifold kit 5, supply & return, w/ flow	1	3 (1.5)
2315005006	Manifold kit 6, supply & return, w/ flow	1	3 (1.5)
2315005007	Bracket expansion kit (1) Tall (1) Short	1	3 (1.5)
2315005008	CM Manifold Set Pressure Gauge	1	1 (.5)
2315005009	Ball Valve Set G 1-1/2BSP M x 1-1/2NPT F (NO GASKETS)	1	1 (.5)
2315005010	Thermometer set	1	1 (.5)
2315005011	Purge/drain valve set	1	1 (.5)
2315005012	End cap set	1	1 (.5)
2315005013	Plastic hydronic air vent set, G ½	1	1 (.5)
2315005014	Cross piece set w/ fittings, gasket, nut	1	1 (.5)
2340045217	Pressure Tester for 1-1/2" CM Manifolds	1	1 (.5)
2335000354	Manifold Loop Cap	1	1 (.5)
2315005000	Basic Kit (includes (1) tall bracket expansion kit, (1) short bracket expansion kit, (2) end caps, (2) purge drain valves, (2) thermometers, (2) cross pieces w/ fittings, flat gaskets and swivel nuts, (8) screw and plastic anchor sets	1	2 (1)

Tubing Fitting Assemblies for PERT/PEX Tubing

- R20 (Nominal 3/4") threaded euroconical brass compression fittings
- Attaches various types and size tubing to manifold branch outlets

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2335001410	for 3/8" PE-RT/PEX Tubing	10	1 (0.5)
2350003021	for 1/2" PE-RT/PEX Tubing	10	1.5 (0.7)
2350003022	for 5/8" PE-RT/PEX Tubing	10	2 (0.9)
2335001034	for 3/4" PE-RT/PEX Tubing	2	1 (0.5)



Valve Actuator

- Allows one manifold set to supply multiple zones;
- Thermostat controlled • 24 V • 4 wire: 2 - power, 2 - end switch
- Multiple actuators can be wired together
- Normally closed - pop up indicates activation;
- Attaches to return manifold
- Cycle time - 3 minutes

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340055354	Valve Actuator	1	1 (0.5)

Manifolds

Brass Transition Fittings using Manifold Tubing Fitting Assemblies

Double Threaded Nipple for Couplings

- Creates standard, reducing or transition coupling



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2335000930	Double Threaded Nipple, R20 (Nominal 3/4") <i>*Fitting sets not included*</i>	1	0.12 (0.05)

Copper Sweat Transition Couplings

- Connects X-PERT S5, DuoPex S5, or AluLaser Plus to copper tubing



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340013285	R20 (Nominal 3/4") Threaded Nipple x 1/2" Female Sweat or 3/4" Male Sweat <i>*Fitting sets not included*</i>	1	0.5 (0.03)

Copper Manifolds and Accessories - Commercial

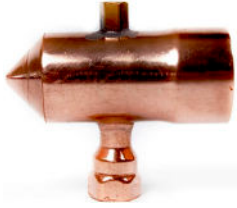
Manifold



- Type L Copper
- One end is copper male; other end is flared for copper female
- Can be combined to make longer manifolds
- 6 - 3/4" copper branches 3" on center
- Maximum Flow Rates @ 4 ft./sec.:
1 1/2" – 22 gpm; 2" – 38.5 gpm; 3/4" – 6 gpm

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340012419	1 1/2" Manifold w/ 6 Branches	1	2 (0.9)
2340012429	2" Manifold w/ 6 Branches	1	3 (1.4)

Manifolds



End Cap for Manifold Trunk

- Type L Copper
- Designed to work with copper manifolds
- One end flared for copper female; other end spun closed
- 1/8" tap for Vent*, 1/2" tap for Drain Valve* (*Field Supplied)

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340012329	1 1/2" End Cap with Taps for Vent and Drain	1	1 (0.5)
2340012339	2" End Cap with Taps for Vent and Drain	1	1 (0.5)

Mini-Ball Valves for Copper Branches

- For use with PE-RT/ PEX tubing
- Plated brass body
- Zinc coated handle
- Teflon, Viton & EDPM seals



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
Without balancing valves			
2340015213	3/4" Female Sweat x 1/2" Compression	1	1 (0.5)
2340015214	3/4" Female Sweat x 5/8" Compression	1	1 (0.5)
2340015215	3/4" Female Sweat x 3/4" Compression	1	1 (0.5)
With balancing valves			
2340015113	3/4" Female Sweat x 1/2" Compression	1	1 (0.5)
2340015114	3/4" Female Sweat x 5/8" Compression	1	1 (0.5)
2340015115	3/4" Female Sweat x 3/4" Compression	1	1 (0.5)



