

*F, P Series  
Multi-position Air Handler  
With Five-Speed High Efficiency Motor Option  
Engineering & Specification Guide*



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**Product improvement is a continuous process at Advanced Distributor Products. Therefore, product specifications are subject to change without notice and without obligation on our part. Please contact your ADP representative or distributor to verify details.**

## Cabinet Features

- ETL-certified cabinet with 2% or less air leakage and wrap-around flanges that increase stability in horizontal configurations.
- Cabinet constructed of heavy gauge galvanized steel and lined with high quality 5/8" foil faced insulation.
- Brackets to hold coil assembly when installed in horizontal position so coil assembly will not move.
- Glued foil faced insulation, with cabinet flanges for better securing.
- Additional wire retainers, to better secure insulation when the blower is operating.
- Only four (4) screws to remove blower panel, making it easier to service.
- Slide-out blower and coil assembly.
- Two independent front access panels allow for easy access to clean the coil even after installation.
- Filter rack built into every air handler. (Filter not included with air handler)
- Painted cabinets available upon request for additional corrosion resistance.
- Available from factory as upflow or upflow/horizontal. Field installed horizontal drain pan kit is also available.

## Evaporator Coil Features

- Suitable for use with R-22 and R-410A.
- Rifled Copper Tubing.
- Patented lance fin design.
- Coils are air pressure tested at 500 PSI, pressure tested with Helium, charged with dry air and then sealed.
- Non-bleed A/C or HP expansion valves available factory installed. Screw-on expansion valves also available as kits for field installation.
- All drain pans have Microban protection, which inhibits the growth of mold and mildew that cause odors and staining.
- **HYDRO TEC™** drain pans hold less water which reduces the possibility of mold and mildew from growing in the pan.
- Dual 3/4" FPT condensate drains on left and right sides.
- Drain pans are molded of corrosion proof engineering polymer.

## Electrical Features

- 120 V supply voltage available
- High Efficiency Five-Speed motor option.
- Dynamically balanced blowers for quiet vibration free operation.
- Electrical connections can be made on top, right or left side of cabinet.
- Electric heat available factory installed or in kit form for field installation. Plug in connections simplify installation of kits.
- Fan time delay available factory installed or as a field installed kit.

## Physical Data

		Air Handler Size									
		18	24	25	30	31	36	37	42	48	60
Available Voltage*		(120 V 60 Hz, 1 ph.), (208/240 V, 60 Hz, 1 ph.), (220 V, 50 Hz, 1 ph.)									
Maximum Elec. Heat Available (KW)		10	10	10	15	15	15	15	15	20	20
Transformer Size and Type		40 VA, Class 2									
Blower Data - 3-Speed Motor	Motor H. P.	1/4	1/4	1/4	1/3	1/3	1/3	1/3	1/2	3/4	3/4
	F. L. A. @ 120 V	2.0	3.7	4.2	4.2	5.6	5.6	-	5.6	8.5	9.0
	F. L. A. @ 240 V	1.9	1.9	1.9	2.6	2.6	2.6	2.6	3.0	4.3	4.3
Blower Data - Five-Speed High Efficiency Motor	Motor H. P.	1/3	1/3	1/3	1/2	1/2	1/2	1/2	1/2	3/4	1
	F. L. A. @ 240 V	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.2	4.6
Wheel (dia... x width)		9 X 6	9 X 6	9 X 6	10 x 8	10 x 8	10 x 8	10 x 8	10 x 8	10 X 10	10 X 10
Nominal CFM		600	800	800	1000	1000	1200	1200	1400	1600	2000
Air Filter Size		12 X 20	12 X 20	16 X 20	16 X 20	20 X 25	16 X 20	20 X 25	20 X 25	20 X 25	20 X 25
Refrigerant Conn. (IDS) Suction		3/4"	3/4"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"
Refrigerant Conn. (IDS) Liquid		3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
Florator Piston Size		.059	.059	.059	.067	.067	.073	.073	.080	.084	.093
Approx. Weight lbs (base unit w/out heat)		80	80	105	105	155	105	155	155	155	155

\* 120 V, 60 Hz supply voltage cannot be used with electric heat, Five-Speed High Efficiency Motor, and 37 MBTUH Unit Size  
 220 V, 50 Hz supply voltage cannot be used with five-speed high efficiency motor.

