

# Rittling Cabinet Convector



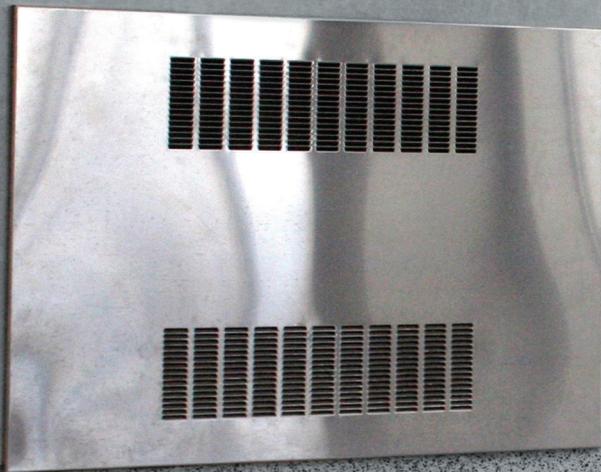
## Installation, Operation and Maintenance

Heating

Cooling

Fresh Air

Clean Air



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**IMPORTANT:** Submittal documentation, specific to each project, supersedes the general guidelines contained within this manual.

# Models

## Floor models



FL: Floor, flat top



SF: Floor, sloped top

## Wall models



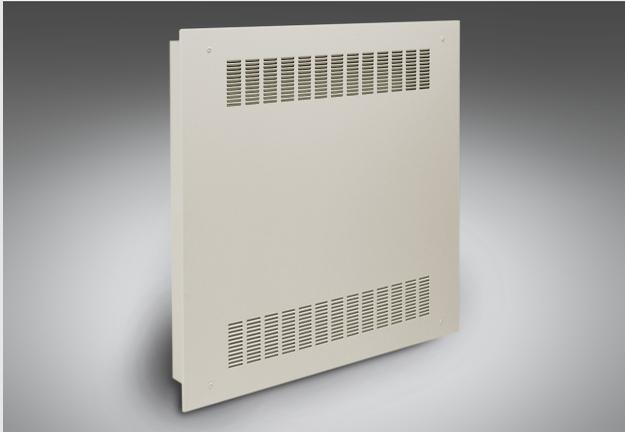
WL: Wall, flat top



RL: Wall, semi-recessed



SL: Wall, sloped top



PL: Wall, fully recessed

# Steam ratings

**Table 1: BTU/H (215 °F at 65 °F E.A.T.)**

Depth (in.)	Length (in.)	Type SL slope top wall mounted nominal heights				Type SF slope top free standing nominal heights			
		18	20	26	32	18	20	26	32
4	24	3936	4056	4248	4416	3600	3744	4080	4248
	28	4776	4896	5112	5304	4320	4488	4896	5112
	36	6456	6624	6936	7248	5904	6096	6624	6960
	40	7296	7488	7824	8112	6648	6864	7512	7848
	48	8952	9192	9600	9984	8136	8448	9192	9624
	52	9744	9936	10440	10848	8832	9144	9936	10440
	60	11400	11616	12192	12816	10248	10704	11616	12192
	64	12288	12528	13128	13920	10992	11544	12528	13176
6	24	6264	6432	6936	7176	5424	5736	6528	6960
	28	7560	7752	8328	8688	6528	6888	7752	8328
	36	10152	10464	11232	11616	8904	9336	10488	11280
	40	11448	11784	12648	13152	9984	10536	11808	12696
	48	14064	14448	15528	16104	12336	12888	14496	15576
	52	15288	15720	16896	17592	13536	14016	15720	16896
	60	17880	18360	19728	20568	15792	16344	18360	19728
	64	19224	19752	21216	22080	16848	17640	19776	21312
8	24	7776	8016	8640	9000	7200	7392	8064	8664
	28	9408	9648	10416	10824	8640	8880	9648	10416
	36	12720	13080	14112	14688	11760	12144	13776	14136
	40	14376	14784	15936	16584	13200	13656	14856	16008
	48	17664	18096	19560	20376	16320	16776	17760	19656
	52	19248	19752	21336	22224	17712	18192	19752	21336
	60	22512	23112	24960	26040	20736	21288	23112	24960
	64	24216	24888	26832	28008	22392	22992	24960	26928

**Table 2: Steam ratings in BTU/H (215 °F at 65 °F E.A.T.)**

Depth (in.)	Length (in.)	Front outlet nominal heights			
		18	20	26	32
4	24	2760	3120	3696	3984
	28	3312	3816	4464	4776
	36	4368	5136	6000	6480
	40	4896	5760	6768	7296
	48	5952	7080	8304	8952
	52	6552	7800	9072	9744
	60	7656	9120	10608	11400
	64	8136	9744	11376	12264
6	24	4032	4536	5520	6144
	28	4848	5520	6672	7368
	36	6432	7344	9000	9912
	40	7248	8328	10152	11184
	48	8880	10200	12432	13656
	52	9744	11064	13536	14904
	60	11400	13056	15840	17424
	64	12192	13992	17016	18744
8	24	5112	5712	6552	7080
	28	6384	6960	7896	8520
	36	8712	9312	10656	11520
	40	9864	10536	12024	12984
	48	11952	12960	14736	15984
	52	13464	14232	16104	17424
	60	15768	16656	18840	20376
	64	16776	17784	20256	21936

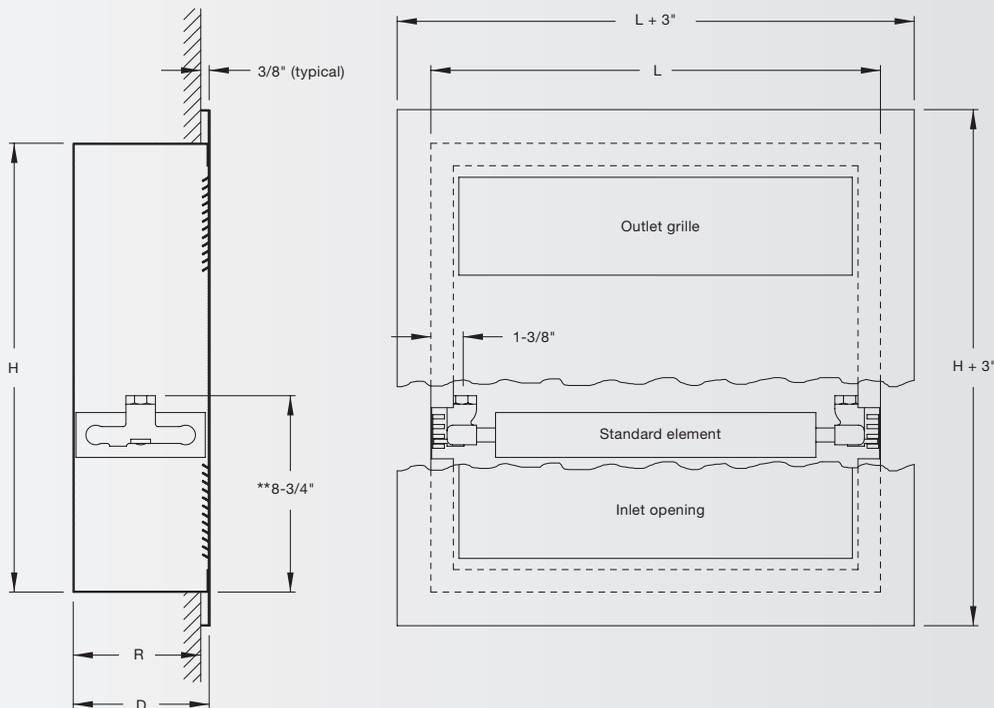
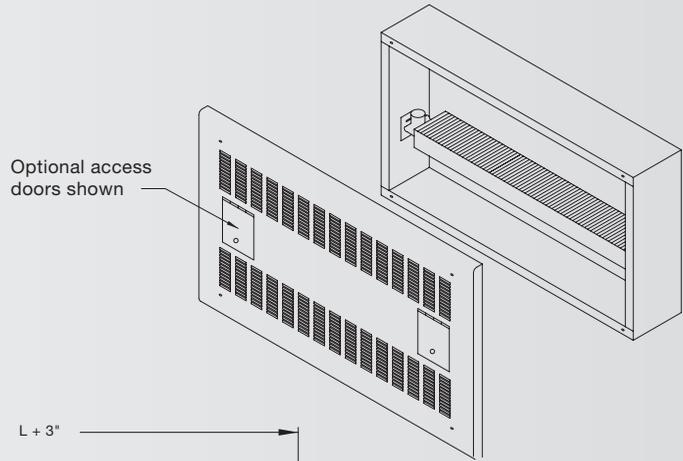
- Ratings above are based on open inlet, derating for inlet louvers is required, see catalog for derating factors
- For steam pressures other than 0.9, use correction factors found in catalog