Pressure Tester

- 0 - 100 psi Gauge
- 3/4" Copper Male Adaptor
- 1/4" Schrader Valve

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340045214	Pressure Tester	1	1 (0.5)

Manifolds

Manifold Cabinets

Recessed and Surface Mount Manifold Cabinet for RSS Manifolds

- Designed to enclose Roth RSS manifold sets (will fit HK/HKV as well)
- Constructed of galvanized steel and powder-coated white
- Side panels have knockouts for supply and return piping
- Bottom panel is open to allow loop leaders to be attached to the manifold
- Two vertical manifold mounting rails slide along horizontal rails at the top and bottom
- Front panel includes non-keyed locked (key locks to be field supplied)
- Recessed RSS Cabinet Only: Adjustable feet can raise cabinet 1-1/2" to 4-1/2" off the floor



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Dimension (in) W x H x D*</i>	<i>Weight lbs (kg)</i>
2315022000	Recessed Mount for RSS Small - up to 6 Loops	1	22x26x4.5-6.7	20 (9.1)
2315022001	Recessed Mount for RSS Small - up to 8 Loops	1	27x26x4.5-6.7	30 (14)
2315022002	Recessed Mount for RSS Large - up to 12 Loops	1	41x26x4.5-6.7	40 (18)

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Dimension (in) W x H x D*</i>	<i>Weight lbs (kg)</i>
2315022003	Surface Mount for RSS Small - up to 4 Loops	1	24x26x5	20 (9.1)
2315022004	Surface Mount for RSS Large - up to 8 Loops	1	30x26x5	30 (14)
2315022005	Surface Mount for RSS Large - up to 12 Loops	1	43x26x5	40 (18)

*

Surface Mount Manifold Cabinet for CM Manifolds

- Designed to enclose Roth CM manifold sets
- Constructed of 17 gauge steel without primer coating
- Hood design - no rear or bottom panel
- Side panels have knockouts for supply lines
- Rear tabs with cut-outs for attaching to wall
- Front panel is removeable and includes keyed lock
- Not height-adjustable or depth-adjustable



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Dimension (in) W x H x D*</i>	<i>Weight lbs (kg)</i>
2315005200	Surface Mount for CM - 5 Loop	1	32x28x7	20 (9.1)
2315005201	Surface Mount for CM - 17 Loop	1	64x28x7	30 (14)
2315005202	Surface Mount for CM - 20 Loop	1	95x28x7	40 (18)

*Consult submittal for most accurate cabinet dimensions.

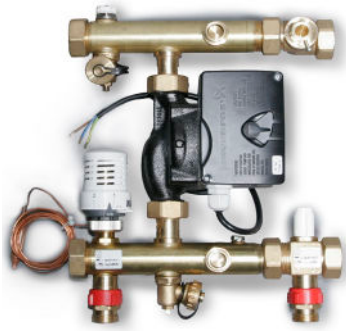
Section 4 - Mixing Stations

Thermostatic Mixing Station.....18

Mini Mixing Station.....18

Mixing Stations

Thermostatic Manifold Mixing Station



- Used together with the HK or HKV Manifold Sets to provide a preset mixed temperature to a radiant zone in a pre-piped package.
- Thermostatic valve controls high temperature supply fluid from primary system to achieve a preset lower supply temperature to secondary (radiant) system.
- Components:
 - Grundfos UPS 15-58 UC 3-speed circulator with power cord
 - Thermostatic control valve with capillary sensor on manifold supply
 - Shut off valves on system supply & return
 - Flowmeter for adjustment of primary system flow to shunt
 - Manual air vent
 - Drain valves (2)
 - Temperature gauges on manifold supply & return

Connects to the main system with 3/4" R20 Tubing Fitting Assembly. (See page 15)

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2371000004	Thermostatic Mixing Station	1	17 (7.7)

Mini Mixing Station



- Self contained radiant zone system for a 1 or 2 loop radiant installation
- Can be used to provide low temperature radiant heat to a small space from a high temperature system such as baseboard
- Components:
 - 1 Loop supply and return header
 - Optional adaptor to increase to 2 loops
 - Circulator, 120 V, with plug in cord
 - Remote capillary bulb room temperature sensor
 - Mixing Valve
 - Non-Electric Thermostatic Controller
- Connects to main system using 1/2" copper compression fittings
- Connects to radiant tubing using Manifold Tubing Fitting Assemblies (not included)(see page 15)