# Model Nomenclature

**F** **C** **M** **E31** **2** **24** **S** **05** **2**

**P** = ADP Entire Unit Painted  
**F** = ADP Front Paint

### BLOWER MOTOR TYPE

**C** = Three-Speed Motor  
**E** = \*Five-Speed High Efficiency Motor

### AIRFLOW CONFIGURATION

**V** = Vertical Only  
**M** = Multi-position (upflow, left or right horizontal)

### SLAB NUMBER

### METERING DEVICE

**0** = No Cooling Coil  
**2** = Florator  
**3** = Bleed TXV Valve (R-22)  
**4** = Non Bleed A/C TXV Valve (R-22)  
**5** = Non Bleed HP-A/C TXV Valve (R-22)  
**6** = Non Bleed A/C TXV Valve (R-410A)  
**9** = Non Bleed HP-A/C TXV Valve (R-410A)

### UNIT SIZE (NOMINAL MBTUH)

18, 24, 25, 30, 31, 36, 37\*, 42, 48, 60

### VOLTAGE

**1** = 240/208 V, 60 Hz, 1 ph.  
**2** = 240/208 V, 60 Hz, 1 ph. w/Time Delay  
**3** = \*120 V, 60 Hz, 1 ph.  
**4** = \*120 V, 60 Hz, 1 ph.w/Time Delay  
**5** = \*220 V, 50 Hz, 1 ph.  
**6** = \*220 V, 50 Hz, 1 ph. w/Time Delay

### HEAT

**Note:** Maximum 10 Kw per electrical supply circuit

		SIZE	Kw Available
<b>00</b> = 0 Kw ELEC.	<b>18</b>		5, 7.5, 10
<b>05</b> = 5 Kw ELEC.	<b>24 &amp; 25</b>		5, 7.5, 10
<b>07</b> = 7.5 Kw ELEC.	<b>30 &amp; 31</b>		5, 7.5, 10, 15
<b>10</b> = 10 Kw ELEC.	<b>36 &amp; 37</b>		5, 7.5, 10, 15
<b>15</b> = 15 Kw ELEC.	<b>42</b>		5, 7.5, 10, 15
<b>20</b> = 20 Kw ELEC.	<b>48</b>		5, 7.5, 10, 15, 20
	<b>60</b>		5, 7.5, 10, 15, 20

### LINE VOLTAGE CONNECTION

	Amount of Heat					
	0	5	7.5	10	15	20
S = Stripped Wire	#	#				
T = Terminal Block		O	#	#		
B = Circuit Breaker		O	O	O	#	#

# = Standard      O = Optional

\* 120 V, 60 Hz supply voltage cannot be used with electric heat, five-speed high efficiency motor, and 37 MBTUH Unit Size

## 208/240 Volt Three-Speed Motor - Blower Performance (CFM vs. ESP inches H2O)

All data is given while air handler is operating with a dry DX coil and air filter installed.  
Speeds marked in **bold with an asterisk\*** are the factory speed settings for both heating and cooling.  
Cooling speeds should not be reduced below factory setting.

Size	Speed	.10	.20	.30	.40	.50
<b>18</b>	Low	471	444	417	408	398
	<b>*Med</b>	727	686	643	629	614
	High	770	759	749	725	700
<b>24</b>	Low	664	641	623	605	574
	<b>*Med</b>	906	855	802	783	764
	High	940	927	914	884	854
<b>25</b>	<b>*Low</b>	944	890	836	817	798
	Med	1207	1139	1068	1044	1020
	High	1224	1208	1191	1152	1113
<b>30</b>	Low	944	890	836	817	798
	<b>*Med</b>	1207	1139	1068	1044	1020
	High	1224	1208	1191	1152	1113
<b>31</b>	<b>*Low</b>	1226	1156	1086	1061	1036
	Med	1465	1382	1245	1217	1188
	High	1467	1447	1427	1381	1334

Size	Speed	.10	.20	.30	.40	.50
<b>36</b>	Low	1226	1156	1086	1061	1036
	<b>*Med</b>	1465	1382	1245	1217	1188
	High	1467	1447	1427	1381	1334
<b>37</b>	Low	1190	1122	1052	1028	1003
	<b>*Med</b>	1437	1355	1270	1241	1212
	High	1449	1429	1389	1344	1298
<b>42</b>	Low	1410	1329	1248	1219	1189
	<b>*Med</b>	1726	1628	1526	1491	1456
	High	1733	1709	1685	1630	1574
<b>48</b>	<b>*Low</b>	1728	1677	1629	1582	1535
	Med	1821	1796	1772	1714	1656
	High	1870	1844	1819	1760	1700
<b>60</b>	Low	1745	1645	1545	1509	1473
	<b>*Med</b>	2107	2078	2048	1981	1913
	High	2163	2133	2103	2034	1964

## 120 Volt Three-Speed Motor - Blower Performance (CFM vs. ESP inches H2O)

All data is given while air handler is operating with a dry DX coil and air filter installed.  
Speeds marked in **bold with an asterisk\*** are the factory speed settings for both heating and cooling.  
Cooling speeds should not be reduced below factory setting.