# Dimensions and data

# Model PL Fully recessed wall

Nominal lengths (L)	Nominal heights (H)	Nominal depths (D)	Maximum dimension (R)
■ 24"	■ 18"	■ 4"	■ 3-3/4"
■ 28"	■ 20"	■ 6"	■ 5-3/4"
■ 36"	■ 26"	■ 8"	■ 7-5/8"
■ 40"	■ 32"		
■ 48"			
■ 52"			
■ 60"			
■ 64"			

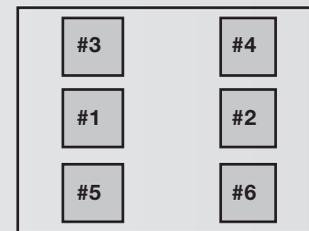
Any combination of length, height and depth is available.



### PL Convector Access Door Location Availability

Unit Height	Unit Lengths	# of Doors Available	Available Locations	Door Size
Less than 18"	All Lengths	0	No access door locations available	
18" to 19"	Less than 32"	1	3, 4, 5, 6	4"H x 5"W
18" to 19"	Less than 32"	2	3, 5 or 4, 6	4"H x 5"W
18" to 19"	32" and longer	4	3, 4, 5, 6	4"H x 5"W
20" to 25"	Less than 32"	1	1, 2, 3, 4, 5, 6	4"H x 5"W
20" to 25"	Less than 32"	2	1, 2 or 3, 5 or 4, 6	4"H x 5"W
20" to 25"	32" and longer	4	3, 4, 5, 6	5"H x 5"W
26" and over	Less than 32"	2	1, 2 or 3, 5 or 4, 6	5"H x 5"W
26" and over	Less than 32"	4	1, 2, 3, 5 or 1, 2, 4, 6	5"H x 5"W
26" and over	32" and longer	6	1, 2, 3, 4, 5, 6	5"H x 5"W

### Standard Convector Access Door Locations



#### Note:

- Access doors not available in locations 5 and 6 with arched inlet.
- \*Contact factory on heights less than 20"

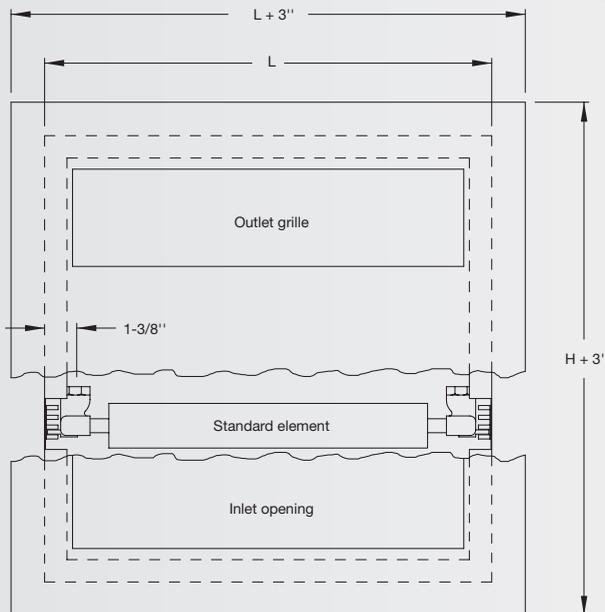
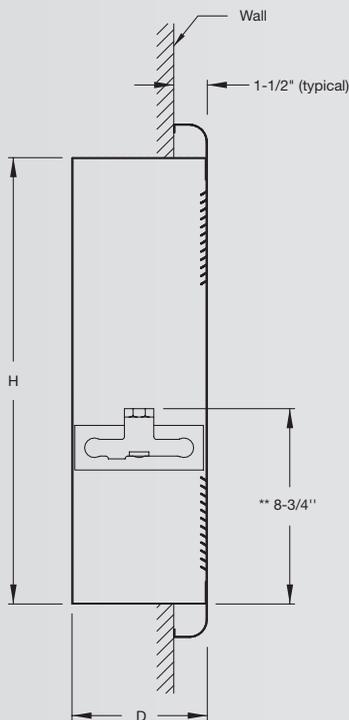
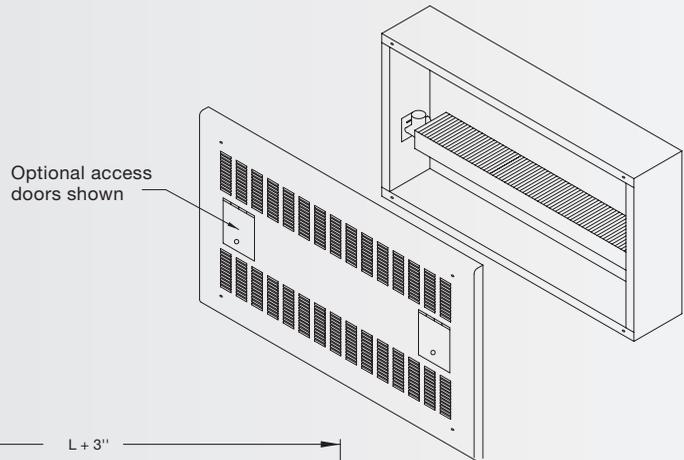
- For convectors less than 28" long, end pockets are not offered as standard. Consult factory for availability.
- \*\*The coil is adjustable 7/8" up in 7/16" increments.