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2375000103	Mini Mixing Station for 1 loop 1/2" connections	1	6 (2.7)
2372100020	2 loop adaptor	1	0.5 (0.3)

Section 5 - PE-RT/PEX Fittings and Tools

Compression Fittings.....20

Barbed Fittings.....21

Valves.....23

Clamps.....24

Tools.....24

Tubing Repair Kits.....24

PE-RT/PEX Fittings and Tools

PE-RT/PEX Compression fittings

Couplings



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2335003238	3/4" PE-RT/PEX x 3/4" PE-RT/PEX	1	0.7 (0.3)
2335003236	1" PE-RT/PEX x 1" PE-RT/PEX	1	2 (0.9)

Couplings Using Tubing Fitting Assemblies (see page 15)

- Use with two Tubing Fitting Assemblies to create a standard or reducing coupling.



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2335000930	Double Threaded Nipple	1	0.2 (0.1)

Copper Transition Couplings Using Tubing Fitting Assemblies

- Connect any size* PE-RT/PEX tubing to 1/2" or 3/4" copper with use of Tubing Fitting Assemblies (see page 15). * 3/8", 1/2", 5/8" or 3/4"



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340013285	R20 (Nominal 3/4") Euroconical compression fittings x 1/2" female sweat/ 3/4" male sweat	1	0.5 (0.3)

Transition Couplings to Copper Sweat



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2335002334	3/4" PE-RT/PEX x 3/4" female sweat/ 1" male sweat	2	1 (0.5)
2335002333	1" PE-RT/PEX x 1" female sweat/ 1 1/4" male sweat	2	1 (0.5)

Baseboard Fittings



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340009000	1/2" PE-RT/PEX x 1/2" Female Sweat	2	1 (0.5)
2340009001	1/2" PE-RT/PEX x 3/4" Female Sweat	2	1 (0.5)
2340009002	5/8" PE-RT/PEX x 3/4" Female Sweat	2	1 (0.5)
2340009003	3/4" PE-RT/PEX x 3/4" Female Sweat	2	1 (0.5)
2340009005	1/2" PE-RT/PEX x 1/2" Male Sweat	2	1 (0.5)
2340009006	5/8" PE-RT/PEX x 3/4" Male Sweat	2	1 (0.5)
2340009007	3/4" PE-RT/PEX x 3/4" Male Sweat	2	1 (0.5)

PE-RT/PEX Fittings and Tools

Barbed Fittings

Barbed fittings meet ASTM F1807 standards

Female Threaded Adaptors



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2350335663	1/2" barb x 1/2" FPT	10	1 (0.5)
2350335673	1/2" barb x 3/4" FPT	10	1 (0.5)
2350335684	3/4" barb x 3/4" FPT	10	1 (0.5)
2350335694	1" barb x 1" FPT	10	1 (0.5)

Male Threaded Adaptors



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2350535755	3/8" barb x 1/2" MPT	10	1 (0.5)
2350535756	1/2" barb x 1/2" MPT	10	1 (0.5)
2350535757	1/2" barb x 3/4" MPT	10	1 (0.5)
2350535765	3/4" barb x 1/2" MPT	10	1 (0.5)
2350535766	3/4" barb x 3/4" MPT	10	1 (0.5)
2350535767	3/4" barb x 1" MPT	10	1 (0.5)
2350535775	1" barb x 3/4" MPT	10	1 (0.5)
2350535776	1" barb x 1" MPT	10	1 (0.5)

Female Sweat Adaptors



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2350534550	1/2" barb x 1/2" Female Sweat	10	1 (0.5)
2350534560	3/4" barb x 3/4" Female Sweat	10	1 (0.5)
2350834570	1" barb x 1" Female Sweat	10	1 (0.5)
2350324664	1/2" barb to 3/4" Female Sweat	10	1 (0.5)

Male Sweat Adaptors



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2350534437	3/8" barb x 1/2" Male Sweat	10	1 (0.5)
2350534438	1/2" barb x 1/2" Male Sweat	10	1 (0.5)
2350534539	3/4" barb x 3/4" Male Sweat	10	1 (0.5)
2350534540	1" barb x 1" Male Sweat	10	1 (0.5)
2350324674	1/2" barb to 3/4" Male Sweat	10	1 (0.5)

