MAINLINE®
Reliably Comfortable.™

Air Handlers

RF2TY

Constant Torque Motor (ECM)
Two-Stage Airflow
Expansion Device: Thermal Expansion Valve (TXV)
Efficiencies: 13.4 to 14.3 SEER2
Refrigerant Type: R-454B

Manufactured for
Mainline®
HVACmainline.com

ISO 9001:2015

c UL us LISTED

AHRI CERTIFIED
Unitary Small AC
AHRI Standard 210/240

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Features and Benefits

- **Quiet Operation[1]:** Provided by a cabinet construction with 1.0 inch of foil faced insulation for quieter sound characteristics
- **Front or Bottom Return with Aluminum Indoor Coil Design:** Constructed of aluminum fins bonded to internally grooved aluminum tubing and are more corrosion resistant
- **Rugged Steel Cabinet Construction:** Designed for added strength and versatility
- **Most Compact Unit Design Available:** All Standard air handler models are only 36" [915 mm] in height
- **Designing for Sustainability with Low GWP:** For 2025, the Environmental Protection Agency (EPA) has set a global warming potential (GWP) limit of 700 for refrigerant used in heating and cooling systems. This new requirement will result in a 78%[2] lower GWP than previous-generation refrigerants — with only minimal changes to system installation. For us, this is another step toward our continued sustainability goal of reducing greenhouse gas emissions, while still delivering an exceptional level of energy efficient, dependable comfort
- **Refrigerant Detection System[3]:** An integrated one-box, patented design featuring the A2L sensor and mitigation board, offering easier commissioning with a single component and simplified wiring configuration, compatibility with any 24V thermostat application and system protection by automatically pausing outdoor unit operation — if excess refrigerant is detected

[ ] Designates Metric Conversions

[1]Based on manufacturer's furnace offering, and the product's heating stages, motor type and cabinet insulation. Sound levels are also dependent on furnace location and installation

[2]When comparing the GWP of R-454B to R-410A refrigerant

[3]Factory or field installed in the furnace coil or air handler and is applicable to the complete heating and cooling system featuring Low GWP Refrigerant (A2L)

Air Handlers

R	F	2	T	Y	24	21	S	T	A	N	S	J	B	0	417
Brand	**Product Category**	**Stages Of Airflow**	**Motor Type**	**Refrigerant**	**Capacity**	**Width**	**Efficiency**	**Metering**	**Major Series**	**Controls**	**Coil Series**	**Voltage**	**Disconnect**	**Factory Heat**	**Option Code**
R - Mainline	F - Front Return	2 - 2-Stage	T - Constant Torque	Y - R-454B	24 - 24,000 [7.03 kW] 36 - 36,000 [10.55 kW]	21 - 21" 24 - 24.5"	S - Standard	T - TXV	A - 1st Design	N - Non-Comm.	S - Slab	J - 208-240/1/60	B - Breaker N - None	00 - No Heat 03 - 3 kW 05 - 5 kW 08 - 8 kW 10 - 10 kW	Blank - Factory-Installed Sensor 417 - Float Switch L - Less A2L Sensor 41L - Less Sensor/ Float Switch

Available Models	
RF2TY2421STANSJB03	RF2TY2421STANSJB03417
RF2TY2421STANSJB05	RF2TY2421STANSJB05417
RF2TY2421STANSJB08	RF2TY2421STANSJB08417
RF2TY2421STANSJB10	RF2TY2421STANSJB10417
RF2TY2421STANSJN00	RF2TY2421STANSJN00417
RF2TY3624STANSJB03	RF2TY3624STANSJB03417
RF2TY3624STANSJB05	RF2TY3624STANSJB05417
RF2TY3624STANSJB08	RF2TY3624STANSJB08417
RF2TY3624STANSJB10	RF2TY3624STANSJB10417
RF2TY3624STANSJN00	RF2TY3624STANSJN00417
RF2TY2421STANSJB03L	RF2TY2421STANSJB0341L
RF2TY2421STANSJB05L	RF2TY2421STANSJB0541L
RF2TY2421STANSJB08L	RF2TY2421STANSJB0841L
RF2TY2421STANSJB10L	RF2TY2421STANSJB1041L
RF2TY2421STANSJN00L	RF2TY2421STANSJN0041L
RF2TY3624STANSJB03L	RF2TY3624STANSJB0341L
RF2TY3624STANSJB05L	RF2TY3624STANSJB0541L
RF2TY3624STANSJB08L	RF2TY3624STANSJB0841L
RF2TY3624STANSJB10L	RF2TY3624STANSJB1041L
RF2TY3624STANSJN00L	RF2TY3624STANSJN0041L