# Dimensions and data

## Model RL Partially recessed wall

Nominal lengths (L)	Nominal heights (H)	Nominal depths (D)	Maximum dimension (R)
■ 24"	■ 18"	■ 4"	■ 3-3/4"
■ 28"	■ 20"	■ 6"	■ 5-3/4"
■ 36"	■ 26"	■ 8"	■ 7-5/8"
■ 40"	■ 32"		
■ 48"			
■ 52"			
■ 60"			
■ 64"			

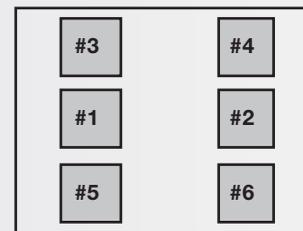
Any combination of length, height and depth is available.



### PL Convector Access Door Location Availability

Unit Height	Unit Lengths	# of Doors Available	Available Locations	Door Size
Less than 18"	All Lengths	0	No access door locations available	
18" to 19"	Less than 32"	1	3, 4, 5, 6	4"H x 5"W
18" to 19"	Less than 32"	2	3, 5 or 4, 6	4"H x 5"W
18" to 19"	32" and longer	4	3, 4, 5, 6	4"H x 5"W
20" to 25"	Less than 32"	1	1, 2, 3, 4, 5, 6	4"H x 5"W
20" to 25"	Less than 32"	2	1, 2 or 3, 5 or 4, 6	4"H x 5"W
20" to 25"	32" and longer	4	3, 4, 5, 6	5"H x 5"W
26" and over	Less than 32"	2	1, 2 or 3, 5 or 4, 6	5"H x 5"W
26" and over	Less than 32"	4	1, 2, 3, 5 or 1, 2, 4, 6	5"H x 5"W
26" and over	32" and longer	6	1, 2, 3, 4, 5, 6	5"H x 5"W

### Standard Convector Access Door Locations



#### Note:

- Access doors not available in locations 5 and 6 with arched inlet.
- \*Contact factory on heights less than 20"

- For convectors less than 28" long, end pockets are not offered as standard. Consult factory for availability.

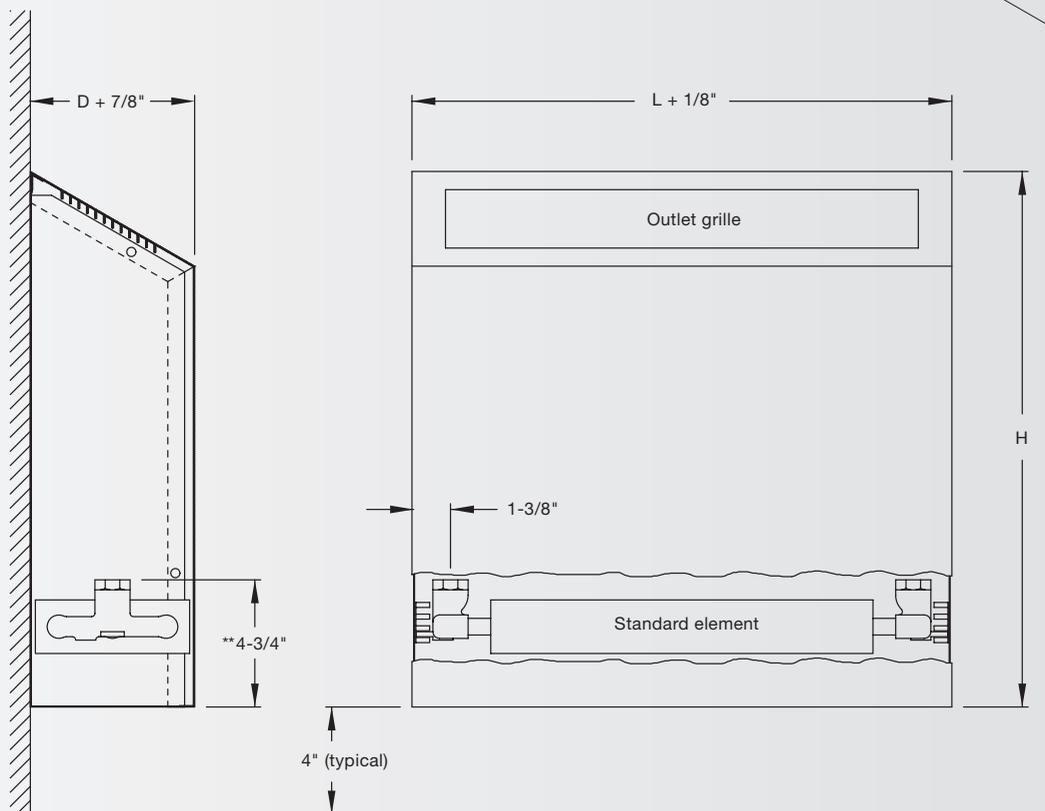
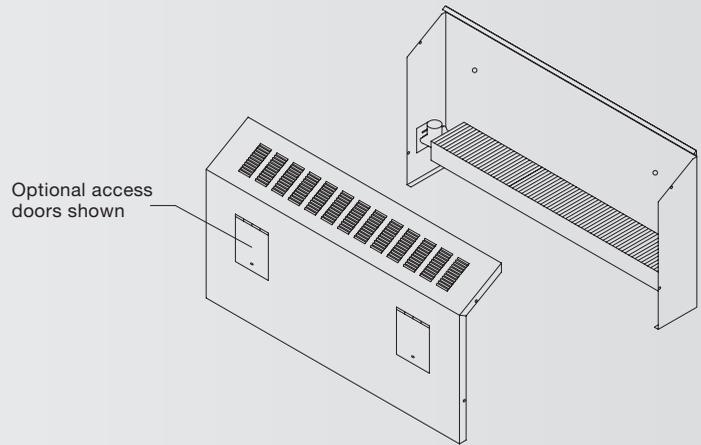
- \*\*The coil is adjustable 7/8" up in 7/16" increments.

# Dimensions and data

## Model SL Wall hung slope top

Nominal lengths (L)	Nominal heights (H)	Nominal depths (D)
■ 24"	■ 18"	■ 4"
■ 28"	■ 20"	■ 6"
■ 36"	■ 26"	■ 8"
■ 40"	■ 32"	
■ 48"		
■ 52"		
■ 60"		
■ 64"		

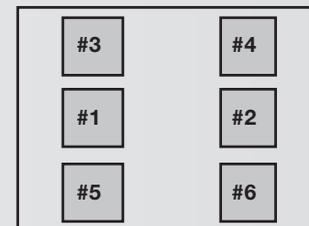
Any combination of length, height and depth is available.



### SL Convector Access Door Location Availability

Unit Height	Unit Lengths	# of Doors Available	Available Locations	Door Size
Up to 20"	All lengths	2	1, 2	4" H x 5" W
20" and over	All lengths	2	1, 2	5" H x 5" W

### Standard Convector Access Door Locations



**Note:**

- \*Contact factory on heights less than 20"
- \*\*The coil is adjustable 7/8" up in 7/16" increments.