PE-RT/PEX Fittings and Tools

Couplings



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2350242023	3/8" barb	10	1 (0.5)
2350343024	1/2" barb	10	1 (0.5)
2350454025	5/8" barb	10	2 (0.9)
2350444023	3/4" barb x 1/2" barb	10	2 (0.9)
2350444025	3/4" barb	10	2 (0.9)
2350545024	1" barb x 3/4" barb	10	2 (0.9)
2350545026	1" barb	10	2 (0.9)



90° Elbows

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2350262023	3/8"x 3/8" barb	10	1 (0.5)
2350363024	1/2"x 1/2" barb	10	1 (0.5)
2350464025	3/4" x 3/4" barb	10	2 (0.9)
2350565026	1" x 1" barb	10	2 (0.9)



PEX/PE/RT x MPT Elbows 90°

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2350364026	1/2" barb x 1/2" MPT	10	2 (0.9)
2350363027	1/2" barb x 3/4" MPT	10	2 (0.9)
2350464026	3/4" barb x 3/4" MPT	10	2 (0.9)

Plugs



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2350202210	3/8" barb	10	1 (0.5)
2350202220	1/2" barb	10	1 (0.5)
2350202230	3/4" barb	10	1 (0.5)
2350202240	1" barb	10	2 (0.9)

PE-RT/PEX Fittings and Tools



Tees

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2350242033	3/8" x 3/8" x 3/8" barb	10	1 (0.5)
2350242034	3/8" x 3/8" x 1/2" barb	10	1 (0.5)
2350343035	1/2" x 3/8" x 3/8" barb	10	1 (0.5)
2350343036	1/2" x 3/8" x 1/2" barb	10	1 (0.5)
2350343037	1/2" x 1/2" x 3/8" barb	10	2 (0.9)
2350343038	1/2" x 1/2" x 1/2" barb	10	2 (0.9)
2350343039	1/2" x 1/2" x 3/4" barb	10	2 (0.9)
2350443035	3/4" x 1/2" x 1/2" barb	10	2 (0.9)
2350443036	3/4" x 1/2" x 3/4" barb	10	2 (0.9)
2350443037	3/4" x 3/4" x 1/2" barb	10	2 (0.9)
2350444036	3/4" x 3/4" x 3/4" barb	10	2 (0.9)
2350444037	3/4" x 3/4" x 1" barb	10	3 (1.4)
2350544035	1" x 3/4" x 3/4" barb	10	3 (1.4)
2350545036	1" x 1" x 1/2" barb	10	3 (1.4)
2350545037	1" x 1" x 3/4" barb	10	3 (1.4)
2350545038	1" x 1" x 1" barb	10	3 (1.4)



Transition Tees

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2350545133	1/2" barb x 1/2" barb X 1/2" MPT	10	2 (0.9)
2350545144	3/4" barb x 3/4" barb X 1/2" MPT	10	3 (1.4)



PE-RT/PEX in-line Ball Valves

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2350373273	1/2" PE-RT/PEX in-line ball valve	10	3 (1.4)
2350474274	3/4" PE-RT/PEX in-line ball valve	10	3 (1.4)

PEX/PE-RT Fittings and Tools

HDSS PE-RT/PEX Clamps

- HDSS PE-RT/PEX Clamps meet ASTM F2098 standards



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2350303373	3/8" HDSS PE-RT/PEX Clamp	100	1 (0.5)
2350303371	1/2" HDSS PE-RT/PEX Clamp	100	1 (0.5)
2350303375	5/8" HDSS PE-RT/PEX Clamp	100	1 (0.5)
2350303372	3/4" HDSS PE-RT/PEX Clamp	100	1 (0.5)
2350303374	1" HDSS PE-RT/PEX Clamp	100	1 (0.5)

Standard HDSS PE-RT/PEX Clamp Tool - 12"



- Use with 3/8" - 3/4" HDSS PE-RT/PEX Clamps

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2350505771	Standard HDSS PE-RT/PEX Clamp Tool	1	2 (0.9)

Large Diameter HDSS PE-RT/PEX Clamp Tool - 14.5"



- Use with 3/8" - 1" HDSS PE-RT/PEX Clamps

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2350505772	Large Diameter HDSS PE-RT/PEX Clamp Tool	1	3 (1.4)

Tubing Cutter



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2350505380	For 3/8" - 1" PE-RT/PEX	1	1 (0.5)
2350505390	Spare blade	1	0.5 (.3)



PE-RT/PEX Tubing Repair Kits

- Includes (4) barbed couplings, (8) HDSS F2098 PE-RT/PEX clamps, and (1) 2' Heat Shrink Sleeve