Standard Equipment
Exclusive Incoloy sheath type electric heating elements
Field convertible air supply
Durable framed cleanable air filter
Indoor coil design provides low air side pressure drop, high performance and compact size
PVC condensate elbow is standard on all coils
All indoor coils have aluminum tubing and aluminum fins
Molded polymer corrosion resistant condensate drain pan
Supply and return duct flanges
High and low voltage connection points inside cabinet
Concentric knockouts provided for power connection with hole size up to 2 inches [51 mm] for 1 1/2 inch [38mm] conduit
Internal checked TX valves for quiet refrigerant metering
Front refrigerant and drain connection
Fresh air knockouts

[ ] Designates Metric Conversions

Unit Dimensions

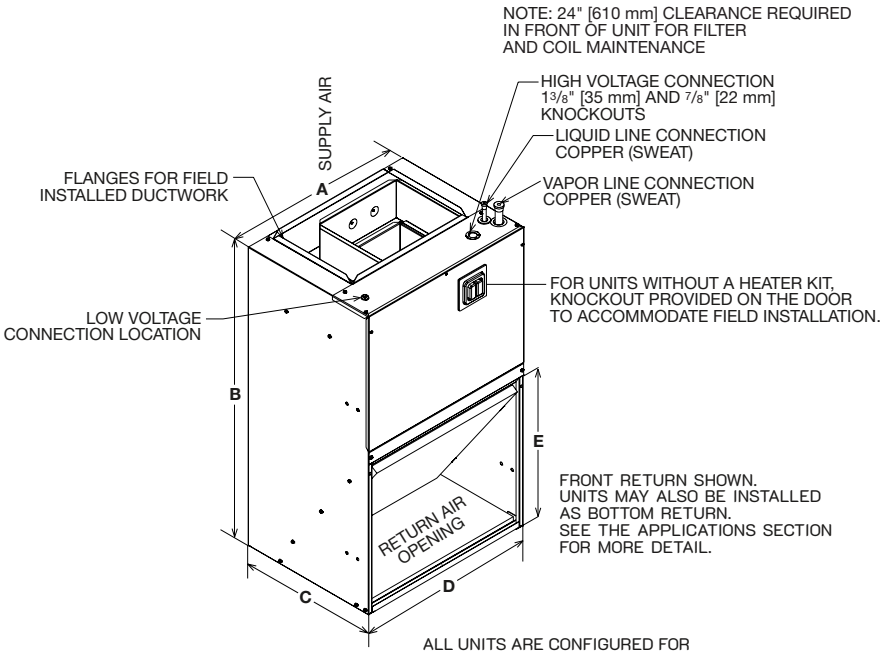


Illustration
ST-A1358-02-01

Return Air Opening Dimensions

Model Cabinet Size	Return Air Opening Width (Inches)	Return Air Opening Depth/Length (Inches)
21	19 3/8	19 3/4
24	22 7/8	19 3/4

