

Installation, Start-Up and Service Instructions

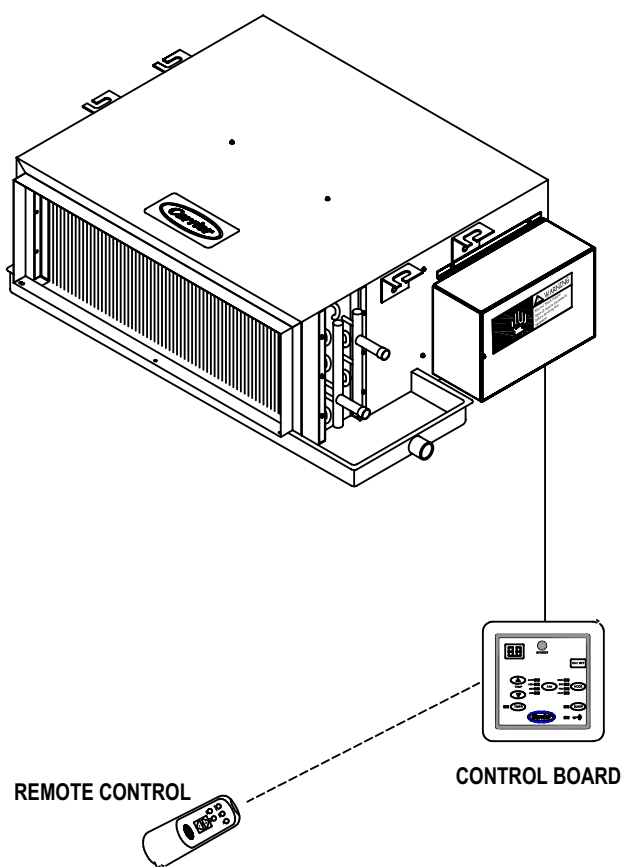


Fig. 1 - 42TW Unit

SAFETY CONSIDERATIONS

Installation and servicing air-conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified service personnel should install, repair, or service air conditioning equipment.

Untrained personnel can perform basic maintenance functions of cleaning coils and filters and replacing filters.

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 unit, and other safety precautions that may apply.

Follow all safety codes. Wear safety glasses and work gloves. Use quenching cloth for un-brazing operations. Have fire extinguishers available for all brazing operations.

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WARNING

ELECTRIC SHOCK HAZARD To avoid the possibility of electrical shock, open and tag all service switches before installing this equipment.

INTRODUCTION

This document contains general installation instructions for the 42TW unit Fan Coils. Refer to the unit-wiring diagram installed on the blower housing or specific manufacturer literature for any other type of factory-mounted controls.

See drawings for unit configurations, dimensions, clearances, and pipe connections. Refer to unit wiring label for all electrical connections; follow NEC (National Electrical Code) and local codes.

RECEIVING

42TW fan coil units are shipped individually packed in carton boxes. When cartons are individually off loaded from the truck, do not roll, nor throw, or drop the carton to avoid damage to the contents. Store boxes upright as the symbols on the boxes indicated. Do not stack units more than 6 units high for size 11-16 and 8 units high for other sizes.

INSPECTION

Check the shipment against shipping list and remove unit from the carton and take off protective covering. If the unit has been

damaged, file claim with transportation company and notify Carrier immediately.

PROTECTION

Protection unit from damage caused by job site debris. Do not allow dust, debris and water to get into the unit. These will damage unit's component and unit's performance will be affected.

PRELIMINARY CHECK

Following is a checklist which should be checked before the installation is started. The installer should be familiar with each of the following requirements before the actual installation.

- Space requirement and clearance, See Fig.3.
- Ceiling or mounting strength.
- Piping connections.
- Condensate drain connection.
- Power supply and wiring.
- Air duct connections.

Table.1 - Physical Data - 42TW3, 42TD3 – 2 Pipe System

Model 42TW3 Model 42TD3	Size							
	03	05	06	07	09	11	12	16
CFM*	348	592	692	780	883	1181	1385	1572
Cooling Capacity (kw)*	3.4	6.1	7.5	8.9	9.9	11.5	14.5	16.9
Colling Capacity (kbtuh)	11.7	20.7	25.6	30.4	33.8	39.2	49.5	57.7
SHR	0.75	0.74	0.72	0.71	0.71	0.75	0.73	0.73
Power Supply	208-230, 1 ph, 60 Hz / 220-240, 1 ph, 50 Hz / 110-127, 1 ph, 60 Hz							
Motor HP(Nominal)	1/15		1/10			1/15		1/10
Input Watts (Med Speed, 25 Pa ESP)	56	64	70	80	80	130	146	160
Number of Motors	1, 3 Speed					2, 3 Speed		
Coil Material	Smooth copper tubes/ Aluminum fins with double wavey fin							
Coil Face Area, m^2	0.11	0.15	0.21	0.26	0.31	0.31	0.44	0.52
Coil Connection Type	Sweat Type							
Coil Connection Size	5/8 Inch				7/8 Inch			
Number of Rows	3							
Fin Denisty/ Inch	14							
Drain Diameter	5/8 Inch							
Blower type	Direct drive forward curved centerifugal fan							
Blower Number	1	2				4		
Blower Diameter / Width, mm	156/220	156/170	156/220			156/170		156/220
Filter Type	Washable Aluminum Filter							
Width, mm	640	800	1010	1220	1430	1430	1430	1640
Depth, mm	590							
Height, mm	275						375	
Net Weight, kg	18	23	28	32	39	43	49	56

* At 26.7/19 c approach 6.7c water inlet/12.7c water outlet, High speed @ 0 Static