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340090030	Repair Kit for 1/2" PE-RT/PEX Tubing	1	1 (0.5)
2340090032	Repair Kit for 3/4" PE-RT/PEX Tubing	1	1 (0.5)
2340090031	Repair Kit for 5/8" PE-RT/PEX Tubing	1	1 (0.5)

Section 6 - Installation Accessories

Tubing Uncoiler.....26

Plastic Cable Ties.....26

Plastic Sleeve Elbows.....26

Metal Bend Supports.....26

Heat Shrink Sleeve.....27

Foam Board Stapler.....27

Foam Board Stapler Counter Weight.....27

Foam Board Plastic Staples.....27

Pneumatic Staple Gun and Staples.....27

Octa Rail.....28

Infrared Thermometer.....28

Thermo-Fin Hole Punch Kit.....28

Installation Accessories



Fireman Battalion 61 Tubing Uncoiler

- 603 Aluminum channel, Zinc chromate plated steel
- Stainless steel; upper and lower needle roller bearings
- Hardened steel washers
- 1/2" solid 6061 reinforcement bars at all center channel sections
- Neoprene lower bearing seal/friction brake (factory preset)
- Compatible with all Roth tubing products

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340095317	Battalion Tubing Uncoiler	1	27 (12.3)



Plastic Cable Ties

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2335000364	Plastic Cable Ties 8"	100	0.5 (0.3)



Plastic Sleeve Elbows

- Used to protect tubing when transitioning in and out of concrete or gypsum based slab

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340032104	Plastic Sleeve Elbows for 3/8" - 5/8"	10	1 (0.5)
2350464411	Plastic Sleeve Elbows for 3/4" - 1"	10	6 (2.8)



Metal Bend Supports

- Used to hold tubing in place on a 90° bend. Protects tubing from kinking

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340032302	Metal Bend Support for 3/8"	10	1 (0.5)
2340032303	Metal Bend Support for 1/2"	10	2 (0.9)
2340032304	Metal Bend Support for 5/8"	10	1 (0.5)

Installation Accessories

Heat Shrink Sleeve

- Used to protect repair couplings in concrete



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340090020	Heat Shrink Sleeve-length of 4' - for up to 10 couplings	1	1 (0.5)

Foam Board Stapler

- Used to attach tubing to foam board insulation
- Loads with plastic staples on paper strips
- Works in a similar manner as a standard hand-held paper stapler



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2315001344	Foam Board Stapler w/ Counter Weight	1	8 (3.6)
2340021033	Replacement Counter Weight	1	2 (0.9)

Foam Board Plastic Staples

- Designed to accommodate tubing sizes from 3/8" to 5/8"
- Features arrow - like ends which firmly hold the tubing in place



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2335000254	Foam Board Plastic Staples 1-1/2" long for 1/2" or 5/8" tubing	300	1.5 (0.7)
2335000255	Foam Board Plastic Staples 1" long for 1/2" or 5/8" tubing	300	1.3 (0.6)

Pneumatic Staple Gun and Staples

- Used to attach tubing to top or bottom of sub-flooring
- Includes front and rear blocks and extension handle



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340098314	Pneumatic Staple Gun	1	10 (4.5)
2340025124	Staples; 1-1/4"	10,000	30 (13.6)
2340025224	Staples, 1-1/4"	1,650	5 (2.3)

Installation Accessories

Octa Rail



- Plastic strip designed to hold PE-RT, PEX and AluLaser Plus tubing in place during a concrete or gypsum based pour
- Strip size – 3.3' (1 m) l x 1.25" (3.2 cm) h
- Strips interlock end to end
- Alternating tubing sockets of 1/2" or 3/8" and 5/8" or 3/4" on 4" centers
- Fastened to wood or concrete by use of appropriate nails, screws or adhesive
- Pour must be a minimum of 3"
- Formula for determining project quantity: Square footage of floor divided by 11

<i>Part #</i>	<i>Description</i>	<i>Pkg</i>	<i>Weight</i>
		<i>Qty</i>	<i>lbs (kg)</i>
2340030123	Octa Rail for 3/8", 1/2", 5/8", 3/4" Tubing	30	15 (6.8)



Infrared Thermometer

- °F or °C display
- Used for determining ΔT , surface temperatures, supply fluid temperatures, etc.
- May not provide accurate results on materials with low emissivity. i.e. copper, aluminum

<i>Part #</i>	<i>Description</i>	<i>Pkg</i>	<i>Weight</i>
		<i>Qty</i>	<i>lbs (kg)</i>
2340001000	Infrared Thermometer	1	1 (0.5)