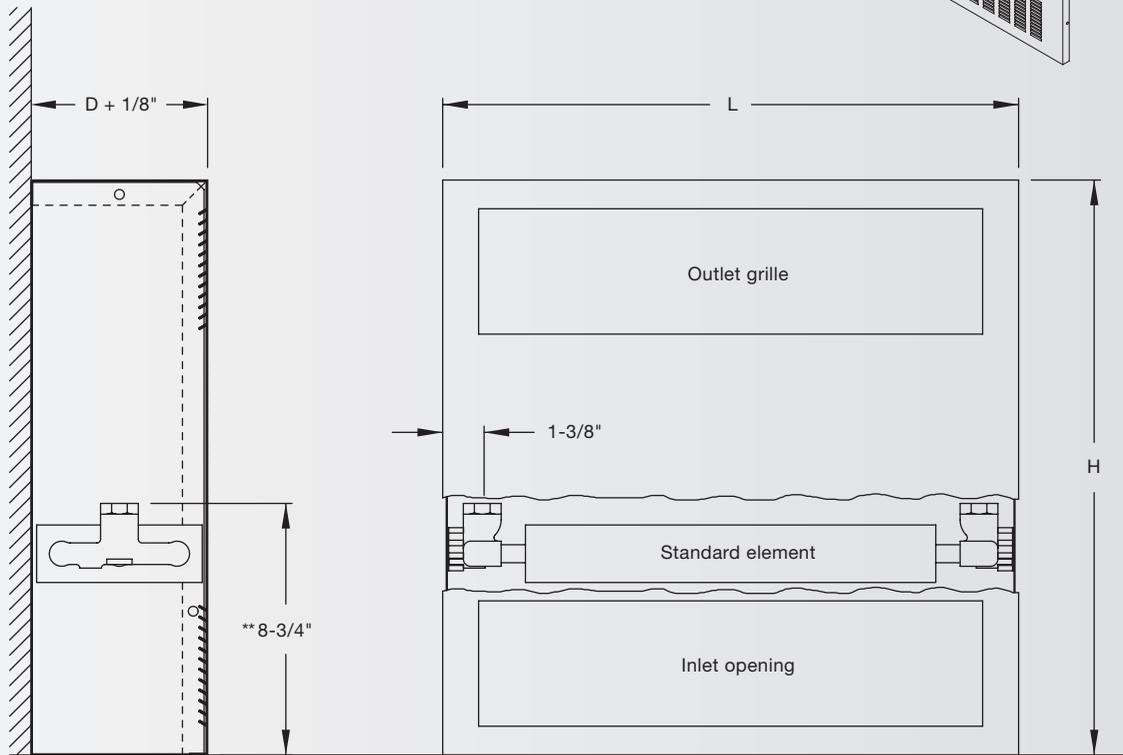
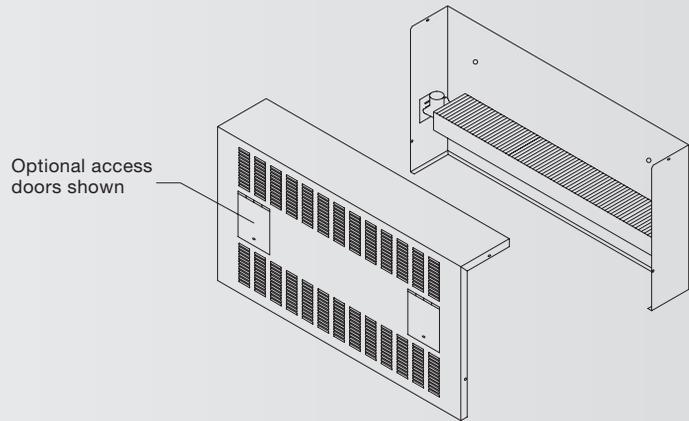
- For convectors less than 28" long, end pockets are not offered as standard. Consult factory for availability.

# Dimensions and data

## Model FL Free standing floor

Nominal lengths (L)	Nominal heights (H)	Nominal depths (D)
■ 24"	■ 18"	■ 4"
■ 28"	■ 20"	■ 6"
■ 36"	■ 26"	■ 8"
■ 40"	■ 32"	
■ 48"		
■ 52"		
■ 60"		
■ 64"		

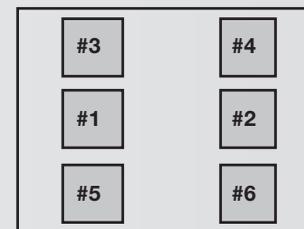
Any combination of length, height and depth is available.



### FL Convector Access Door Location Availability

Unit Height	Unit Lengths	# of Doors Available	Available Locations	Door Size
Up to 18"	Less than 32"	1	3, 4, 5, 6	4"H x 5"W
Up to 18"	Less than 32"	2	3, 5 or 4, 6	4"H x 5"W
Up to 18"	32" and longer	4	3, 4, 5, 6	4"H x 5"W
19"	Less than 32"	1	1, 2, 3, 4, 5, 6	4"H x 5"W
19"	Less than 32"	2	1, 2 or 3, 5 or 4, 6	4"H x 5"W
19"	32" and longer	4	1, 2, 5, 6	4"H x 5"W
20" and over	Less than 32"	2	1, 2 or 3, 5 or 4, 6	5"H x 5"W
20" and over	Less than 32"	4	1, 2, 3, 5 or 1, 2, 4, 6	5"H x 5"W
20" and over	32" and longer	6	1, 2, 3, 4, 5, 6	5"H x 5"W

### Standard Convector Access Door Locations



#### Note:

- Access doors not available in locations 5 and 6 with arched inlet.
- \*Contact factory on heights less than 20"

- For convectors less than 28" long, end pockets are not offered as standard. Consult factory for availability.