Table.2 - Physical Data - 42TW4,42TD4 – 2 Pipe System

Model 42TW4 Model 42TD 4	Size							
	03	04	05	06	08	10	11	14
CFM*	313	533	623	702	795	1065	1247	1416
Cooling Capacity (kw)*	3.8	6.2	7.7	9.0	9.9	12.7	15.7	17.6
Colling Capacity (kbtuh)	13.0	21.0	26.3	30.8	33.7	43.3	53.6	60.1
SHR	0.69	0.71	0.69	0.69	0.69	0.7	0.68	0.69
Power Supply	208-230, 1 ph, 60 Hz / 220-240, 1 ph, 50 Hz / 110-127, 1 ph, 60 Hz							
Motor HP (Nominal)	1/15		1/10			1/15		1/10
Input Watts (Med Speed, 25 Pa ESP)	52	60	65	75	75	121	136	150
Number of Motors	1, 3 Speed					2, 3 Speed		
Coil Material	Smooth copper tubes/ Aluminum fins with double wavey fin							
Coil Face Area	0.11	0.15	0.21	0.26	0.31	0.31	0.44	0.52
Coil Connection Type	Sweat Type							
Coil Connection Size	5/8 Inch				7/8 Inch			
Number of Rows	4							
Fin Denisty/ Inch	14							
Drain Diameter	5/8 Inch							
Blower type	Direct drive forward curved centerifugal fan							
Blower Number	1	2				4		
Blower Diameter / Width	156/220	156/170	156/220			156/170		156/220
Filter Type	Washable Aluminum Filter							
Width	640	800	1010	1220	1430	1430	1430	1640
Depth	590							
Height	275						375	
Net Weight	19	24	29	33	41	45	51	58

* At 26.7/19 c approach 6.7c water inlet/12.7c water outlet, High speed @ 0 Static

Table.3 - Physical Data - 42TW4, 42TD4 – 4 Pipe System

Model 42TW4 Model 42TD4	Size							
	03	04	05	06	08	10	11	14
CFM*	313	533	623	702	795	1065	1247	1416
Cooling Capacity (kw)*	3.4	5.3	6.9	8.0	8.9	11.2	14.1	15.9
Colling Capacity (kbtuh)	11.6	18.1	23.5	27.3	30.4	38.2	48.1	54.3
Heating Capacity (kw)**	2.9	5.5	6.8	7.9	9.4	12.2	13.9	17.5
Heating Capacity (kbtuh)	9.9	18.8	23.2	27.0	32.1	41.6	47.4	59.7
Power Supply	208-230, 1 ph, 60 Hz / 220-240, 1 ph, 50 Hz / 110-127, 1 ph, 60 Hz							
Motor HP (Nominal)	1/15		1/10			1/15		1/10
	52	60	65	75	75	121	136	150
Number of Motors	1, 3 Speed					2, 3 Speed		
Coil Material	Smooth copper tubes/ Aluminum fins with double wavey fin							
Coil Face Area	0.11	0.15	0.21	0.26	0.31	0.31	0.44	0.52
Coil Connection Type	Sweat Type							
Coil Connection Size Cool & Heat	3/4 Inch & 5/8 Inch							
Number of Rows	4							
Fin Denisty/ Inch	14							
Drain Diameter	5/8 Inch							
Blower type	Direct drive forward curved centerifugal fan							
Blower Number	1	2				4		
Blower Diameter / Width	156/220	156/170	156/220			156/170		156/220
Filter Type	Washable Aluminum Filter							
Unit Dimensions								
Width, mm	640	800	1010	1220	1430	1430	1430	1640
Depth, mm	590							
Height, mm	275						375	
Net Weight	19	24	29	33	41	45	51	58

* At 26.7/19 c approach 6.7c water inlet/12.7c water outlet, High speed @ 0 Static

** At 20 /14 c approach 70c water inlet/61.6c water outlet, High speed @ 0 Static

Table.4 a - POWER CONSUMPTION 42TW,42TD 3ROW

42TW,42TD – 3 Row		@ 0 Pa ESP			@ 25 Pa ESP			@ 50 Pa ESP		
		Hi	Med	Low	Hi	Med	Low	Hi	Med	Low
-03	Amps	0.40	0.35	0.30	0.34	0.28	0.24	0.30	0.25	0.20
	Watts	80	70	60	68	56	48	60	50	40
-05	Amps	0.45	0.40	0.35	0.37	0.32	0.27	0.33	0.28	0.22
	Watts	90	80	70	74	64	54	66	56	44
-06	Amps	0.55	0.45	0.35	0.45	0.35	0.27	0.40	0.30	0.22
	Watts	110	90	70	90	70	54	80	60	44
-07	Amps	0.60	0.50	0.40	0.50	0.40	0.30	0.45	0.35	0.25
	Watts	120	100	80	100	80	60	90	70	50
-09	Amps	0.60	0.50	0.40	0.50	0.40	0.30	0.45	0.35	0.25
	Watts	120	100	80	100	80	60	90	70	50
-11	Amps	0.90	0.80	0.70	0.75	0.65	0.55	0.65	0.55	0.45
	Watts	180	160	140	150	130	110	130	110	90
-12	Amps	1.10	0.90	0.70	0.90	0.73	0.55	0.80	0.62	0.45
	Watts	220	180	140	180	146	110	160	124	90
-16	Amps	1.20	1.00	0.80	1.00	0.80	0.62	0.80	0.70	0.50
	Watts	240	200	160	200	160	124	160	140	100

Table.4 b

42TW,42TD – 4 Row		@ 0 Pa ESP			@ 25 Pa ESP			@ 50 Pa ESP		
		Hi	Med	Low	Hi	Med	Low	Hi	Med	Low
-03	Amps	0.37	0.33	0.28	0.33	0.27	0.23	0.29	0.24	0.20
	Watts	73	64	55	64	52	45	57	48	38
-04	Amps	0.42	0.37	0.33	0.36	0.31	0.26	0.32	0.27	0.22
	Watts	82	73	64	69	60	50	63	53	42
-05	Amps	0.51	0.42	0.33	0.43	0.34	0.26	0.39	0.29	0.22
	Watts	100	82	64	84	65	50	76	57	42
-06	Amps	0.56	0.47	0.37	0.48	0.38	0.29	0.44	0.34	0.24
	Watts	109	91	73	93	75	56	86	67	48
-08	Amps	0.56	0.47	0.37	0.48	0.38	0.29	0.44	0.34	0.24
	Watts	109	91	73	93	75	56	86	67	48
-10	Amps	0.84	0.75	0.65	0.72	0.62	0.53	0.64	0.54	0.44
	Watts	164	145	127	140	121	103	124	105	86
-11	Amps	1.03	0.84	0.65	0.86	0.70	0.53	0.78	0.61	0.44
	Watts	200	164	127	168	136	103	152	118	86
-14	Amps	1.12	0.93	0.75	0.96	0.77	0.60	0.78	0.68	0.49
	Watts	218	182	145	187	150	116	152	133	95

Note: For 220V, 1 Phase Motor.

Table.5 a -SOUND PRESSURE

42TW,42TD – 3 Row		@ 0 Pa ESP			@ 25 Pa ESP			@ 50 Pa ESP		
		Hi	Med	Low	Hi	Med	Low	Hi	Med	Low
42TW3-03		47.5	45.5	43.5	46.5	44.0	42.5	45.5	42.5	41.0
42TW3-05		48.5	46.5	44.5	47.5	45.0	43.5	46.5	43.5	42.0
42TW3-06		50.0	48.0	46.0	49.0	46.5	45.0	48.0	45.0	43.5
42TW3-07		50.5	48.5	46.5	49.5	47.0	45.5	48.5	45.5	44.0
42TW3-09		50.0	48.0	46.0	49.5	47.0	45.5	48.5	45.5	43.5
42TW3-11		51.0	49.0	47.0	50.0	47.5	46.0	49.0	46.0	44.0
42TW3-12		51.0	49.0	47.0	50.0	47.5	46.0	49.0	46.0	44.5
42TW3-16		51.5	49.5	47.5	50.5	48.0	46.5	49.5	46.5	45.0

Table.5 b

42TW – 4 Row		@ 0 Pa ESP			@ 25 Pa ESP			@ 50 Pa ESP		
		Hi	Med	Low	Hi	Med	Low	Hi	Med	Low
42TW4-03		46.5	44.5	42.5	46.0	43.5	42.0	45.0	42.0	40.5
42TW4-04		47.5	45.5	43.5	47.0	44.5	43.0	46.0	43.0	41.5
42TW4-05		49.0	47.0	45.0	48.5	46.0	44.5	47.5	44.5	43.0
42TW4-06		49.5	47.5	45.5	49.0	46.5	45.0	48.0	45.0	43.5
42TW4-08		49.0	47.0	45.0	49.0	46.5	45.0	48.0	45.0	43.0
42TW4-10		50.0	48.0	46.0	49.5	47.0	45.5	48.5	45.5	43.5
42TW4-11		50.0	48.0	46.0	49.5	47.0	45.5	48.5	45.5	44.0
42TW4-14		50.5	48.5	46.5	50.0	47.5	46.0	49.0	46.0	44.5

Note: Assumes "standard room ", 3 meters from exit, no ducts, ducts will further reduce sound

Table.6 a - Fan Performance – 42TW - 3 - SI

42TW3 Air Flow (m ³ /hr)												
Ex. Static Pres. Pa	0			12.5			25			37.5		
Unit Size	H	M	L	H	M	L	H	M	L	H	M	L
03	592	515	466	568	481	423	544	446	380	502	402	315
05	1005	846	694	940	761	629	875	676	564	794	600	473
06	1176	995	931	1132	943	845	1088	891	759	1024	791	634
07	1325	1174	1031	1284	1090	938	1243	1006	845	1158	896	752
09	1500	1285	1120	1420	1178	1011	1340	1071	902	1230	968	776
11	2007	1690	1385	1879	1521	1257	1751	1352	1129	1589	1200	946
12	2353	1991	1862	2265	1886	1690	2177	1781	1518	2048	1582	1268
16	2671	2349	2062	2569	2180	1876	2467	2011	1690	2315	1791	1504

42TW3 Air Flow (m ³ /hr)									
Ex. Static Pres. Pa	50			62.5			75		
Unit Size	H	M	L	H	M	L	H	M	L
03	460	358	250	380	270	–	305	–	–
05	718	541	389	625	439	–	524	–	–
06	919	715	499	737	541	–	559	–	–
07	1031	788	634	890	651	–	769	–	–
09	1120	865	650	1000	740	–	862	–	–
11	1437	1082	777	1251	879	–	1048	–	–
12	1839	1430	997	1437	1055	–	1091	–	–
16	2062	1575	1268	1770	1295	–	1530	–	–

H – At High Fan Speed.

M – At Medium Fan Speed.

L – At Low Fan Speed.

Table.6 b - Fan Performance – 42TW - 4 - SI

42TW4 Air Flow (m ³ /hr)												
Ex. Static Pres. Pa	0			12.5			25			37.5		
Unit Size	H	M	L	H	M	L	H	M	L	H	M	L
03	532	463	419	517	437	383	502	411	350	467	373	292
05	905	764	625	855	693	572	805	622	519	738	558	440
06	1059	896	840	1030	858	769	1001	820	698	952	736	590
07	1192	1058	931	1168	992	854	1144	926	777	1077	833	699
09	1350	1156	1007	1291	1072	919	1232	987	831	1148	900	717
10	1809	1524	1249	1710	1384	1144	1611	1244	1039	1478	1116	880
11	2119	1793	1679	2061	1716	1538	2003	1639	1397	1905	1471	1179
14	2406	2118	1859	2338	1984	1707	2270	1850	1555	2153	1666	1399

42TW4 Air Flow (m ³ /hr)									
Ex. Static Pres. Pa	50			62.5			75		
Unit Size	H	M	L	H	M	L	H	M	L
03	433	336	235	363	279	–	296	–	–
05	675	509	366	594	417	–	503	–	–
06	864	672	469	700	514	–	537	–	–
07	969	741	596	846	618	–	738	–	–
09	1063	813	602	950	715	–	825	–	–
10	1351	1017	730	1188	835	–	1006	–	–
11	1729	1344	937	1365	1002	–	1047	–	–
14	1938	1481	1192	1682	1230	–	1469	–	–

H – At High Fan Speed.

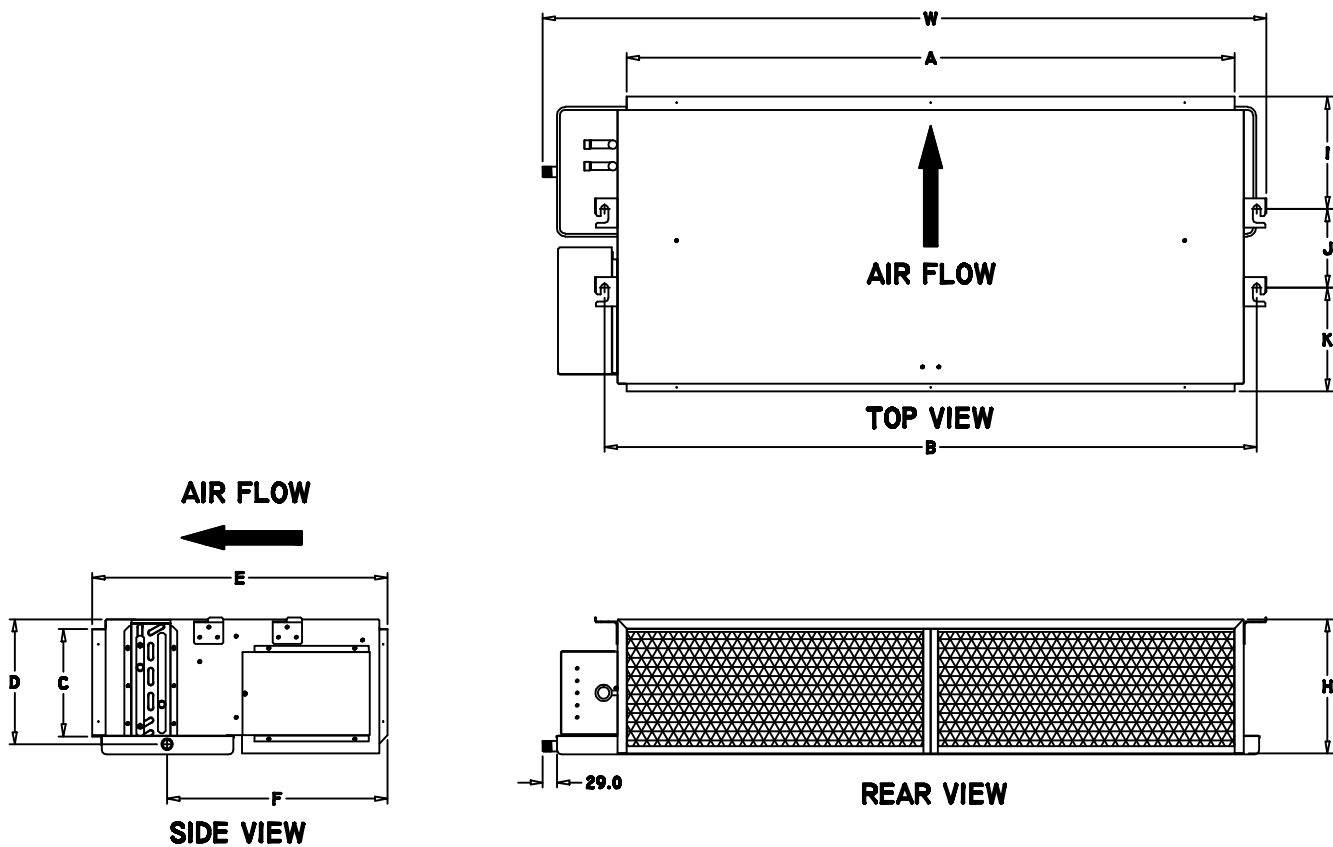
M – At Medium Fan Speed.

L – At Low Fan Speed.

BASE UNIT DIMENSION

Notes:

- The piping connections drain pan outlet and control box are located on the right hand side facing the airflow as factory standard, They however can be relocated to the left hand side facing air flow in the field when needed.
- Unit should be installed for horizontal discharge only. Suspend horizontally using the factory-provided holes located at the topside flanges of the unit.



All Dimensions in mm		H	E	W	A	B	C	D	F	I	J	K
42TW/TD3-03	42TW/TD4-03	275	600	682	440	541	219	255	447	228	160	211
42TW/TD3-05	42TW/TD4-04	275	600	842	604	696	219	255	447	228	160	211
42TW/TD3-06	42TW/TD4-05	275	600	1052	814	906	219	255	447	228	160	211
42TW/TD3-07	42TW/TD4-06	275	600	1262	1024	1116	219	255	447	228	160	211
42TW/TD3-09	42TW/TD4-08	275	600	1472	1234	1326	219	255	447	228	160	211
42TW/TD3-11	42TW/TD4-10	275	600	1472	1234	1326	219	255	447	228	160	211
42TW/TD3-12	42TW/TD4-11	375	656	1472	1234	1326	319	355	447	228	216	211
42TW/TD3-16	42TW/TD4-14	375	656	1682	1444	1536	319	355	447	228	216	211

PREPARE JOSITE FOR UNIT INSTALLATION

To save time and to reduce the possibility of costly errors, set up a complete sample installation in a typical room at jobsite. Check all critical dimensions such as pipe, wire, and duct connection requirements. Refer to job drawings and product dimension drawings as required. Instruct all trades in their part of the installation.

IDENTIFY AND PREPARE UNITS

Be sure power requirements match available power source. Refer to unit nameplate and wiring diagram.

1. Check all tags on unit to determine if shipping screws are to be removed. Remove screws as directed.
2. Rotate the fan wheel by hand to ensure that the fan is unrestricted and can rotate freely. Check for shipping damage and fan obstructions.

UNIT CONFIGURATION

The piping connections, drain pan outlet and control box are located on the right side of the unit facing the airflow direction as factory standard as shown in the unit picture. Left hand side connection is factory option. However, the connections side can be relocated at site.

RIGGING AND UNPACKING

Unit should not be removed from carton until reaching final location to avoid damage. Inspect unit for shipping damage and file claim with transportation company if necessary, check nameplate voltage

against available power supply. For special installation, consult local building and electrical codes.

INSTALLATION

PLACING UNIT IN POSITION

1. Select the unit location. Allow adequate space for free air circulation, service clearances, piping and electrical connections, and any necessary ductwork, see fig.2. For specific unit dimensions, refer to the submittal drawings. Allow clearances according to the local and national electrical codes.
2. Be sure either the ceiling is able to support the weight of the unit. See Table 1-3 for nominal unit weight.
3. Move unit into position. Ensure unit is level or pitched towards drain to ensure proper drainage and operation.
4. Mounting units to the ceiling - When unit is lifted, access to the mounting holes is on the top panel of the unit. Hanger rods, fasteners, and other required hardware must be field-supplied.

MAKING PIPING CONNECTONS

Qualified personnel in accordance with local and national codes must perform all piping connections. Refer to Fig.2 for piping connections.

NOTE: It is important to have a common understanding of which side of the unit is the right hand side and which is the left hand side. When facing the supply air outlet from the front of the unit (air blowing in your face), your right hand will be on the right side of the unit and your left hand will be on the left side of the unit. See Fig. 5.

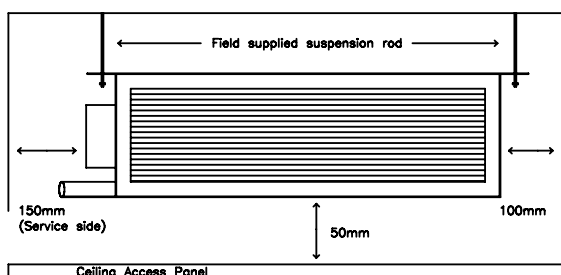


Fig.3 – Minimum clearance required.

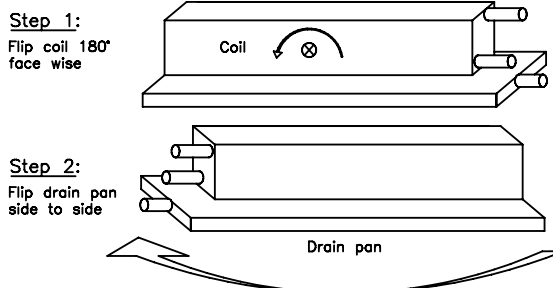


Fig4- Changing the coil connection side

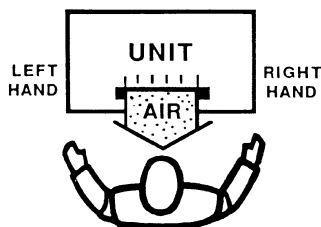


Fig.5 – Unit end reference

Table.7 - ELECTRIC HEATER OPTION* (2 Pipe System)

42TW 3 Rows Models	42TW 4 Rows Models	Heater option, watts
42TW3-03	42TW4-03	2000
42TW3-05	42TW4-04	2000
42TW3-06	42TW4-05	2000
42TW3-07	42TW4-06	2500
42TW3-09	42TW4-08	2500
42TW3-11	42TW4-10	4000
42TW3-12	42TW4-11	4000
42TW3-16	42TW4-14	4000

TEST AND INSULATE

When all joints are complete, perform hydrostatic test for leaks. Vent all coils at this time. Check interior unit piping for signs of leakage from shipping damage or mishandling. If leaks are found, notify a Carrier representative before initiating any repairs. Release trapped air from system (refer to Make Final Preparations section).

MAKE ELECTRICAL CONNECTIONS

Refer to unit nameplate for required supply voltage, fan and heater amperage and required circuit ampacity. Refer to unit wire diagram for unit and field wiring; see fig.6 . Make sure all electrical connections are in accordance with unit wiring diagram and all applicable codes. The fan motor(s) should never be controlled by any wiring or device other than the factory-supplied control board and remote control.

All field wiring must be in accordance with governing codes and ordinances. Any modification of unit wiring without factory authorization will invalidate all factory warranties and nullify any agency listings.

- Select proper wall location to fix display pad
- Connect communication cable end to its location in the PCB as shown in the wiring diagram.

IMPORTANT

Wiring diagrams shown depict typical control functions. Refer to unit wiring label for specific functions.

MAKE DUCT CONNECTIONS

Install all ductwork to and from unit in accordance with all applicable codes. Duct construction must allow unit to operate within duct external static pressure limits as shown on job submittals. Units designed to operate with ductwork may be damaged if operated without intended ductwork attached.

Units provided with outside air should have some method of low-temperature protection to prevent freeze-up. Insulate ductwork as required. Use flexible connections to

minimize duct-to-unit alignment problems and noise transmission where specified.

Set unit markings for minimum clearance to combustible materials and first 3 ft of ductwork. Install ductwork, accessory grilles and plenums so that they do not restrict access to filter.

Cut openings for supply-air and return-air grilles. Be careful not to cut wires, piping or structural supports.

CAUTION

Prevent dust and debris from settling in unit. If wall finish or color is to be spray applied, cover all openings to prevent spray from entering unit. Unit efficiency will be reduced.

MAKE FINAL PREPARATIONS

1. Turn off power to the unit (open unit electrical disconnect).
3. Clean dirt, dust, and other construction debris from unit interior. Be sure to check fan wheel and housing.
4. Rotate fan wheel by hand to be sure it is free and does not rub housing. Check that wing nuts securing fan assembly to fan deck are tight.
5. Ensure all panels and filters are installed before checking fan operation. Turn on power to the unit.

IMPORTANT

Do not start-up or operate unit without filter. Be sure filter and unit interior are clean.

8. Be sure drain line is properly and securely positioned and that the line is clear. Pour water into drain to check operation.

Controller For Ducted Fan Coil Units

Features: The controller is used to control air cooled ducted split unit, supports the following functions:

- Modes: Cool, Dry, Fan, Heat
- Indoor fan speed: Auto, High, Medium, Low
- Sleep mode
- Compressor protections:
 - Comp 3 minutes restart protection
 - Indoor coil anti-freeze
 - Room sensor and indoor coil sensor failure monitoring
- Non volatile memory – keep system settings
- Programmable On/Off timer
- Random restart to minimize voltage dip during compressor first cut in cycle upon power up.

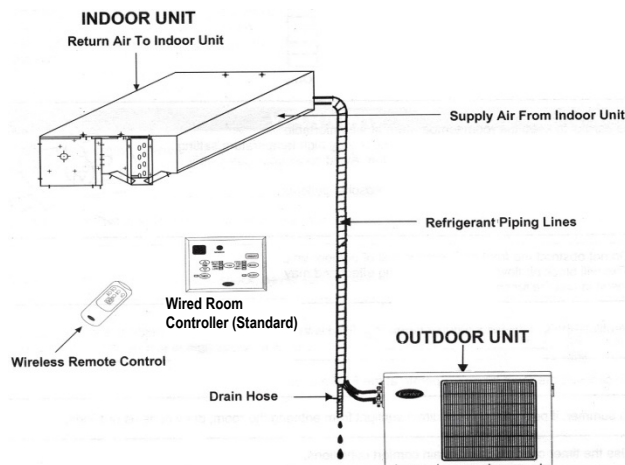
Hardware Setting: A 2 way DIP switch is used to configure:

DIP Switch	On	Off
SW1	Cool	Cool-Heat
SW2	Water System	DX System

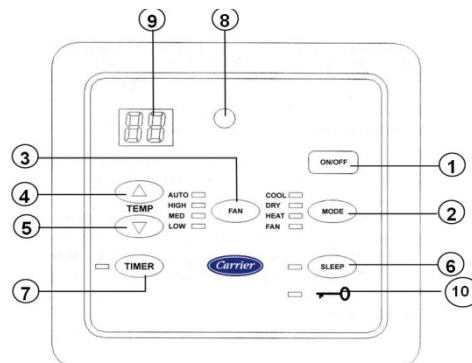
Error Code: If multiple faults happen at the same time, the corresponding error code will be shown one after another

Fault	Error code
Room sensor fault	E1
Indoor coil sensor fault	E2
Comp fault	E4

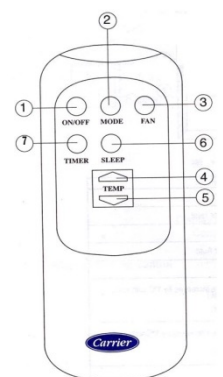
Split System Description



Wired Room Controller



Wireless Room Controller



Notes: The wired room controller is mounted on the wall and can control all system functions without wireless remote control.

1) On/Off Key: If you press this key, the system will begin operation, Press the key again, and operation stops. (You can hear a receiving beep). If you press this key immediately after turning off the system, the compressor will not operate for 3 minutes to prevent overloading.

2) Operation Mode Selection Key: Toggles the operation mode: Cool, Dry, Heat, or Fan only

- "COOL" Led Lights on when selecting COOL mode.
- "DRY" Led Lights on when selecting DRY mode.
- "HEAT" Led Lights on when selecting Heat mode.
- "FAN" Led Lights on when selecting FAN mode.

3) Fan Speed Selection Key: Toggles the fan speed: Auto, High, Medium, or Low, Note: Fan key is invalid in Dry mode.

4) Temperature Up Key: By pressing Temperature up Key, the setting temperature increases by 1°C with each press.

5) Temperature Down Key: By pressing temperature down key, the setting temperature decreases by 1°C with each press. If you set the desired room temperature, then system will maintain the room temperature as set. Upon setting the desired room temperature the system will maintain the room temperature

Cool Mode: If the room temperature is higher than the setting, the compressor will automatically turn on provide a cooling effect. On the hand, if the room temperature is lower than the setting, the compressor will automatically turn off to stop cooling operation. If indoor fan is programed to be turned off with comp signal, it will turn off once comp is cut off

Heat Mode: If the room temperature is lower than the setting, the Electric heater will automatically turn on to provide a heating effect. If the room temperature is higher than the setting, the heater will automatically turn off to stop heating operation. If indoor fan is programed to be turned off with heater signal, it will turn off once heater is cut off but subject to 30 sec dispersing remaining heat timing.

Dry Mode: The fan speed runs automatically at low speed and compressor stopping and running is controlled by the difference between room and setting temperatures and by continuous running time. If indoor fan is programed to be turned off with comp signal, it will turn off once comp is cut off

- In Dry mode, the humidity is reduced in the space to be air-conditioned.

Fan Mode: There will be no cooling or heating effects; only the fans of indoor unit will run for ventilation at the selected speed (High, Med, and Low).

- In COOL or HEAT mode and if AUTO fan speed is selected; Fan speed is automatically selected by controller according to the difference between setting temperature and room temperature, fan will be continuously running at low speed after setting temperature is achieved.

Notes:

- Temperature setting range is 16°C to 30°C or 60°F to 85°F.
- Hold down at the same time for about 5 seconds, Temp down and fan keys will toggle the temperature setting from degree C to degree F and vice versa.
- Press any temperature key will flash the current setting temperature for 4 seconds, Should there be no further key press, it will revert to room temperature display. Temperature display range is 0 C to 50 C or 32 F to 99 F.
- Temp keys are invalid in Fan mode.

6) Sleep Key: Press this key to set the SLEEP timer and then the sleep led will light on, to cancel the sleep timer press this key again.

- Sleep function for healthy sleep to control automatically the room temperature and stop automatically the operation of the air conditioner after certain set off time.
- Sleep mode is valid in cool or heat mode and invalid in Fan mode.

7) Timer Key: Upon count down of the set hours, the system will switch from OFF to ON or vice-versa.

- OFF Timer Function to stop automatically, the air conditioner after certain set OFF time.
 - ON Timer Function to start automatically, the air conditioner after certain set ON time.
 - * Timer setting is 1 Hour to 24 Hour. The timer led will light on when operating the Timer Function
- First key press will flash the digital display and Timer Led for 3 seconds.

Notes:





- The digital displays show the number of hours previously set, only the Timer Led flashes.
- Subsequent 3 seconds will show the number of hours previously set; only the timer led flashes.
- Should there be no further key press, it will revert to normal mode.
- Should Timer key is not released timer setting will increase automatically every 0.5-second.

8) Sensor: Receives the remote controller's signal

9) Display Screen: Displays the set temperature and displays also the TIMER settings when adjusting it.

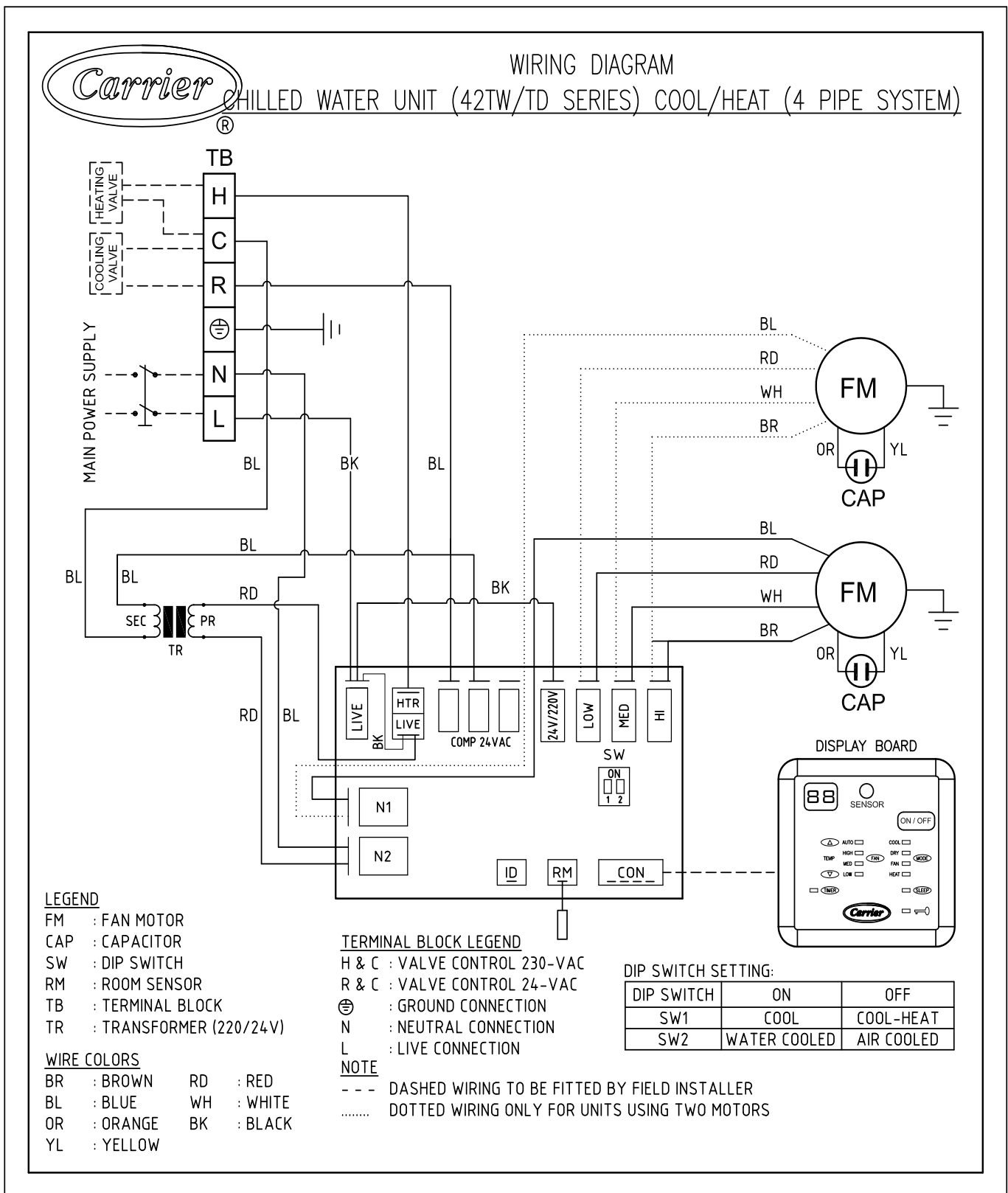
10) Key Lock Mode: To activate key lock mode, hold down for 3 seconds, temp. Down Key (5) and Mode Key (2). In key lock mode, all keys are not valid except ON/OFF Key (1) to turn ON/OFF the system.

Notes:

- Hold down Temp Down and Sleep button for one second to enter into coil temperature display mode. Press Temp Up key to display indoor coil temperature, High Fan LED flashes. With the same sequence to exit coil temperature display mode. Temperature display range is -9C to 78 °C.
- Hold down  and  buttons for only 1 second (5 sec to toggle between °C and °F temperature) to activate temperature display setting and auto fan LED flashes. Repeat the same sequence to cancel this function. Press  or  button to change the setting from 1 to 2. "1" means disable room temperature display and "2" means enable room temperature display.

Menu	Parameter	Set Range	Default value	Remarks
1	Temperature display, Auto fan LED flashing	1~2	1	1: Disable room temp display
				2: Enable room temp display
2	Cool mode fan control function, Auto & High fan LED flashing	1~2	1	1: Comp OFF, Fan ON
				2: Comp OFF, Fan OFF
3	Heat mode fan control function, Auto & Medium fan LED flashing	1~2	1	1: Heater OFF, Fan ON
				2: Heater OFF, Fan OFF

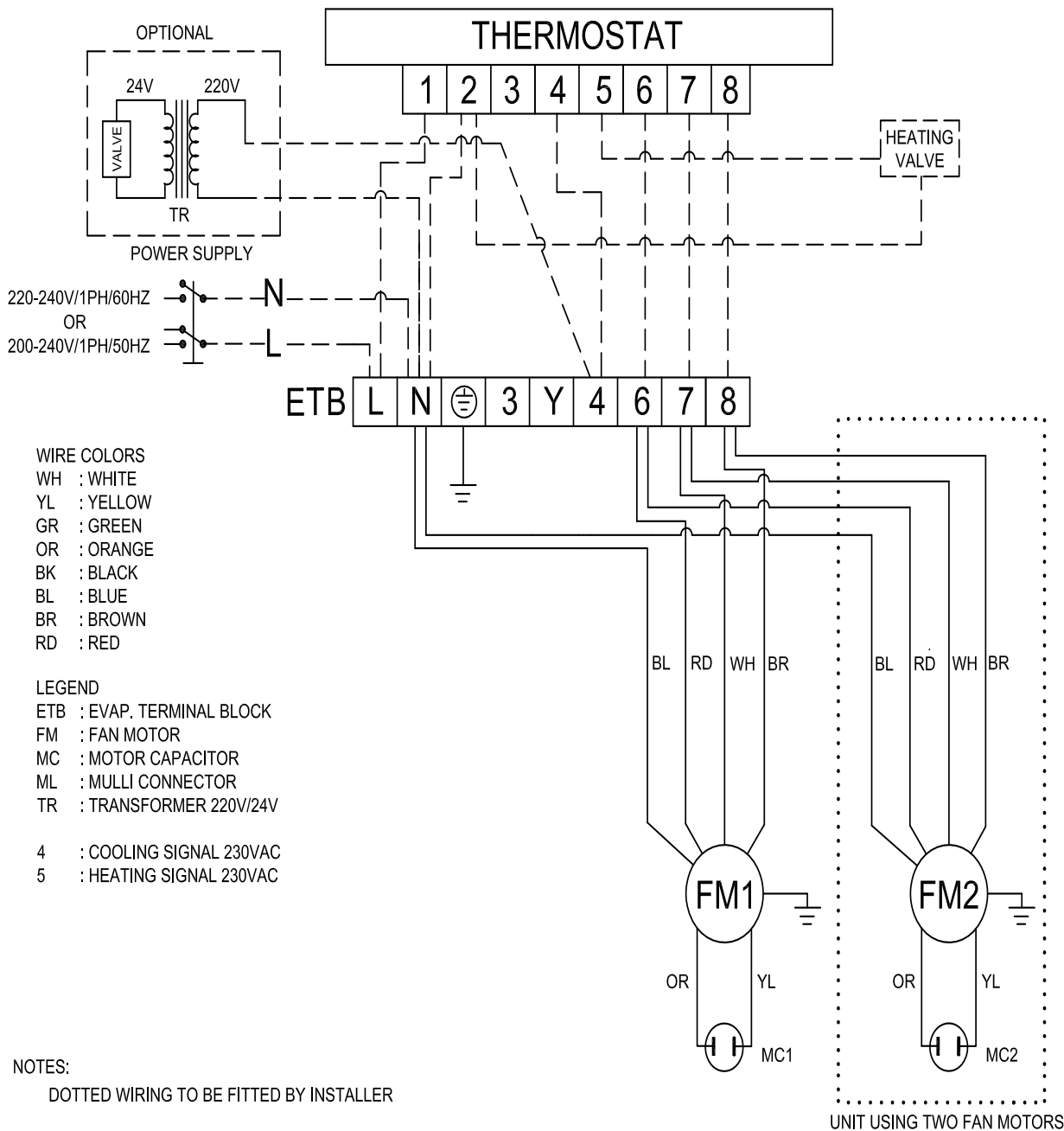
WIRING SCHEMATIC 42TW/TD COOL/HEAT



WIRING SCHEMATIC 42TW/TD COOL/HEAT WITHOUT CONTROL



WIRING DIAGRAM INDOOR UNIT 42TW/TD COOL-HEAT



START-UP

42TW unit is designed to operate in hot and humid conditions without condensation problem because of the rubber insulated drain pan. Refer to the startup checklist in page 11 for startup procedure.

SERVICE TO CLEAN COIL

1. Be sure electrical service switch is open, locked, and tagged while working on unit.
2. Remove supply-air grille access panel and brush between coil fins with stiff wire brush. Follow-up by cleaning with vacuum cleaner. If coil is cleaned with air hose and nozzle, take care not to drive dirt and dust into other components.

CHECK DRAIN

Lock open and tag unit electrical service switch.

Check drain pan, drain line and trap at start of each cooling season. A standard type pipe cleaner for 5/8-in. ID pipe can be used to ensure that pipe is clear of obstruction so that condensate is carried away.

CLEAN FAN WHEEL

Lock open and tag unit electrical service switch.

For access to fan assembly, remove front or bottom panel.

Fan assembly may be removed from its tracks if unit has a long conduit lead. Use a stiff brush or vacuum to remove dirt and debris from scroll. Wipe all fan surfaces with a damp cloth.

CLEAN ELECTRIC HEATER

Lock open and tag unit electrical service switch.

1. Remove dust, dirt, or foreign material before start-up. Do not block normal airflow to and from units; blockage may damage electric heaters.
2. Clean heater elements with soft brush or vacuum cleaner as necessary.

CLEAN OR REPLACE AIR FILTERS

Lock open and tag unit electrical service switch.

At the start of each cooling season and after each month of operation (more or less depending on operating conditions) replace throwaway filter or clean permanent filter.

THROWAWAY FILTER — Replace filter with a good quality filter. Do not attempt to clean and reuse disposable filters.

PERMANENT FILTER

1. Tap on solid surface to dislodge heavy particles.
2. Wash in hot water.
3. Set filter on end so that water drains out through slots in frame. Allow filter to dry thoroughly.

See Fig.7 for filter access.

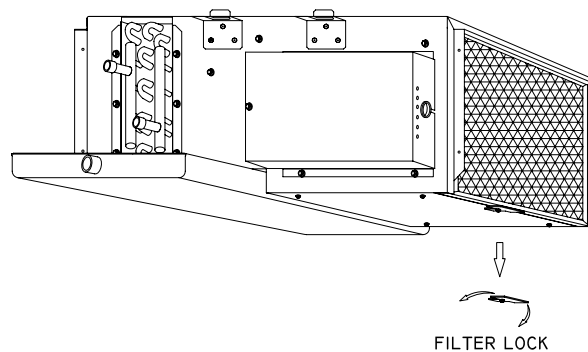


Fig.7 – Filter Access.

START-UP CHECKLIST FOR 42TW SERIES FAN COIL UNIT

I. Project Information

Job Name _____

Address _____

City _____ State _____ Zip _____

Installing Contractor _____

Sales Office _____

Start-up Performed By _____

INSPECTION, INSTALLATION, & START-UP CHECKLIST

ITEM	COMPLETE	ITEM	COMPLETE
Receiving & Inspection		Electrical Connections	
1. Unit received undamaged		21. Refer to unit wiring diagram	
2. Unit received complete as ordered		22. Connection incoming power service(s)	
3. Unit arrangement/hand correct		23. Install & connection "furnish only" parts	
4. Unit structural support complete & correct		24. All field wiring in code compliance	
Handling & Installation		Unit Startup	
5. Mounting grommets / isolators used		25. General visual unit & system inspection	
6. Proper access provided for unit & accessories		26. Check for proper fan belt tension	
9. Proper electrical service provided		27. Check for proper fan rotation	
7. Proper overcurrent protection provided		28. Record electrical supply voltage	
8. Proper service switch / disconnect provided		29. Record ambient temperatures	
9. Proper refrigerant line sizes to unit		30. Check all wiring for secure connections	
10. All service to unit in code compliance		31. Close all unit isolation valves	
11. All shipping screws & braces removed		32. Flush water systems	
12. Unit protected from direct & foreign matter		33. Fill systems with water / refrigerant	
Cooling / Heating Connections		34. Vent water systems as required	
13. Connect field piping to unit		35. All ductwork & grilles in place	
14. Pressure test all piping for leaks		36. All unit panels & filters in place	
15. Install drain line & traps as required		37. Start fans, pumps, chillers, etc.	
16. Insulate all piping as required		38. Check for overload condition of all units	
Ductwork Connections		39. Check all ductwork & units for air leaks	
17. Install ductwork, Fittings, & Grilles as required		40. Balance air systems as required	
18. Flexible duct connections at unit		41. Record all final settings for future use	
19. Proper supply & return grille type & size used		42. Check piping & ductwork for vibration	
20. Insulate all ductwork as required		43. Verify proper cooling operation	
		44. Verify proper heating operation	
		45. Reinstall all covers & access panels	

NOTES