Thermo-Fin Hole Punch Kit

- Used to punch holes in Thermo-fin aluminum plates

<i>Part #</i>	<i>Description</i>	<i>Pkg</i>	<i>Weight</i>
		<i>Qty</i>	<i>lbs (kg)</i>
2340031111	Hole Punch Kit (use on T-Fin)	1	4 (1.8)

Section 7 - Hydronic Valves

Differential Pressure By-Pass Valve.....30

Thermostatic Mixing Valve.....30

Injection Valve Body.....31

Injection Valve Controller.....31

Zone Valves.....32

Zone Valve Actuator.....32

Zone Valve Body.....32

3-way Mixing Valves.....33

4-way Mixing Valves.....33

3 & 4-way Mixing Valve Actuators.....33

Mixing Valve Controller Kit.....33

Hydronics Specialties



Differential Pressure By-Pass Valve

- Self-acting automatic by-pass control primarily used to control the differential pressure in a heating system using zone valves.
- Opens on rising differential pressure
- Setting range of 0.725 - 7.25 psi (0.05 - 0.5 bar)
- Max. Pressure - 145 psi (10 bar)
- Max. Temperature - 248 °F (120° C)

The differential pressure by-pass valve is used in systems with a fixed speed circulating pump supplying several zones controlled by two way zone valves. As zone valves begin to close, the head pressure created by the circulating pump will increase in the remaining open zones. This valve is piped between the supply and return headers and will open to reduce the excess pressure, thus protecting the zone valves from damage and eliminating water hammer noise.

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340052155	Differential Pressure By-Pass Valve; (3/4" Union Male NPT)	1	2 (0.9)
2340052156	Differential Pressure By-Pass Valve; (1" Union Male NPT)	1	3 (1.4)



Thermostatic Mixing Valve

- Dual-purpose mixing or diverting valve
- Fail-safe on hot or cold supply failure
- Delivers stable mixed water temperature
- ASSE 1017 Certified
- High flow – Cv – 3.8; max. flow – 24 gpm
- Low head loss
- Lockable handle
- Extended temperature range: 85° - 150° F
- 1" copper female sweat union connectors

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340073356	Thermostatic Mixing Valve 1" Sweat	1	2 (0.9)

Hydronics Valves



Injection Valve Controller

- Used with injection valve body (below) to inject a specific flow rate of high temperature fluid to be mixed with return fluid from a radiant zone to provide required supply temperature to zone.
- Operating Range: 104°F - 158°F (40°C - 70°C)

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340084016	Injection Valve Controller with Capillary Sensor	1	1 (0.5)



Injection Valve Body

- Used with controller (above) to inject a specific flow rate of high temperature fluid to be mixed with return fluid from a radiant zone to provide required supply temperature to zone.
- An easy, cost effective way to design and operate a radiant system

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340053075	Injection Valve Body 3/4" NPT	1	2(0.9)
2340053076	Injection Valve Body 1" NPT	1	3 (1.4)

Hydronics Valves



Zone Valves

- Valve includes Actuator and Valve body as described below
- 24 V, normally closed
- End switch (4 - wire)
- Pop-up indicator
- Open/close interval - 3 min.

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340955215	Zone Valve 3/4" Sweat	1	2(1.0)
2340955216	Zone Valve 1" Sweat	1	2(1.0)

Zone Valve Actuator



- Allows one manifold set to supply multiple zones
- Attaches to return manifold
- Thermostat controlled
- 24 V
- 4 wire: 2 - power, 2 - end switch
- Multiple actuators can be wired together
- Normally closed - pop up indicates activation
- Cycle time - 3 minutes
- Fits HK, HKV, NP, and CM manifolds

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340055354	Zone Valve Actuator with End Switch	1	1 (0.5)

Zone Valve Body

- Works with actuator to regulate flow to a zone.
- Brass



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340055215	Zone Valve Body 3/4" Sweat	1	1 (0.5)
2340055216	Zone Valve Body 1" Sweat	1	1 (0.5)

Hydronics Valves

3-Way Mixing Valves



- Special Alloy Brass (DZR)
- Easy manual operation
- Slender, compact design
- Easily automated with valve actuators listed below

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340084165	3-Way Mixing Valve 3/4" FPT Cv - 7.3	1	1 (0.50)
2340084166	3-Way Mixing Valve 1" FPT Cv - 14	1	1 (0.50)
2340085167	3-Way Mixing Valve 1/4" FPT Cv - 21	1	2 (0.9)

4 - Way Mixing Valves



- Special Alloy Brass (DZR)
- Easy manual operation
- Used when boiler protection is required
- Slender, compact design
- Easily automated with valve actuators listed below