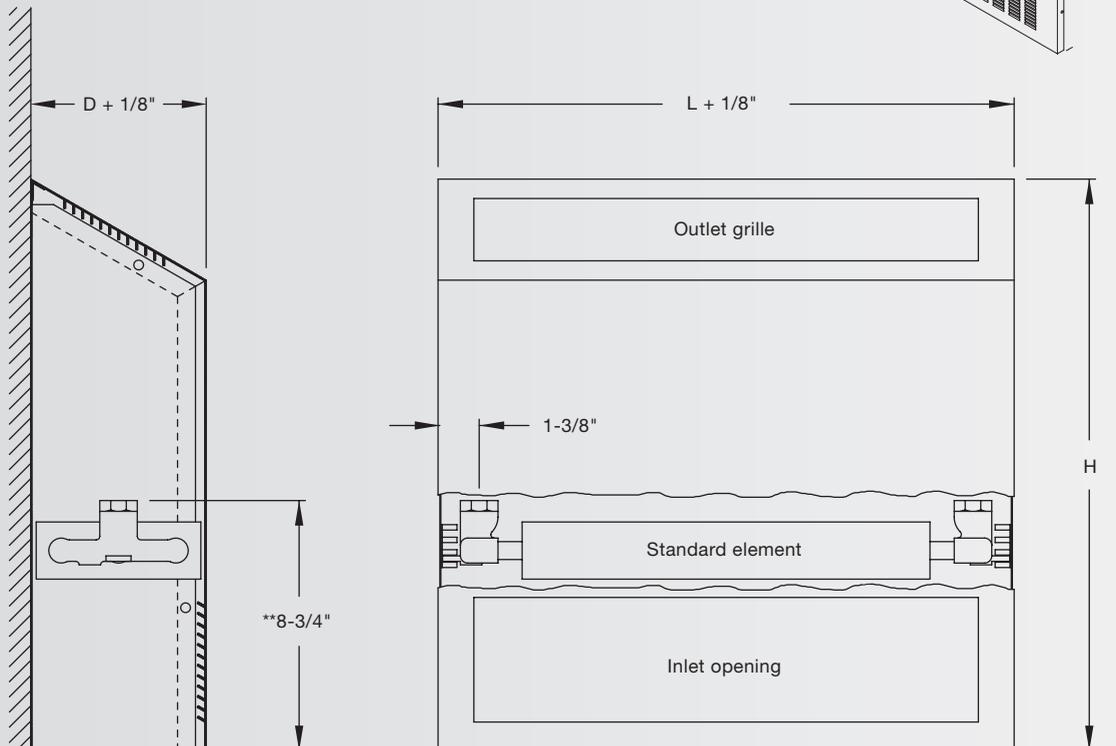
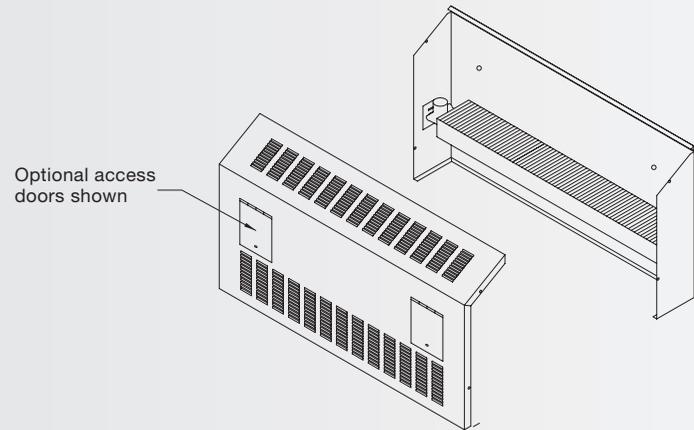
- \*\*The coil is adjustable 7/8" up in 7/16" increments.

## Dimensions and data

## Model SF Free standing slope top

Nominal lengths (L)	Nominal heights (H)	Nominal depths (D)
■ 24"	■ 18"	■ 4"
■ 28"	■ 20"	■ 6"
■ 36"	■ 26"	■ 8"
■ 40"	■ 32"	
■ 48"		
■ 52"		
■ 60"		
■ 64"		

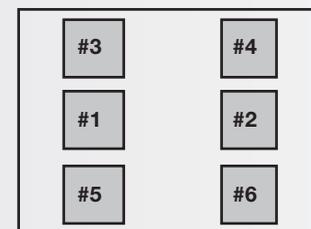
Any combination of length, height and depth is available.



### SF Convector Access Door Location Availability

Unit Height	Unit Lengths	# of Doors Available	Available Locations	Door Size
Up to 18"	Less than 32"	1	5 or 6	4"H x 5"W
Up to 18"	32" and longer	2	5, 6	4"H x 5"W
18" to 19"	Less than 32"	3	1, 2, 5 or 1, 2, 6	4"H x 5"W
18" to 19"	32" and longer	4	1, 2, 5, 6	4"H x 5"W
20" and over	Less than 32"	3	1, 2, 5 or 1, 2, 6	5"H x 5"W
20" and over	32" and longer	4	1, 2, 5, 6	5"H x 5"W

### Standard Convector Access Door Locations



#### Note:

- Access doors not available in locations 5 and 6 with arched inlet.
- \*Contact factory on heights less than 20"

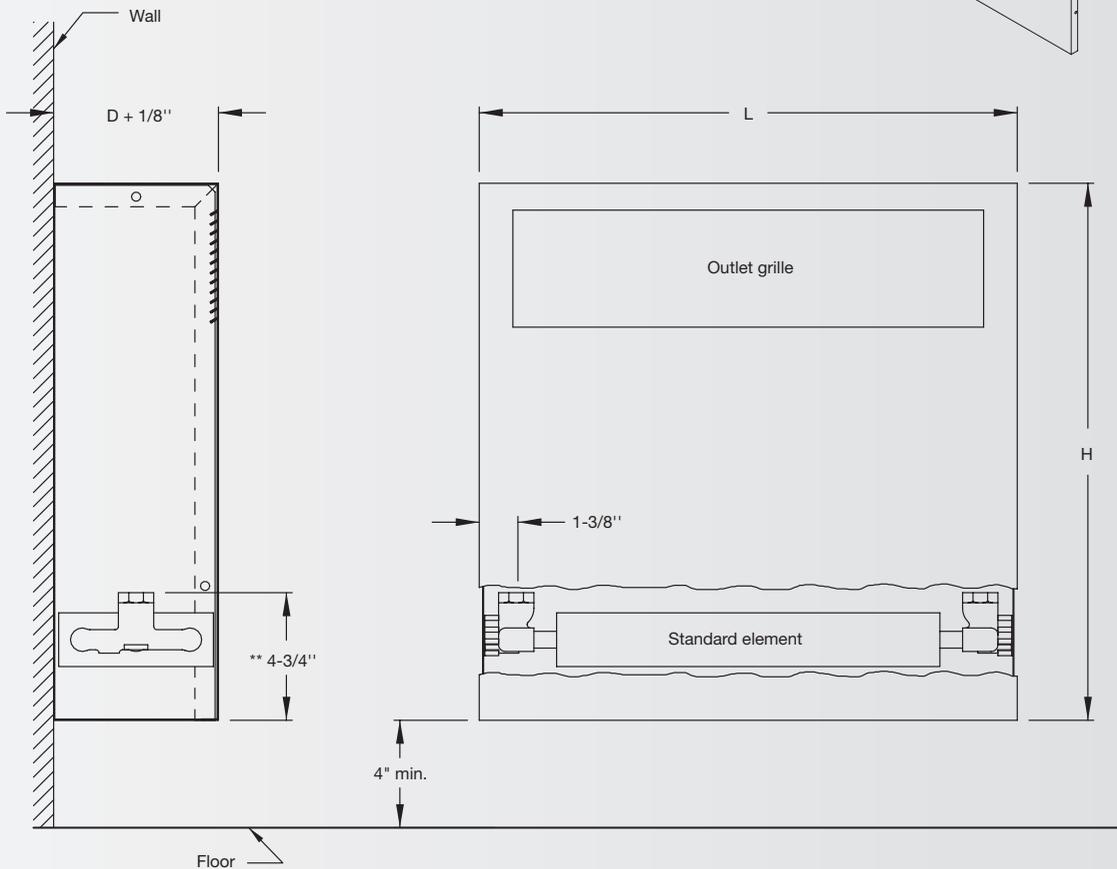
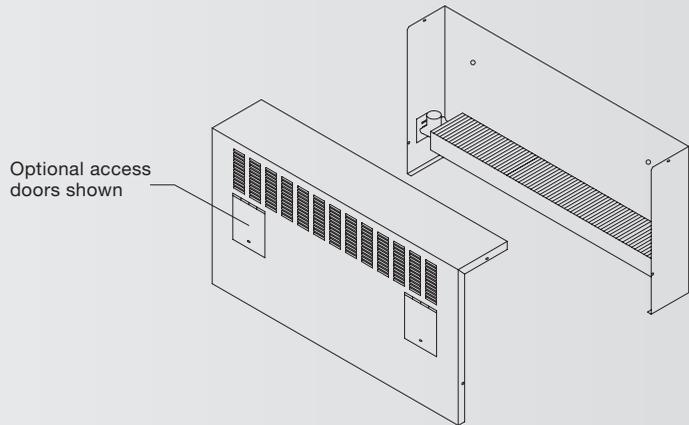
- For convectors less than 28" long, end pockets are not offered as standard. Consult factory for availability.
- \*\*The coil is adjustable 7/8" up in 7/16" increments.

# Dimensions and data

# Model WL Wall hung

Nominal lengths (L)	Nominal heights (H)	Nominal depths (D)
■ 24"	■ 18"	■ 4"
■ 28"	■ 20"	■ 6"
■ 36"	■ 26"	■ 8"
■ 40"	■ 32"	
■ 48"		
■ 52"		
■ 60"		
■ 64"		

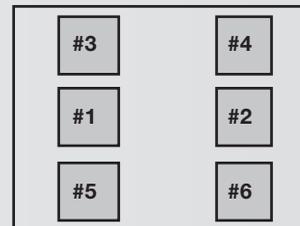
Any combination of length, height and depth is available.



### WL Convector Access Door Location Availability

Unit Height	Unit Lengths	# of Doors Available	Available Locations	Door Size
Up to 20"	Less than 32"	1	3 or 4, 1 or 2	4"H x 5"W
Up to 20"	32" and longer	2	3, 4 or 1,2	4"H x 5"W
20" and over	Less than 32"	3	1, 2, 3 or 1, 2, 4	5"H x 5"W
20" and over	32" and longer	4	1, 2, 3, 4	5"H x 5"W

### Standard Convector Access Door Locations



#### Note:

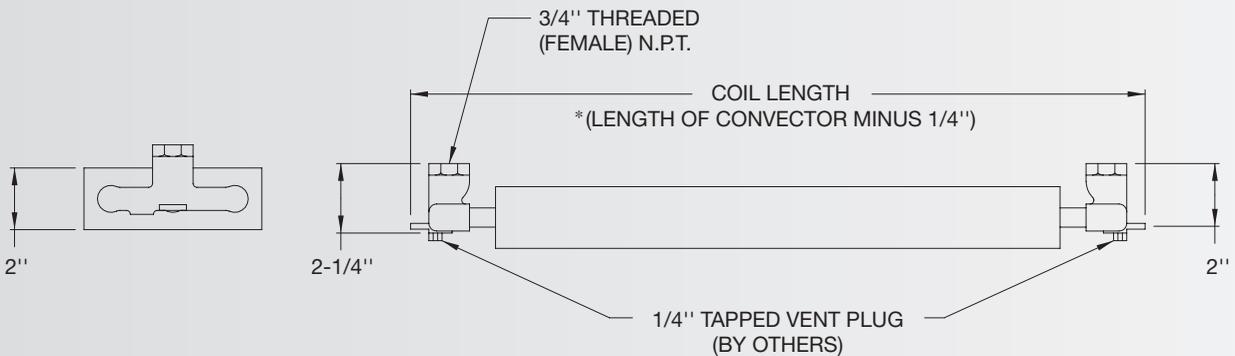
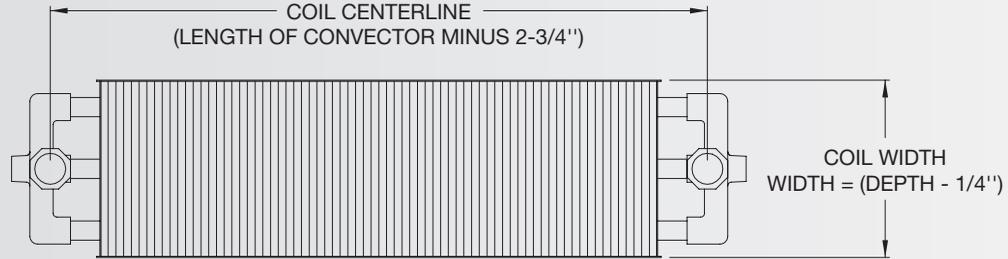
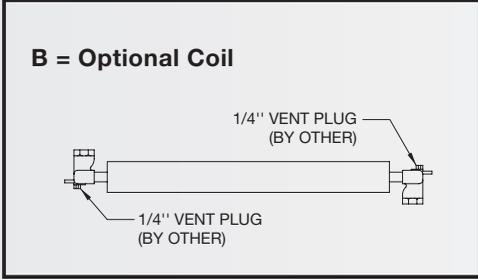
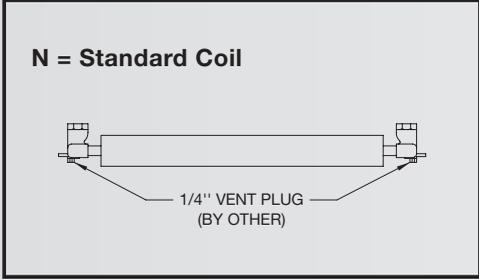
- Access doors not available in locations 5 and 6 with arched inlet.
- \*Contact factory on heights less than 20"

- For convectors less than 28" long, end pockets are not offered as standard. Consult factory for availability.

- \*\*The coil is adjustable 7/8" up in 7/16" increments.

# Dimensions and data

# Model Coil



- Note:
- Fins are 0.010" thick aluminum.
  - Header material is cast brass.
  - \*For Convectors with end pockets, subtract end pocket length from length of Convector.

## General information

This installation instructions literature is for Rittling Cabinet Convector. Rittling Cabinet Convector are hydronic terminal units designed for high heating capacity in open or hard-to-reach areas. Your equipment is initially protected under the Zehnder Rittling standard 1-year warranty provided the steps outlined in this manual for initial inspection, installation, periodic

maintenance and normal every day operation of the equipment are followed. This manual should be thoroughly reviewed prior to the installation, start-up or maintenance of the equipment. If any questions arise, please contact your local Zehnder Rittling sales representative or the factory before proceeding any further.

## Receiving

Upon delivery, examine the shipment against the bill of lading to make sure all of the units have been received and then check each unit carefully for shipping damage. Any damage should be reported to the freight carrier and a claim should be filed with them. Ensure the shipping company makes proper notation of any shortages or damage on all copies of the freight bill. Concealed damage not discovered during unloading must be reported to the shipping company within 15 days of receipt of the shipment.

All units are shipped F.O.B. factory. Therefore, Zehnder Rittling is not responsible for damage during transit. It is the responsibility of the installing contractor to inspect and verify that the units shipped were in fact the correct model number, voltage, etc. Any discrepancies should be reported to the local Sales Representative for immediate resolution prior to unpackaging and installation. The factory should be notified of any warranty repairs required in writing before any corrective action is taken. The factory must be fully informed of the expected costs before the work

is begun. Zehnder Rittling is not responsible for any repairs or alterations made by the purchaser without Zehnder Rittling's written consent and will not accept any back charges associated with these repairs or alterations. The return of damaged equipment will not be accepted without written authorization from Zehnder Rittling.

A unit that has received a written Return Goods Authorization will be inspected by Zehnder Rittling upon receipt. Any damage, missing parts, reworking or repackaging resulting from prior installation will constitute just cause for Zehnder Rittling to issue partial credit.

## Safety considerations

The installation of Rittling Cabinet Convector and all associated components, parts and accessories which make up the installation, shall be in accordance with the regulations of all authorities having jurisdiction and must conform to all applicable codes. Only trained and qualified service personnel using good judgment and safe practices should install, repair and/or service air conditioning equipment.

Untrained personnel can perform basic maintenance functions such as cleaning coils. All other operations should be performed by trained service personnel. When working on air conditioning equipment, observe precautions in the literature, tags and labels attached to the equipment and all other safety precautions that may apply.

Improper installation, adjustment, alteration, service, maintenance, or use can cause hazardous conditions which may cause serious personal injury and/or property damage. Consult a qualified installer, service agency, or your sales representative for information or assistance.

The equipment must always be properly supported by rigging and lifting equipment. Any temporary supports used during installation or maintenance must be designed to adequately hold the equipment in place until equipment is permanently fastened and set in its final location. All supports must meet applicable local codes and ordinances.

All fastening devices must be designed to mechanically hold the assembly in place without the ability to loosen or break away due to system operation or vibration.

Never pressurize equipment beyond specified pressures. Always pressure test with an inert fluid such as water or dry nitrogen to avoid possible damage or injury in the event of a leak or component failure during testing.

Always protect adjacent flammable material when welding or soldering. Use a suitable heat shield material to contain sparks or drops of solder. Have a fire extinguisher readily available. Please follow standard safe practices regarding the handling, installing or servicing of mechanical equipment.

Read these instructions thoroughly and follow all warnings or cautions attached to the equipment. Consult local building codes for special installation requirements.

Understand the signal words: danger, warning and caution.

### **⚠ DANGER**

Identifies the most serious hazards which will result in severe personal injury or death.

### **⚠ WARNING**

Signifies hazards that could result in personal injury or death.

### **⚠ CAUTION**

Used to identify unsafe practices, which would result in minor personal injury or product and property damage.

The manufacturer assumes no responsibility for personal injury or property damage resulting from improper or unsafe practices during the handling, installation, service or operation of the equipment. The installation of cabinet convectors and all associated components, parts and accessories shall be in accordance with the regulations of all authorities having jurisdiction and must conform to all applicable codes. It is the responsibility of the installing contractor to determine and comply with all applicable codes and regulations.

## Unpacking and preparation

All units are carefully inspected at the factory throughout the entire fabrication and assembly processes under Zehnder Rittling's stringent quality assurance program.

Each unit is carefully packaged in a cardboard container and filled with kraft paper padding for shipment to avoid damage during normal handling in the shipment process. It is the sole responsibility of the customer to provide the protection necessary to prevent vandalism and weather deterioration of the equipment. Under no condition should the units be left unprotected from the elements. If the equipment is not needed immediately at the job site, it should be left in its shipping carton and stored in a clean, dry area of the building or in a warehouse. Do not remove any equipment from its shipping package until it is needed for installation. The equipment is NOT suitable for outdoor installations.

After determining the condition of the cardboard container exterior, carefully remove each unit from the container and inspect for hidden damage. At this time, check that all shipped loose items are accounted for and placed in a safe area. Any hidden damage should be recorded and immediately reported to the carrier and a claim should be filed. In the event a claim for shipping damage is filed, the unit, cardboard container, and all packing must be kept for physical inspection by the freight carrier.

Once the equipment is properly positioned on the job site, cover the units with either a shipping carton, vinyl film, or an equivalent protective covering. Cap open ends of piping that is stored on a job site. Take special care to prevent foreign materials from entering the units in areas where painting, dry walling, or spraying of fireproof material, etc. has not yet been completed as these materials may accumulate on the coil. Foreign material that accumulates within the units can prevent proper start-up, necessitate costly clean-up operations, or result in immediate or premature component failure. Before installing any of the system components, be sure to examine each pipe, fitting and valve, and remove any dirt or foreign material found in or on these components. Some job conditions may require some form of temporary unit covering during construction.

### **⚠ CAUTION**

DO NOT store or install units in corrosive environments or in locations subject to temperature or humidity extremes (e.g., attics, garages, rooftops, etc.). Corrosive conditions and high temperature or humidity can significantly reduce system performance, reliability and overall service life.

## Handling and installation

While all equipment is designed for durability and fabricated with heavy gauge materials and may present a robust appearance, great care must be taken to assure that no undue force is applied to the coil, piping or other components during handling. Gloves should be worn when handling finished, painted units and should never be set down on unclean, hard surfaces. Failure to follow these instructions may lead to scratching or gouging of the finished surface.

Although Zehnder Rittling does not become involved with the design and selection of support methods and/or components, it should be recognized that unacceptable operating characteristics and/or performance may result from poorly implemented unit support. Additionally, proper clearance must be provided for service and removal of the equipment.

Make sure that the convector liners are secured tight to the mounting surface. Using fasteners, supplied by others, attach the liner to wall studs by penetrating the liner wherever necessary. Locate the convector coil in the coil clips located on each end of liner, making sure to provide proper pitch down from the supply end if the convector is being used in a two pipe steam system.

Upon installation, make sure that all sweated connections have been flushed with system water to avoid corrosion from left over flux material.

Once the coil is connected into the heating system, a standard pressure leak test should be conducted as specified by the engineer.

After completion of the pressure leak test, install the convector front onto the convector liner. Make sure that latching screws for access doors (if any) are secured with the door closed. If the convector is supplied with an optional damper, open and close the damper blade, with the knob damper provided, to make sure that there is no binding of the blade during operation.

After mounting the unit, it is then ready for the water or steam service connection. At this time it should be verified that the proper type of service is actually provided to the unit. On those units requiring hot water, the proper line size and water temperature should be available to the unit.

On units with steam heating coils, the proper line sizing and routing should be verified. The maximum steam pressure should never exceed 50 psig. The drain piping and steam trap, supplied by others, should be sized and routed to allow for proper condensate flow.

## Hot water connections

All coil connections are to be made with a threaded joint.

Use specified pipe dope or thread sealer tape for threaded connections to the cast bronze headers. Make sure that the pipe fitting going into the header is not over tightened. This may cause the header to split.

After the connections are completed, the system should be tested for leaks. Since some components are not designed to hold pressure with a gas, hydronic systems should be tested with water. Test pressure must not exceed 250 psig. Pressure testing should be completed prior to sheet rocking, finished floors, painting, caulking, etc.

### **⚠ CAUTION**

All water coils must be protected from freezing after initial filling with water. Even if the system is drained, unit coils may still hold enough water to cause damage when exposed to temperatures below freezing.

In the event that leaking or defective components are discovered, the Zehnder Rittling Sales Representative must be notified before any repairs are attempted. All leaks should be repaired before proceeding with the installation.

After system integrity has been established, the piping should be insulated in accordance with the project specifications. This is the responsibility of the installing or the insulation contractor. Zehnder Rittling will not accept any charges associated with re-insulating piping if the installing contractor failed to establish system integrity prior to insulating.

## Exposed unit touch-up and repainting

Units will be furnished with an epoxy powder coated paint finish. Small scratches in the finish may be repaired with touch-up spray paint available from the factory.

### **⚠ CAUTION**

Proper safety procedures should be followed regarding ventilation and personal safety equipment when using spray paint. Follow the manufacturer's directions for the products being used.

To repaint the factory powder coat finish, prepare the surface by lightly sanding with #280 grit sand paper or #000 or #0000 fine steel wool. The surface may also be wiped with a liquid surface etch cleaning product. These items should be available at most paint product stores. It should be noted that the more care taken during this process, the more effective it will be.

After this preparation is finished, the factory finish should provide excellent adhesion for a variety of air dried top coats. Enamel will give a more durable, higher gloss finish, while latex will not adhere as well and will give a dull, softer finish. Top coats involving an exothermic chemical process between two components such as epoxies and urethanes should be avoided.

All standard colors including primer can be painted over. If the installing contractor chooses not to paint over the primer color, the factory cannot match primer color on future orders, potentially causing color match issues in the field.

Factory touch-up spray paint may require a number of light coats to isolate the factory finish from the quick drying touch-up paint.

## Heating system

Prior to the water system start-up and balancing, the hot water system should be thoroughly flushed to clean out dirt and debris which may have accumulated in the piping during construction. During this procedure, all unit service valves must be in the closed position. This will prevent any foreign material from entering the unit's heat exchanger and clogging valves and metering devices. Strainers should be installed in the piping mains to prevent this material from entering the units during normal operation.

During system filling, air venting should be done through air vents provided in the main system.

### **⚠ CAUTION**

Inspect the entire system for potential air traps and independently vent those areas as required. In addition, some systems may require repeated venting over time to fully eliminate air in the system.

## Water system balancing

A complete knowledge of the hydronic system, including its components and controls, is essential to proper water system balancing and should only be completed by a qualified expert. The system must be complete, and all components must be in operating condition before beginning the water system balancing procedures.

Each hydronic system has different operating conditions depending on the devices and controls installed for the particular application. The actual balancing technique may vary from one system to another.

After the proper system operation is established, the appropriate operating conditions such as water temperatures, flow rates and pressure drops should be recorded for future reference.

Before and during water system balancing, conditions may exist due to incorrect system pressures which may result in noticeable water noise or undesired valve operation. After the entire system is balanced, these conditions will not exist on properly designed systems. If any of these conditions persist, recheck the system for air that may not have been properly vented during start-up.

## Water treatment

Proper water treatment is a specialized industry and therefore it is recommended to consult an expert in this field to analyze the water for compliance with the water quality parameters listed below and to specify the appropriate water treatment program. The expert may recommend rust inhibitors, scaling preventative, antimicrobial growth agents or algae preventatives. Anti-freeze solutions, glycols, may also be used to lower the freezing point.

All Zehnder Rittling water coils are constructed of copper tubes and brass headers. It is the end user's responsibility to ensure that any of the water delivery components are compatible with the treated water.

Failure to provide proper water quality will void the fan coil unit's warranty.

Water content	Required concentration
Sulphate	< 200 ppm
pH	7.0 – 8.5
Chlorides	< 200 ppm
Nitrate	< 100 ppm
Iron	< 4.5 mg/L
Ammonia	< 2.0 mg/L
Manganese	< 0.1 mg/L
Dissolved solids	< 1000 mg/L
Calcium carbonate hardness	300 – 500 ppm
Calcium carbonate alkalinity	300 – 500 ppm
Particulate quantity	< 10 ppm
Particulate size	800 micron max

## Maintenance

Before each heating season, remove front panel and inspect coil fins for accumulation of dust or other debris that may block airflow between fins. Brush the entire finned surface with a soft bristled brush, brushing parallel to the fins, taking care not to damage the fins. Brushing should be followed by cleaning with a vacuum cleaner. Compressed air can also be used by blowing air through the coil fins, again followed by vacuuming. If fins are damaged during the cleaning process, use an instrument screwdriver or other small, flat-edged tool to restraighten fins.

For a deeper cleaning, spray the finned surface with a mild alkali cleaning solution and rinse thoroughly.

Failure to maintain a clean coil surface will result in reduced performance.

Inspect for leaks. Replace front cover. If a damper is included, ensure that the damper is able to move freely.

## Equipment start-up checklist

### Receiving and inspection

- Unit received undamaged
- Unit received complete as ordered
- Unit structural support is complete and correct

### Handling and installation

- Unit mounted level and square
- Proper access is provided for unit and accessories
- Proper hot water line size to unit
- Unit protected from dirt and foreign matter

### Heating connections

- Connect field piping to unit
- Pressure test all piping for leaks
- Install drain lines and traps, as required
- Insulate all piping, as required

### Unit start-up

- General visual inspection and system inspection
- Close all unit isolation valves
- Flush water systems
- After system has been flushed, ensure all isolation valves are open

## Replacement parts

Factory replacement parts should be used wherever possible to maintain unit performance and its normal operating characteristics.

Replacement parts may be purchased through the local Zehnder Rittling Sales Representative.

Contact the local Sales Representative or factory before attempting any unit modifications. Any modifications not authorized by the factory could result in personnel injury, damage to the unit, and will void the manufacturer's warranty.

When ordering parts, the following information should be supplied to ensure proper part identification:

- Complete unit model number
- Complete part description including any identifying numbers on the part

On warranty replacements, it is often necessary to return the faulty component to receive credit. Contact the local Sales Representative who will get authorization from the factory including an RGA (Returned Goods Authorization) to be used when sending components back for inspection. Any returned components sent back to the factory without the proper RGA attached will cancel any outstanding credit.

## Warranty

Zehnder Rittling guarantees its products to be free from defects in material and workmanship for a period of one year from date of shipment from our factory.

Should there be any defects in the good(s), the purchaser should promptly notify Zehnder Rittling. Upon receipt of written consent from Zehnder Rittling, the purchaser shall return the defective good(s) to the factory for inspection with freight prepaid. If inspection shows the goods to be defective, Zehnder Rittling will at its discretion repair or replace the said item(s).

Defects arising from damage due to shipment, improper installation, negligence or misuse by others are not covered by this warranty.

This warranty is extended only to the original purchaser from Zehnder Rittling.

**IMPORTANT: Approved submittal documentation, specific to each project, supersedes the general guidelines contained within this document.**

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