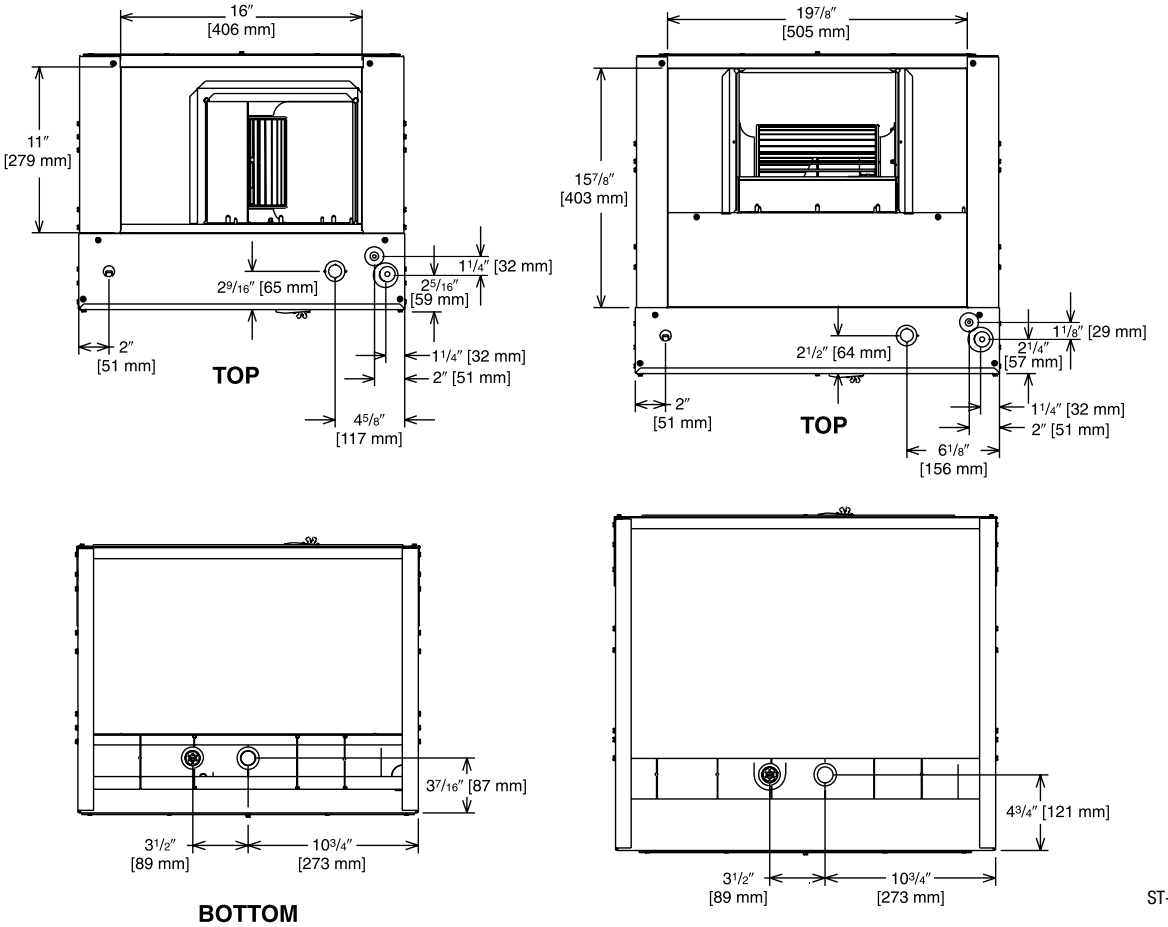


Illustration
ST-A1358-03-00

1 1/2 & 2 TON [5.28 & 7.03 kW] MODELS

2 1/2 & 3 TON [8.79 & 10.6 kW] MODELS

[ ] Designates Metric Conversions

Unit Dimensions & Weights

Model	(A) Unit Width In. [mm]	(B) Unit Height In. [mm]	(C) Unit Depth In. [mm]	(D) Return Air Opening Width In. [mm]	(E) Return Air Opening Height In. [mm]	Filter Size in. x in. x in. [mm x mm x mm]	Air Flow CFM (Nom.) [L/s]		Unit Weight/Shipping Weight (Lbs.) [kg]
							Low	High	
RF2TY2421	21 1/2 [546.1]	36 [914.4]	17 [431.8]	20 [508.0]	17 7/16 [442.9]	20 X 20 X 1 [508 X 508 X 25.4]	600 [283]	800 [378]	95 [43] x 105 [48]
RF2TY3624	24 [609.6]	36 [914.4]	21 [533.4]	23 [584.2]	21 3/8 [542.9]	20 X 25 X 1 [508 X 635 X 25.4]	1000 [472]	1200 [566]	95 [43] x 105 [48]

[ ] Designates Metric Conversions

Airflow Performance

Airflow performance data is based on cooling performance with a coil and no filter in place. Select performance table for appropriate unit size, voltage and number of electric heaters to be used. Make sure external static applied to unit allows operation within the minimum and maximum limits shown in table below for both cooling and electric heat operation. For optimum blower performance, operate the unit in the .3 [8 mm] to .7 inches [18 mm] W.C. external static range. Units with coils should be applied with a minimum of .1 inch [3 mm] W.C. external static range.

Airflow Operating Limits

Model Cabinet Size	21	24
Cooling BTUH x 1,000 Cooling Tons Nominal	-24 2	-36 3
Heat Pump or Air Conditioning Maximum Heat/Cool CFM [L/s] (37.5 CFM [18 L/s]/1,000 BTUH) (450 CFM [212 L/s]/Ton Nominal)	900 [425]	1350 [637]
Heat Pump or Air Conditioning Nominal Heat/Cool CFM [L/s] (33.3 CFM [16 L/s]/1,000 BTUH) (400 CFM [189 L/s]/Ton Nominal)	800 [378]	1200 [566]
Heat Pump or Air Conditioning Minimum Heat/Cool CFM [L/s] (30.0 CFM [14 L/s]/1,255 BTUH) (360 CFM [170 L/s]/Ton Nominal)	720 [340]	1080 [510]
Maximum kW Electric Heating & Minimum Electric Heat CFM [L/s]	10 690 [326]	10 976 [461]
Maximum Electric Heat Rise °F [°C]	44 [7]	44 [7]

[ ] Designates Metric Conversions

115V/208V/240V Airflow Performance Data—RF2TY (Constant Torque (ECM) Motor)

Model/ Nominal Cooling Capacity	Air-Flow Range (Max/Min) CFM	Manufacturer Recommended Blower Size/ Motor HP # of Speeds	Motor Speed From Factory	Motor Speed	CFM Dry Delivery/Filter/Heaters/RPM/Watts External Static Pressure-Inches W.C.										
						0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.0
RF2TY24 1.5 Tons	825/510	10x6 1/3 Hp 2 speed dual voltage	4	2	CFM	533	486	462	426	359	327	315	301	253	206
					RPM	687	740	769	821	893	931	970	1025	1077	1102
					Watts	63.9	69.1	72.2	78.6	84.4	86.3	90.2	95.7	100.4	103.5
			5	3	CFM	692	660	623	598	588	542	497	464	411	349
					RPM	811	844	880	917	953	984	1045	1090	1134	1163
					Watts	109.4	114.5	119.1	123.1	128.5	133.0	141.0	146.2	153.2	145.3
RF2TY24 2 Tons	973/733	10x6 1/3 Hp 2 speed dual voltage	4	4	CFM	566	529	502	454	426	361	324	303	288	246
					RPM	713	755	795	837	896	951	997	1039	1097	1129
					Watts	71.3	75.2	79.1	83.9	89.2	94.5	99.4	104.8	112.1	114.0
			5	5	CFM	842	808	788	762	738	715	681	659	527	372
					RPM	938	976	1002	1028	1056	1091	1123	1132	1159	1175
					Watts	176.6	183.8	189.6	194.1	198.5	203.3	211.4	208.2	182.4	151.0
RF2TY36 2.5 Tons	1145/894	10x8 1/2 Hp 2 speed dual voltage	4	2	CFM	649	651	629	564	497	441	375	325	272	218
					RPM	611	635	662	715	776	834	896	928	995	1054
					Watts	65.3	67.4	69.7	75.9	79.2	86.8	92.7	95.9	102.2	106.9
			5	3	CFM	1021	956	929	885	838	802	757	708	664	605
					RPM	777	824	862	902	939	985	1027	1070	1109	1148
					Watts	157.4	164.7	173.3	180.0	185.6	193.6	201.3	210.7	217.3	220.8
RF2TY36 3 Tons	1306/1040	10x8 1/2 Hp 2 speed dual voltage	4	4	CFM	674	660	601	523	470	391	351	313	255	201
					RPM	628	671	728	791	860	899	932	983	1042	1090
					Watts	70.4	75.3	81.4	86.6	94.4	98.4	101.4	107.0	113.1	117.3
			5	5	CFM	1122	1087	1054	1006	960	932	894	838	772	666
					RPM	843	883	924	961	1002	1033	1070	1111	1144	1161
					Watts	206.1	215.2	225.0	233.1	241.5	247.3	257.0	265.6	265.9	240.5

NOTE: All RF2TY Air Handlers have 5 speed constant torque motors.
Speed tap 1 is for continuous fan. Speed tap 2 (low static) and speed tap 3 (high static) are for lower tonnage (1.5 or 2.5 tons). Speed tap 4 (low static) and speed tap 5 (high static) are for higher tonnage (2.0 or 3.0 tons).

RF2TY Air Handlers are always shipped from factory at speed tap 4 and 5.

- The airflow for continuous fan (speed tap 1) is always set at 50% of the speed tap 4.
- The above airflow table lists the airflow information for Air Handlers with maximum heater allowed for each model.

Electrical Data – Blower Motor Only – No Electric Heat

Model/Nominal Cooling Tons	Voltage	Phase	Hertz	HP [W]	RPM	Speeds	Circuit Amps.	Minimum Circuit Ampacity	Maximum Circuit Protector
RF2TY2421	208/230	1	60	1/3 [249]	300-1100	4	1.9	3	15
RF2TY3624	208/230	1	60	1/2 [373]	300-1100	4	2.7	4	15

*Blower motors are all single phase motors.

Electrical Data – with Electric Heat

Installation of the U.L. Listed original equipment manufacturer provided heater kits listed in the table below is recommended for all auxiliary heating requirements.

Cooling Capacity Tons	Model No.	Heater kW	PH/Hz	No. Elements - kW Per	(208/240V) Type Supply Circuit	Circuit Amps.	Motor Ampacity	Minimum Circuit Ampacity	Maximum Circuit Protection
RF2TY24	RXHJ-21B/T03J-1	2.25/3.0	1/60	1-3.0	Single	10.8/12.5	1.9	16/18	20/20
	RXHJ-21B/T05J-1	3.6/4.8	1/60	1-4.8	Single	17.3/20.0	1.9	24/28	25/30
	RXHJ-21B/T08J-1	5.4/7.2	1/60	2-3.6	Single	26.0/30.0	1.9	35/40	40/40
	RXHJ-21B/T10J-1	7.2/9.6	1/60	2-4.8	Single	34.6/40.0	1.9	46/53	50/60
RF2TY36	RXHJ-24B/T03J-1	2.25/3.0	1/60	1-3.0	Single	10.8/12.5	2.7	17/19	20/20
	RXHJ-24B/T05J-1	3.6/4.8	1/60	1-4.8	Single	17.3/20.0	2.7	25/29	25/30
	RXHJ-24B/T08J-1	5.4/7.2	1/60	2-3.6	Single	26.0/30.0	2.7	36/41	40/50
	RXHJ-24B/T10J-1	7.2/9.6	1/60	2-4.8	Single	34.6/40.0	2.7	47/54	50/60

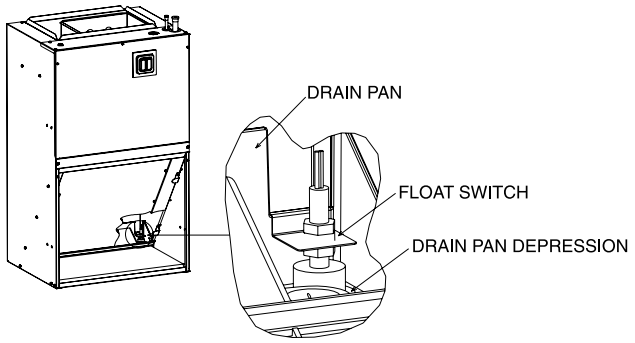
- Electric heater BTUH - (heater watts + motor watts) x 3.414 (see airflow table for motor watts.)
- J voltage (230V) single phase air handler is designed to be used with single or three phase.
- Supply circuit protective devices may be fused or “HACR” type circuit breakers.
- If non-standard fuse size is specified, use next size larger standard fuse size. Without the heater, bring only two leads to terminal block, cap, insulate and fully secure the third lead.
- Largest motor load is included in single circuit or circuit 1 of multiple circuits.
- Do not use 480 volts electrical heaters on 230 volts air handler.

Electrical Wiring: Power Wiring Grounding

- Field wiring must comply with the National Electrical Code.
- This product must be sufficiently grounded in accordance with (C.E.C. in Canada) and any applicable local ordinance. National Electrical Code (C.E.C. in Canada) and any applicable.
- Supply wiring must be 75°C minimum copper conductors only. Local ordinance.
- See electrical data for product Ampacity rating and Circuit.
- A grounding lug is provided. Protector requirement.

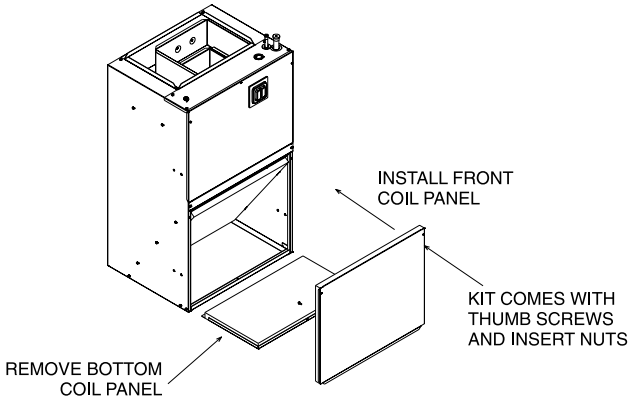
16.0 Accessories-Kits-Parts

- **Drain Pan Over Flow Switch RXHK-A01** is used to detect condensate drain blockage and will shut down the outdoor unit in order to prevent structural damage to the surrounding structures of the air handler.



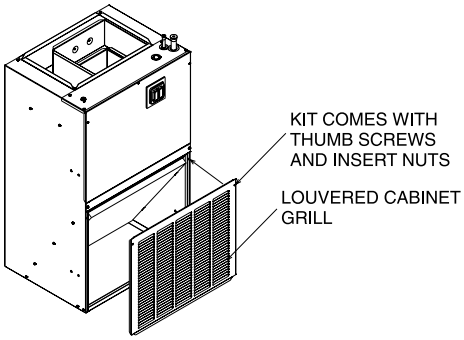
- **Bottom Return Conversion Kit RXHK-** is used to divert the return air from the factory standard front return to a bottom return.

Accessory Number	Indoor Unit
RXHK-B01	RF1P-FR18
	RF1P-FR24
	RF1T-FR24
RXHK-B02	RF1P-FR30
	RF1P-FR36
	RF1T-FR36

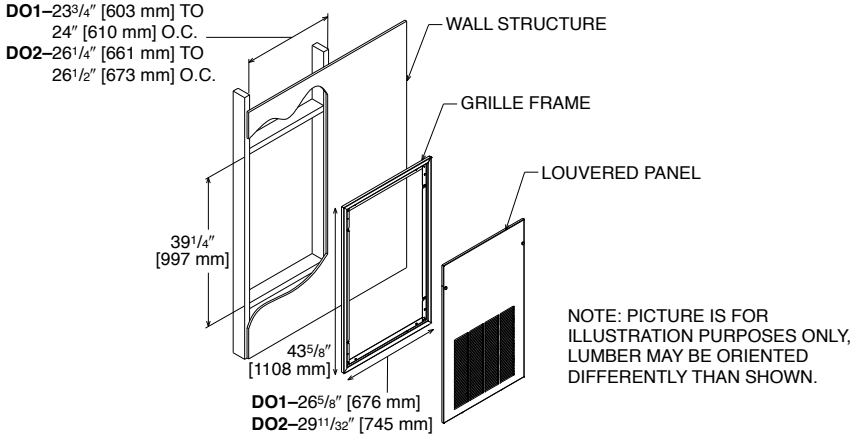


- **Louvered Cabinet Grill RXHK-** is used as decorative grill which covers the return air opening of the front return air handler.

Accessory Number	Indoor Unit
RXHK-C01	RF1P-FR18
	RF1P-FR24
	RF1T-FR24
RXHK-C02	RF1P-FR30
	RF1P-FR36
	RF1T-FR36



- **Decorative Wall Grill RXHK-D01** or **RXHK-D02** is used in applications where the air handler is installed in a closet or interior wall and allows adequate return air back to the unit. Please refer to RXHD-D01/RXHK-D02 installation instructions for complete dimensional information when selecting a decorative wall grill.



[ ] Designates Metric Conversions

MAINLINE®
Reliably Comfortable.™

GENERAL TERMS OF LIMITED WARRANTY*

Mainline® will furnish a replacement for any part of this product which fails in normal use and service within the applicable periods stated, in accordance with the terms of the limited warranty.

Conditional Parts
(Registration Required).....Ten (10) Years

***For complete details of the Limited and Conditional Warranties, including applicable terms and conditions, contact your local contractor or the Manufacturer for a copy of the product warranty certificate.**

Before proceeding with installation, refer to installation instructions packaged with each model, as well as complying with all Federal, State, Provincial, and Local codes, regulations, and practices.

"In keeping with its policy of continuous progress and product improvement, Mainline reserves the right to make changes without notice."

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