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340074165	4-Way Mixing Valve 3/4" Sweat Cv - 7.3	1	1 (0.5)
2340074166	4-Way Mixing Valve 1" Sweat Cv - 14	1	1 (0.5)
2340075167	4-Way Mixing Valve 1 1/4" Sweat Cv - 21	1	2 (0.9)
2340075168	4-Way Mixing Valve 1 1/2" NPT Cv - 35	1	7 (3.2)
2340075169	4-Way Mixing Valve 2" NPT Cv - 50	1	12 (5.5)

3-Way and 4-Way Mixing Valve Actuators



Mixing Valve Actuator

- Floating 3-point signal
- Power Consumption – 2VA
- 24V
- Run Interval – 96 sec.

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340085288	3 & 4-way Mixing Valve Actuator	1	2 (0.9)

Mixing Valve Outdoor Reset Controller Kit



Kit Includes:

VM663 Valve Actuator

TC204-2S Outdoor Reset Controller w/ Digital Readout

- LCD Display
- Read and set values from a PC
- Permanent memory – no battery needed
- 3 sensor inputs
- Adaptive reset curve
- Multi-functional Control

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340085188	TC204-2S-M Outdoor Reset Controller Kit	1	4 (2.0)

Section 8 - Hydronic Controls

System and Zone Controls.....35

Snow Melt Controls.....36

Thermostats.....39

Control Accessories.....40

Roth offers all Tekmar products - contact us for more information.

Hydronic Controls

System Controls

One Stage Set Point Control T150



- A microprocessor-based control that can be programmed to maintain a fixed set point temperature by cycling a heating or cooling device using either a complete on-off or pulse width modulated (PWM) output control.
- Wide set point range, adjustable differential and time delay that makes it useable in many different applications.
- Digital LCD window normally shows the actual sensor temperature and can be used to view the set point as well as the other programmed settings.
- Universal sensor included

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340086374	One Stage Set-Point Control T150	1	1 (0.5)

Zone Controls - Switching Relays

Zone Controls/Relays



- Compatible with ANY brand of low voltage thermostat, including power stealing and WiFi
- Hinged cover
- Pump Exercising
- Post Purge
- Top, bottom and back conduit knockouts
- Indicator LED for each zone, priority, end switch
- Unlimited expansion and optional priority for DHW with override on 304P, 306P, 304V, 306V



<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340088009	One Zone Pump Relay 301P	1	5 (2)
2340088013	Four Zone Pump Relay - 304P	1	5 (2)
2340088014	Six Zone Pump Relay - 306P	1	5 (2)
2340088011	Four Zone Valve Control - 304V	1	5 (2)
2340088012	Six Zone Valve Control - 306V	1	5 (2)

Hydronic Controls

Snowmelt Controls

WiFi Snow Melting Control T670



- Operates hydronic and electric heating
- Equipment designed to melt snow and/or ice from roads and walkway surfaces.
- Works with the Snow/Ice Sensor 090 or Snow Sensor 095 to automatically detect snow or ice and operates a single boiler, steam valve, or electric cable to supply heat to the slab.
- Boiler return protection is provided to non-condensing boilers using a mixing valve or variable speed injection mixing pump.
- Mobile application allows for remote operation and monitoring of the snow melting system from anywhere in the world.

<i>Part #</i>	<i>Description</i>	<i>Pkg</i>	<i>Weight</i>
		<i>Qty</i>	<i>lbs (kg)</i>
2340088017	WiFi Snow Melting Control 670	1	4 (1.8)

Automatic Snowmelt Control T664



- Microprocessor-based two zone snow melting control capable of providing priority
- Operates either a floating action output, variable speed output or a modulating output (4 - 20 mA) to provide slab and boiler protection.
- Capable of staging and / or rotating either a single two stage boiler or two single stage boilers.
- Separate melting and idling setpoints for each zone
- Accommodates different slab construction types.