Size	Speed	.10	.20	.30	.40	.50
<b>18</b>	Low	431	424	425	403	385
	<b>*Med</b>	645	645	645	641	597
	High	804	804	804	793	765
<b>24</b>	Low	536	547	558	569	547
	<b>*Med</b>	904	897	891	877	828
	High	1129	1086	1023	993	956
<b>25</b>	<b>*Low</b>	800	797	782	767	693
	Med	1238	1212	1179	1165	1179
	High	1381	1337	1276	1238	1232
<b>30</b>	Low	800	797	782	767	693
	<b>*Med</b>	1238	1212	1179	1165	1179
	High	1381	1337	1276	1238	1232
<b>31</b>	<b>*Low</b>	999	999	1003	1011	987
	Med	1252	1252	1252	1246	1200
	High	1500	1505	1508	1484	1424

Size	Speed	.10	.20	.30	.40	.50
<b>36</b>	Low	999	999	1003	1011	987
	<b>*Med</b>	1252	1252	1252	1246	1200
	High	1500	1505	1508	1484	1424
<b>42</b>	Low	1090	1090	1099	1088	1053
	<b>*Med</b>	1491	1432	1415	1379	1361
	High	1609	1609	1578	1507	1499
<b>48</b>	Low	1220	1168	1153	1099	1024
	<b>*Med</b>	1670	1639	1595	1522	1457
	High	1874	1874	1802	1718	1612
<b>60</b>	Low	1500	1505	1506	1494	1483
	<b>*Med</b>	1995	1996	1952	1907	1870
	High	2245	2248	2151	2049	2014

## **Five-Speed High Efficiency Motor Blower Performance (CFM vs. ESP inches H2O)**

All data is given while air handler is operating with a dry DX coil and air filter installed.

**Tap 3** is the factory speed setting for all models.

settings for both heating and cooling.

Cooling speeds should not be reduced below factory setting.

Different speeds can be set for heating mode.

See installation instructions for changing speeds and minimum settings on electric heat.

<b>Model: 18</b>	<b>0.10</b>	<b>0.20</b>	<b>0.30</b>	<b>0.35</b>	<b>0.40</b>	<b>0.45</b>	<b>0.50</b>	<b>0.60</b>
<b>Tap 1</b>	492	448	393	361	361	333	307	273
<b>Tap 2</b>	513	471	420	414	384	357	325	318
<b>Tap 3</b>	667	641	615	605	596	577	567	560
<b>Tap 4</b>	705	673	665	648	630	621	603	590
<b>Tap 5</b>	721	689	673	656	639	629	612	590

<b>Model: 24</b>	<b>0.10</b>	<b>0.20</b>	<b>0.30</b>	<b>0.35</b>	<b>0.40</b>	<b>0.45</b>	<b>0.50</b>	<b>0.60</b>
<b>Tap 1</b>	732	627	590	581	571	545	536	525
<b>Tap 2</b>	671	634	594	578	573	546	493	480
<b>Tap 3</b>	892	859	832	828	818	797	790	775
<b>Tap 4</b>	911	866	839	832	825	818	804	760
<b>Tap 5</b>	924	886	846	832	825	818	797	780

<b>Model: 25/30</b>	<b>0.10</b>	<b>0.20</b>	<b>0.30</b>	<b>0.35</b>	<b>0.40</b>	<b>0.45</b>	<b>0.50</b>	<b>0.60</b>
<b>Tap 1</b>	871	830	778	722	671	635	625	586
<b>Tap 2</b>	906	859	809	779	715	689	654	635
<b>Tap 3</b>	1085	1070	1048	1036	1024	1001	989	975
<b>Tap 4</b>	1125	1103	1087	1059	1047	1024	1012	983
<b>Tap 5</b>	1176	1146	1114	1098	1081	1059	1047	1029

<b>Model: 31/36/37</b>	<b>0.10</b>	<b>0.20</b>	<b>0.30</b>	<b>0.35</b>	<b>0.40</b>	<b>0.45</b>	<b>0.50</b>	<b>0.60</b>
<b>Tap 1</b>	882	887	826	804	766	760	755	695
<b>Tap 2</b>	1082	1037	1025	1002	990	959	921	881
<b>Tap 3</b>	1270	1250	1238	1228	1214	1189	1179	1162
<b>Tap 4</b>	1290	1275	1265	1246	1236	1227	1212	1172
<b>Tap 5</b>	1335	1315	1301	1287	1278	1259	1240	1225

<b>Model: 42</b>	<b>0.10</b>	<b>0.20</b>	<b>0.30</b>	<b>0.35</b>	<b>0.40</b>	<b>0.45</b>	<b>0.50</b>	<b>0.60</b>
<b>Tap 1</b>	1008	907	861	832	803	772	717	671
<b>Tap 2</b>	1292	1243	1202	1192	1171	1149	1127	1070
<b>Tap 3</b>	1447	1430	1404	1377	1359	1340	1322	1283
<b>Tap 4</b>	1534	1502	1476	1459	1433	1416	1398	1362
<b>Tap 5</b>	1559	1519	1502	1477	1460	1434	1417	1381

<b>Model: 48</b>	<b>0.10</b>	<b>0.20</b>	<b>0.30</b>	<b>0.35</b>	<b>0.40</b>	<b>0.45</b>	<b>0.50</b>	<b>0.60</b>
<b>Tap 1</b>	1585	1494	1320	1252	1210	1151	1120	1088
<b>Tap 2</b>	1510	1463	1414	1389	1363	1324	1256	1228
<b>Tap 3</b>	1675	1633	1579	1556	1545	1510	1487	1451
<b>Tap 4</b>	1737	1697	1655	1633	1612	1590	1568	1545
<b>Tap 5</b>	1781	1731	1679	1658	1637	1615	1593	1571

<b>Model: 60</b>	<b>0.10</b>	<b>0.20</b>	<b>0.30</b>	<b>0.35</b>	<b>0.40</b>	<b>0.45</b>	<b>0.50</b>	<b>0.60</b>
<b>Tap 1</b>	1394	1342	1288	1251	1172	1109	1077	1025
<b>Tap 2</b>	1722	1666	1623	1594	1564	1534	1518	1471
<b>Tap 3</b>	2083	2048	2013	1990	1972	1947	1929	1885
<b>Tap 4</b>	2179	2135	2101	2079	2056	2039	2021	1937
<b>Tap 5</b>	2209	2166	2122	2101	2057	2058	2047	1956

### Three-Speed Motor - Electrical Data (208/240 V, 60 Hz, 1 ph.)

Air Handler Size	Elec. Heating Cap.		Blower Amps		Minimum Circuit Ampacity		Circuit Breaker Amps per Stage	
	Kw	BTUH	208 V	240 V	208 V	240 V	1	2
	(1) 240 V	(1) 240 V						
<b>18, 24 &amp; 25 (No Heat)</b>	0	0	2.0	1.9	2.5	2.4	15	-
<b>18, 24 &amp; 25</b>	5	17,065	2.0	1.9	25.1	28.4	30	-
<b>18, 24 &amp; 25</b>	7.5	25,598	2.0	1.9	36.4	41.4	45	-
<b>18, 24 &amp; 25</b>	10	34,130	2.0	1.9	47.6	54.5	60	-
<b>30, 31, 36 &amp; 37 (No Heat)</b>	0	0	2.8	2.6	3.5	3.3	15	-
<b>30, 31, 36 &amp; 37</b>	5	17,065	2.8	2.6	26.1	29.3	30	-
<b>30, 31, 36 &amp; 37</b>	7.5	25,598	2.8	2.6	37.4	42.3	45	-
<b>30, 31, 36 &amp; 37</b>	10	34,130	2.8	2.6	48.6	55.3	60	-
<b>30, 31, 36 &amp; 37</b>	<b>15</b>	51,195	2.8	2.6	71.2	81.4	60	30
<b>42 (No Heat)</b>	0	0	3.2	3.0	4.0	3.8	15	-
<b>42</b>	5	17,065	3.2	3.0	26.6	29.8	30	-
<b>42</b>	7.5	25,598	3.2	3.0	37.9	42.8	45	-
<b>42</b>	10	34,130	3.2	3.0	49.1	55.8	60	-
<b>42</b>	<b>15</b>	51,195	3.2	3.0	71.7	81.9	60	30
<b>48 &amp; 60 (No Heat)</b>	0	0	4.6	4.3	5.8	5.4	15	-
<b>48 &amp; 60</b>	7.5	25,598	4.6	4.3	39.6	44.4	45	-
<b>48 &amp; 60</b>	10	34,130	4.6	4.3	50.9	57.5	60	-
<b>48 &amp; 60</b>	<b>15</b>	51,195	4.6	4.3	73.5	83.5	60	30
<b>48 &amp; 60</b>	<b>20</b>	68,260	4.6	4.3	96.0	109.5	60	60

(1) For 208 volt use .751 correction factor for Kw & BTUH.

Kw packages in bold indicates that these heat packages require and include circuit breakers. Optional for others.

### Five-Speed High Efficiency Motor - Electrical Data (240 V, 60 Hz, 1 ph.)

Air Handler Size	Elec. Heating Cap.		Blower Amps	Minimum Circuit Ampacity	Circuit Breaker Amps per Stage	
	Kw	BTUH			1	2
	(1) 240 V	(1) 240 V	240 V	240 V		
<b>18, 24 &amp; 25 (No Heat)</b>	0	0	3.0	3.0	15	-
<b>18, 24 &amp; 25</b>	5	17,065	3.0	29.8	30	-
<b>18, 24 &amp; 25</b>	7.5	25,598	3.0	42.8	45	-
<b>18, 24 &amp; 25</b>	10	34,130	3.0	55.8	60	-
<b>30, 31, 36, 37, &amp; 42 (No Heat)</b>	0	0	3.0	3.0	15	-
<b>30, 31, 36, 37, &amp; 42</b>	5	17,065	3.0	29.8	45	-
<b>30, 31, 36, 37, &amp; 42</b>	7.5	25,598	3.0	42.8	45	-
<b>30, 31, 36, 37, &amp; 42</b>	10	34,130	3.0	55.8	60	-
<b>30, 31, 36, 37, &amp; 42</b>	<b>15</b>	51,195	3.0	81.9	60	30
<b>48 (No Heat)</b>	0	0	3.2	3.2	15	-
<b>48</b>	5	17,065	3.2	30.0	30	-
<b>48</b>	7.5	25,598	3.2	43.1	45	-
<b>48</b>	10	34,130	3.2	56.1	60	-
<b>48</b>	<b>15</b>	51,195	3.2	82.1	60	30
<b>48</b>	<b>20</b>	68,260	3.2	108.2	60	60
<b>60 (No Heat)</b>	0	0	4.6	4.6	15	-
<b>60</b>	7.5	25,598	4.6	44.8	45	-
<b>60</b>	10	34,130	4.6	57.8	60	-
<b>60</b>	<b>15</b>	51,195	4.6	83.9	60	30
<b>60</b>	<b>20</b>	68,260	4.6	109.9	60	60

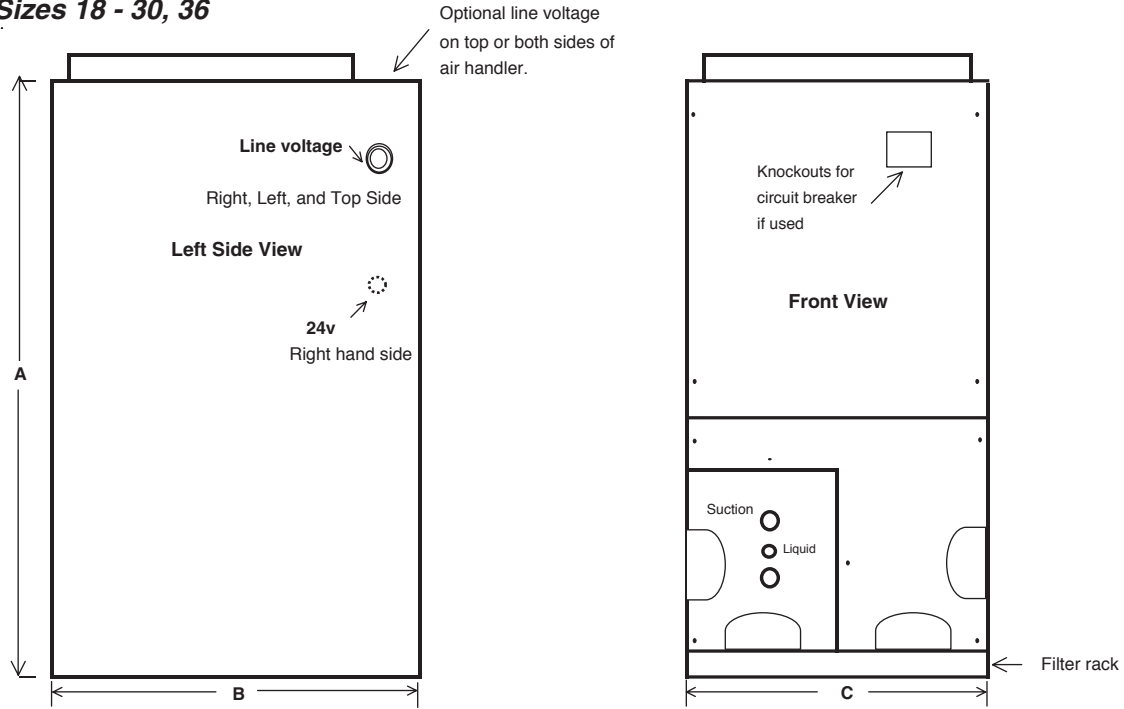
(1) For 208 volt use .751 correction factor for Kw & BTUH.

Kw packages in bold indicates that these heat packages require and include circuit breakers.

Optional for others.

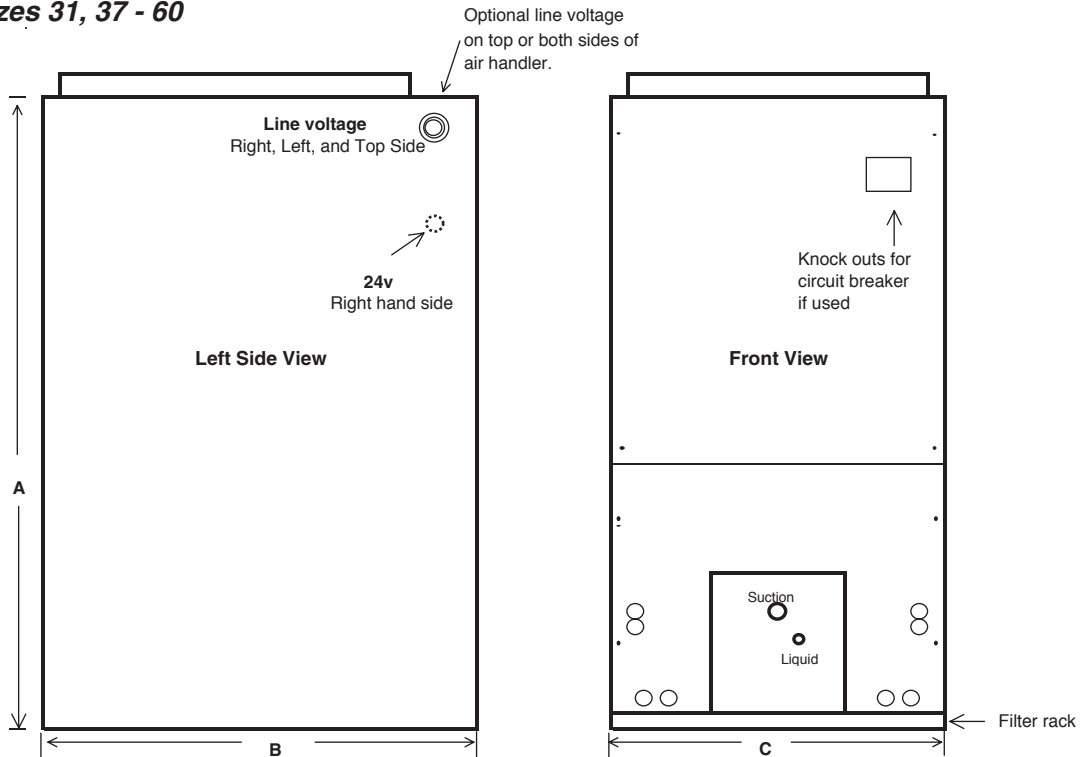
## Dimensions

### Sizes 18 - 30, 36



Unit Size	A	B	C	Supply Duct Opening		Return Duct Opening	
				Depth	Width	Depth	Width
18, 24	36"	22"	15"	17"	13"	20.35"	12.20"
25, 30 & 36	41"	22"	18 1/2"	17"	16.5"	20.35"	16.20"

### Sizes 31, 37 - 60



Unit Size	A	B	C	Supply Duct Opening		Return Duct Opening	
				Depth	Width	Depth	Width
31, 37- 60	48"	26"	21 7/8"	21"	20"	24.60 "	20.08"