<i>Part #</i>	<i>Description</i>	<i>Pkg</i>	<i>Weight</i>
		<i>Qty</i>	<i>lbs (kg)</i>
2340087575	Automatic Snowmelt Control T664	1	1 (0.5)

Hydronic Controls

Snowmelt Controls



Snowmelt Control 654

- Designed to operate electric or hydronic equipment
- Residential and small commercial applications
- 24V
- Automatic snow / ice detection
- Supports both inslab & retrofit aerial sensors
- Idling
- Manual start with timer
- Snow melt zoning with priority
- Programmable schedule
- Tandem snow / ice detection
- Warm weather shut down
- EconoMelt
- Cold weather cut out
- Storm
- Slab protection
- Snow melt zone tracking

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340080000	Performance Snowmelt Control T654	1	2 (1)



Snowmelt Control 680

- BAS Capable
- 115V
- Designed to operate electric or hydronic equipment
- Automatic snow/ice detection
- Supports both inslab & retrofit
- Aerial sensors
- BACnet or Modbus
- Energy monitoring
- Tandem snow/ice detection
- Idling
- Storm
- EconoMelt
- Warm weather shut down
- Cold weather cut out
- Slab protection
- Exercising

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340088001	Designer Snowmelt Control T680	1	2 (1)

Hydronic Controls

Snowmelt Controls

Snowmelt Enable Kit T092



- Used together with the Snow Detector & Melting Control 664
- Remotely enables and disables the snow melting system
- Adjustable run time
- LED provides visual indication of operation

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340083000	Snowmelt Enable Kit T092	1	1 (0.5)

Snow/Ice Sensor



- Installs flush on slab surface when mounted into the Sensor Socket
- Measures slab temperature, sensor surface temperature and sensor surface moisture level.

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340046120	Snow/Ice Sensor T090 - 65 ft. (20m)	1	2 (0.9)
2340088006	Snow/Ice Sensor T094 - 208 ft. (63m)		

Snow/Ice Sensor Socket T091



The socket is designed to house the Snow / Ice Sensor and is installed directly into the snow melt slab halfway between the heating elements or pipes. An opening at the bottom of the socket is provided for wiring conduit.

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340035150	Snow/Ice Sensor Socket T091	1	2 (0.9)

Slab Sensor - 40 ft. Cable



- The Slab Sensor 073 is designed to measure temperature under outside snow melting slabs.
- It has a high density polyethylene (HDPE) sleeve which is designed for use in conduits, soils, or concrete, as it is suitable for direct burial.
- This product is supplied with 40 ft (12m) of 2-conductor cable.

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340088018	Slab Sensor T073	1	1 (0.5)

Hydronic Controls

Thermostats - Electronic Thermostats - Programmable

Programmable Thermostat w/ Floor Sensor



- Large back lit LCD display
- 24 V
- Heat only
- Field selectable 12 or 24 hour clock / °C or °F
- 7 - day, 4 time periods / day
- 2 temperature settings - pre-programmed or personalized schedule
- Early Start function – calculates optimum time to start heating to achieve desired temperature at set time.
- Temporary bypass enables temperature override without changing programming
- Battery free back up means no re-programming your schedule after a black out
- 3 control modes – Ambient air, floor, and ambient air & floor

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340077783	Programmable Thermostat with Floor Sensor Heat Only	1	1 (0.5)



WiFi Thermostat

- Floor sensor option for radiant systems
- Auxiliary air sensor option for large spaces
- Mobile app for iOS and Android
- Automatic software updates
- Outdoor temperature and weather display
- Email error and warning notifications
- Time clock updated from internet
- 7 day programmable schedule
- Away energy savings mode
- Early start
- Energy monitoring

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340088015	WiFi Thermostat - One Stage Heat T561	1	2 (1)
2340088016	WiFi Thermostat - Two Stage Heat, One Stage Cool, Fan T562	1	2 (1)

Hydronic Controls

Control Accessories

Transformer



- 120 V to 24 V
- 40 VA

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340067162	Transformer - 40 VA	1	2 (0.9)

Universal Temperature Sensor T071



- Brass sleeve
- 12" (300 mm) 20 AWG XLPE wire
- Operating range — -60° to 255° F (-50° to 125° C)
- Sensor — NTC thermistor, 10 k Ω @ 77° F (25° C $\pm$ 0.2° C), β =3892

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340043125	Universal Temperature Sensor T071	1	1 (0.5)

Slab Temperature Sensor T072



- 316 stainless steel sleeve
- 10' (3 m) 24 AWG, 300 volt PVC insulated zip cord
- Operating range — -60° to 255° F (-50° to 125° C)
- Sensor — NTC thermistor, 10 k Ω @ 77° F (25° C $\pm$ 0.2° C), β =3892

<i>Part #</i>	<i>Description</i>	<i>Pkg Qty</i>	<i>Weight lbs (kg)</i>
2340044125	Slab Temperature Sensor T072	1	1 (0.5)



Roth Industries
Roth North America Corporate Office
PO Box 245
Syracuse, NY 13211
P: 866-943-7256
F: 315-475-0200
www.roth-usa.com

Distributed By: