



turn to the experts 



## 39G Series

*Air Handling Units*

Nominal: 900-43,000 CFM



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# 39G Series

## Introduction

The purpose of this catalogue is to help consulting engineers in the preliminary selection of CARRIER AIR HANDLING UNITS. However, if required, your local CARRIER office will assist to provide a computerised selection to confirm or complete your preliminary selection.

This catalogue consists of:

- A description of the various component parts available to be combined in the order best suited to your requirements.
- Technical data sheets, dimensions, weights, specifications, charts, etc.



### QUALITY

The quality and reliability of any system depends on the quality of the components parts. Equipment schedules and specifications are based on **Carrier 39G GALAXY**. Therefore, in line with other CARRIER products, our 39G Series Air Handlers are manufactured in conformity with CARRIER's Quality concept which brought in items subjected to rigorous inspection.

### FLEXIBLE MODULAR CONSTRUCTION

This adaptable unit design which is based upon a wide range of standard panel sizes, frequently enables CARRIER to offer several configurations of unit height and width, so that the aesthetic or practical dictates of confined plant room space or rooftop silhouettes can be easily met.

Major items of unit such as fans, coils, filters, etc. can be arranged in the sequence dictated by the job requirements, and separated by access sections where necessary, giving complete flexibility of design.

### RIGIDITY

Extruded aluminium internal posts within the extruded aluminium frame increase the structural rigidity and provide a fixing point for an air-tight sealing strip.

The panels shall be constructed such that they shall be of two layers of steel sheet with injected insitu CFC-Free Polyurethane insulation with thermal conductivity factor of 0.019 W/mK and density of 40kg/m<sup>3</sup> in between to ensure effective thermal and acoustic insulation.

### WIDE RANGE OF SIZES

There are 22 standard units sizes available, each, in most cases, has a choice of 2 fan type, covering 22 CFM breaks ranging from 900 to 43,000 Nominal CFM.

### FLEXIBILITY IN PANEL CONSTRUCTION

Units are offered with double wall construction sheet metal with 26 Gauge Colorbond® XMA (ABR) as Outer casing and 26 Gauge Galvanized Steel as Inner Casing for 25mm.

### VIBRATION ISOLATION

Centrifugal fan motor packages are mounted on common bases with 1" deflection spring or 0.5" deflection rubber as standard vibration isolators and flexible discharge connections ensuring that all moving parts are independently isolated from the casing structure.

### AESTHETICS

The standard construction features external panels surface attractively finished with Colorbond® XMA (ABR) and the units are delivered with heat-shrink plastic covering which keep the panels in good condition.

### ACCESSIBILITY AND MAINTENANCE

The easily removable panels and quick release access doors offer complete accessibility to fans, coils, filters and dampers. Additional access sections can be provided between coils and filters if required.

All basic component parts are standard and interchangeable. Filters are commercially available standard items conforming to international standards and sizes.

### INDIVIDUALISED PRODUCT LINE

All 22 model sizes are available as 'Customised' adapted exactly to meet specific job requirements. For example: Non-standard coil material, CCN, ANC, attenuators, etc.....

# 39G Identification & dimension

## A. General

The 39G line of Carrier Air Handling Unit is based on a MODULAR System.

The number of modules in height and in width determine the cross-section available for air flow and encodes the unit size.

The unit length is determined by the number and size of the component parts required.

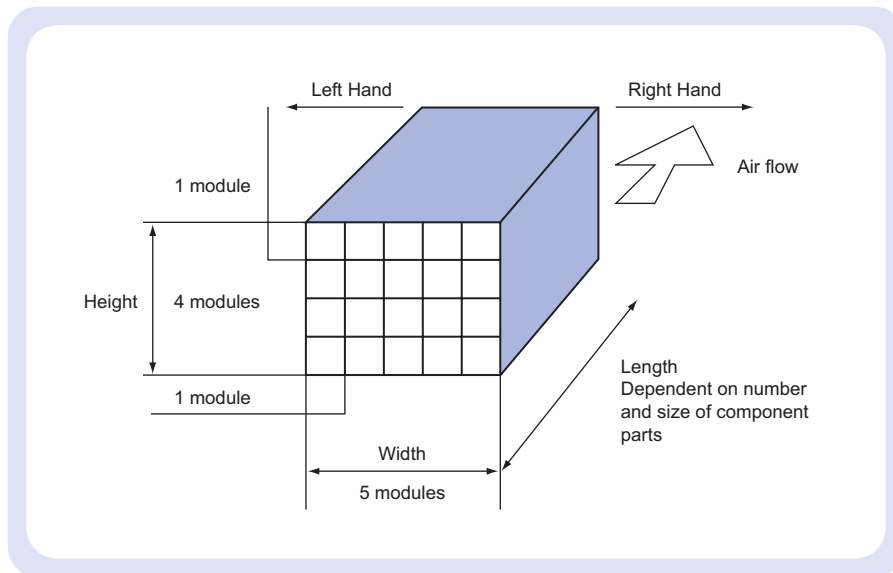
**The side for service (connections and access) is defined as right hand or left hand in the direction of air flow.**

Each module has a constant value of 100mm. To determine external dimensions, the following formula applies:

$$\begin{aligned} \text{External Dimensions} &= (n \times 100 + m) \text{ mm} \\ \text{where } n &= \text{number of module} \\ m &= 110\text{mm for 25mm casing} \end{aligned}$$

### Example 2: 39G0713 for 25mm casing

$$\begin{aligned} \text{External Height Dimension} &= 07 \times 100 + 110 = 810\text{mm} \\ \text{External Width Dimension} &= 13 \times 100 + 110 = 1410\text{mm} \end{aligned}$$



**Remark:** Must add base frame (100 mm.) to external height dimension to get the overall height of unit.

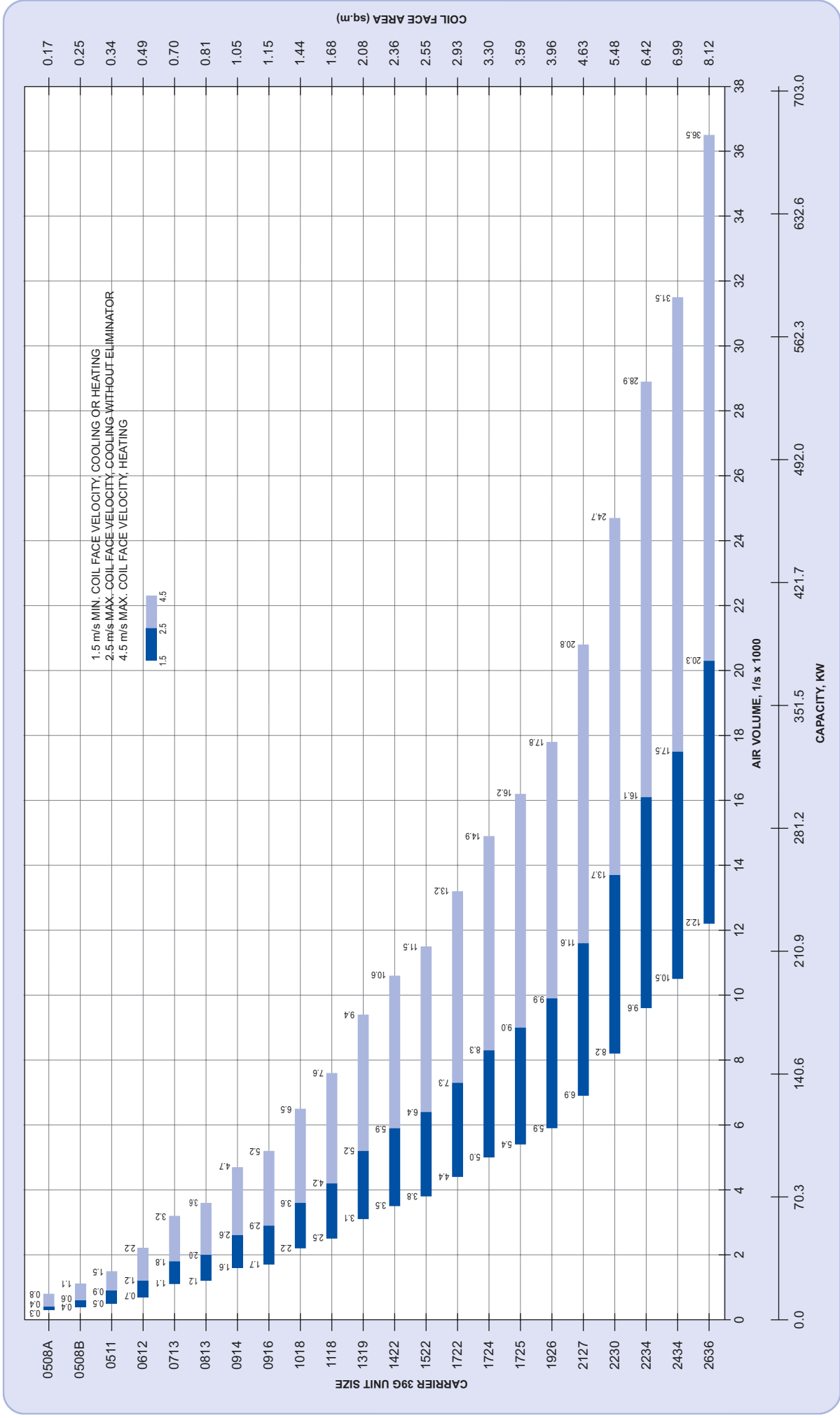
## B. Shipping Dimension

To estimate the skid/closed crate dimensions of a complete module section or unit for shipment purpose.

### 1. Section (or Unit) without MXB: ADD

- i. 400mm (skid only or inclusive crate) to its module width.
- ii. 200mm (skid only) or 277mm (inclusive crate) to its module length.
- iii. 100mm (skid only) or 278mm (inclusive crate) to its module height.

# Quick selection chart



Note: For Chilled Water application between 2.5 & 3.15 m/sec. face velocity, the use of Drift Eliminator is necessary.

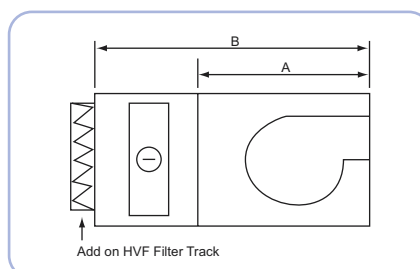
# Unit configuration

Table 1 Unit Configuration (Horizontal Application)

STD 2/2A

Unit Size	Fan Size	Range of Motor HP	Unit Length (mm)		Unit Height (mm)	Unit Width (mm)	No. of Section Shipped	Add on HYF Filter Track (mm)
			A	B				
			25 mm	25 mm	25 mm	25 mm		
0508A	FC - 160	1~1.5	555	1110	710	910	1	100
	FC - 180	1.5~2						
0508B	FC - 180	1.5~2	555	1110	710	910	1	100
0511	FC - 200	1.5~3	655	1210	710	1210	1	100
0612	FC - 225	2~4	655	1210	810	1310	1	100
	BC - 225	3~5						
0713	FC - 280	3~5	755	1310	910	1410	1	100
	BC - 280	4~7.5						
0813	FC - 315	4~5	855	1410	1010	1410	1	100
	BC - 315	5~7.5						
0914	FC - 355	4~7.5	955	1510	1110	1510	1	100
	BC - 355	5~10						
0916	FC - 355	4~7.5	955	1510	1110	1710	1	100
	BC - 355	7.5~15						
1018	FC - 400	5~10	1055	1610	1210	1910	1	100
	FC - 450	7.5~10						
	BC - 400	7.5~15						
	BC - 450	10~15						
1118	FC - 450	7.5~15	1055	1610	1310	1910	1	100
	BC - 450	10~15						
1319	FC - 450	7.5~15	1055	1610	1510	2010	1	100
	BC - 450	10~15						
	FC - 500	10~20						
	BC - 500	15~20						
1422	FC - 500	10~15	1155	1710	1610	2310	1	100
	BC - 500	10~15						
	FC - 560	15~20						
	BC - 560	15~20						
1522	FC - 560	15~20	1310	1920	1710	2310	2	100
	BC - 560	15~20						
	FC - 630	15~25						
	BC - 630	20~25						
1722	FC - 630	15~20	1510	2120	1910	2310	2	100
	BC - 630	15~25						
	FC - 710	20~25						
	BC - 710	20~30						
1724	FC - 630	15~25	1510	2120	1910	2510	2	100
	BC - 630	15~25						
	FC - 710	20~30						
	BC - 710	20~30						
1725	FC - 630	15~25	1510	2120	1910	2610	2	100
	BC - 630	15~25						
	FC - 710	20~30						
	BC - 710	25~40						
1926	FC - 710	15~25	1610	2220	2110	2710	2	100
	BC - 710	20~30						
	FC - 800	25~40						
	BC - 800	25~40						
2127	FC - 710	15~25	1610	2220	2310	2810	2	100
	BC - 710	20~30						
	FC - 800	25~40						
	BC - 800	30~50						
2230	FC - 800	20~30	1810	2420	2410	3110	2	100
	BC - 800	20~30						
	FC - 900	30~50						
	BC - 900	40~50						
2234	FC - 800	20~40	1810	2420	2410	3510	2	100
	BC - 800	20~40						
	FC - 900	30~60						
	BC - 900	40~60						
2434	FC - 900	25~40	2010	2620	2610	3510	2	100
	BC - 900	25~40						
	FC - 1000	40~60						
	BC - 1000	40~60						
2636	FC - 900	25~50	2010	2620	2810	3710	2	100
	BC - 900	25~50						
	FC - 1000	40~75						
	BC - 1000	40~75						

Remark: Unit height included base frame (100 mm.)



▲ Figure 1

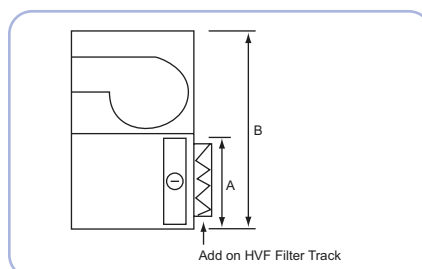
# Unit configuration

Table 2 Unit Configuration (Vertical Application)

STD 2/2A

Unit Size	Fan Size	Range of Motor HP	Unit Height (mm)		Unit Length (mm)	Unit Width (mm)	No. of Section Shipped	Add on HYF Filter Track (mm)
			A	B				
			25 mm	25 mm	25 mm	25 mm		
0508A	FC - 160	1~1.5	710	1320	610	910	1	100
	FC - 180	1.5~2						
0508B	FC - 180	1.5~2	710	1320	610	910	1	100
0511	FC - 200	1.5~3	710	1320	710	1210	1	100
0612	FC - 225	2~4	810	1520	710	1310	1	100
	BC - 225	3~5						
0713	FC - 280	3~5	910	1720	810	1410	1	100
	BC - 280	4~7.5						
0813	FC - 315	4~5	1010	1920	910	1410	1	100
	BC - 315	5~7.5						
0914	FC - 355	4~7.5	1110	2120	1010	1510	1	100
	BC - 355	5~10						
0916	FC - 355	4~7.5	1110	2120	1010	1710	1	100
	BC - 355	7.5~15						
1018	FC - 400	5~10	1210	2320	1110	1910	1	100
	FC - 450	7.5~10						
	BC - 400	7.5~15						
	BC - 450	10~15						
1118	FC - 450	7.5~15	1310	2520	1110	1910	2	100
	BC - 450	10~15						
1319	FC - 450	7.5~15	1510	2720	1110	2010	2	100
	BC - 450	10~15			1210			
	FC - 500	10~20						
	BC - 500	15~20						
1422	FC - 500	10~15	1610	3120	1210	2310	2	100
	BC - 500	10~15			1310			
	FC - 560	15~20						
	BC - 560	15~20						
1522	FC - 560	15~20	1710	3320	1310	2310	2	100
	BC - 560	15~20			1510			
	FC - 630	15~25						
	BC - 630	20~25						
1722	FC - 630	15~20	1910	3620	1510	2310	2	100
	BC - 630	15~25			1610			
	FC - 710	20~25						
	BC - 710	20~30						
1724	FC - 630	15~25	1910	3920	1510	2510	2	100
	BC - 630	15~25			1610			
	FC - 710	20~30						
	BC - 710	20~30						
1725	FC - 630	15~25	1910	3920	1510	2610	2	100
	BC - 630	15~25			1610			
	FC - 710	20~30						
	BC - 710	25~40						
1926	FC - 710	15~25	2110	3920	1610	2710	2	100
	BC - 710	20~30			1810			
	FC - 800	25~40						
	BC - 800	25~40						
2127	FC - 710	15~25	2310	4320	1610	2810	2	100
	BC - 710	20~30			1810			
	FC - 800	25~40						
	BC - 800	30~50						
2230	FC - 800	20~30	2410	4520	1810	3110	2	100
	BC - 800	20~30			2010			
	FC - 900	30~50						
	BC - 900	40~50						
2234	FC - 800	20~40	2410	4520	1810	3510	2	100
	BC - 800	20~40			2010			
	FC - 900	30~60						
	BC - 900	40~60						
2434	FC - 900	25~40	2610	4720	2010	3510	2	100
	BC - 900	25~40			2110			
	FC - 1000	40~60						
	BC - 1000	40~60						
2636	FC - 900	25~50	2810	5120	2010	3710	2	100
	BC - 900	25~50			2110			
	FC - 1000	40~75						
	BC - 1000	40~75						

Remark : Unit height included base frame (100 mm.)



▲ Figure 2

## A. General

The casing of 39G units is formed by:

- extruded aluminium perimeter frame, inner post and intermediate post.
- removable and fixed panels
- internal insulation

All external panels are Colorbond® XMA (ABR) steel.

## B. Frames

The frame is made up of 4 components (Figure 3)

1. Extruded aluminium frame
2. Composite corner piece
3. Extruded Internal post
4. Extruded Intermediate post

### 1. Extruded Aluminium Frame

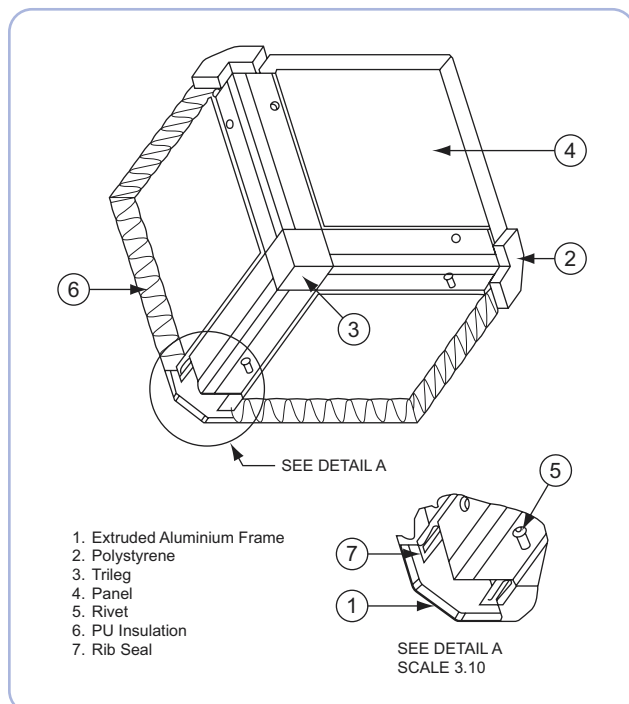
Forms the overall shape of the section and receives the panels. The extruded aluminium frame is manufactured from extrusion process using aluminium (Grade 6063 - T5) with mill finish 1.5mm thickness.

### 2. Composite Material Corner Piece (Trilegs)

The composite corner piece is composed of Nylon 66 + 33% GF (25mm casing) and Nylon 6 + 30% GF (50mm casing) with fine finish surface and it is grey in color confirming to RAL 7042.

### 3. Extruded Inner Post

Extruded aluminium inner post within the extruded aluminium frame increase the structural rigidity and provide a fixing point for an air-tight sealing strip.



▲ Figure 3 Cross Section of Panels, Rib-Seal and Others

## C. Panels

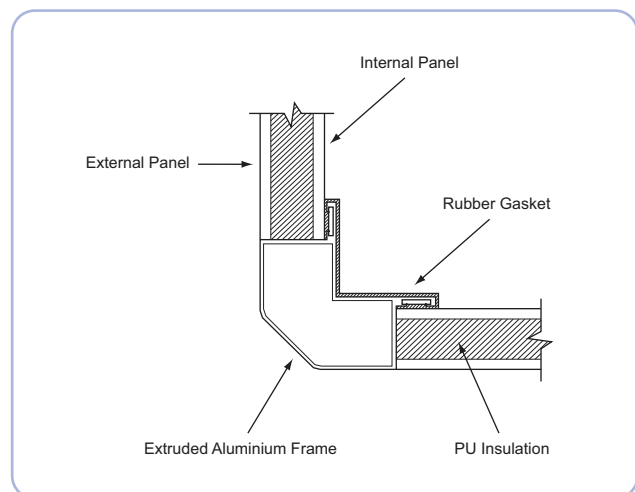
### 1. Fixed Panels

Forms the insulated enclosure of the casing and giving it rigidity and air-tightness, they consist of:

- external sheet metal
- insulation
- internal protective cover

The Colorbond® XMA (ABR) steel sheet with 26 Gauge thickness and the galvanized steel inner casing (26 Gauge) form double wall construction with PU insulation between the inner and the outer panel. Rivets are used to affix panel to AHU framework.

Optional : Wrap-around gasket (Figure 4) to replace robb-seal for enhancement of insulation on the aluminium frames to prevent condensation start on aluminium frames which should be suitable to units with ducted return application. It has shown that with wrap-around gasket on frames, it will on condensation at high humidity ambient.



▲ Figure 4 Cross Section of Panel and Framework

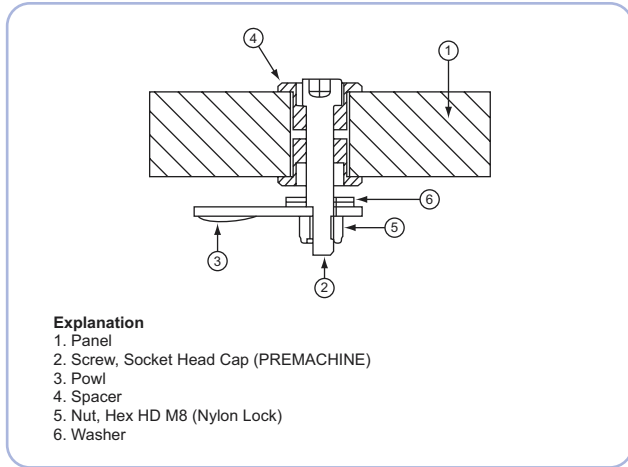
### 2. Removable / Access Panel

Are constructed of the same material as the fixed panels.

The access panel shall be low leak construction with a hex socket compression type latch assembly and large & non-conductive handles for easy removal of the access panel. (Figure 5 for Cross Section of Latch Assy.)

The removable / access panel shall be double skinned construction and internally insulated with injected insitu CFC-Free Polyurethane insulation. The access panel mating surface perimeter shall be lined with Rib-Seals.

# Casing



▲ Figure 5 Cross Section of Latch Assy

### 3. COLORBOND® XMA (ABR) prepainted steel

Panels made from BHP COLORBOND® XMA (ABR) steel provide excellent corrosion resistance and are suitable for outdoor durability. The substrate, ZINCALUME® zinc/aluminium alloy-coated steel complies with AS1397-1993 and the paint coating complies with AS/NZS 2728-1997.

Below are the specifications of COLORBOND® XMA (ABR) steel.

Pretreatment - Corrosion resistant proprietary conversion coating.

Primer Coat - Universal corrosion inhibitive primer. Nominal thickness 5µm top side.

Finish Coat - Custom formulated system. Nominal thickness 20µm top side in white color.

## D. Insulation

The panels are frames and thermally insulated. The panels shall be constructed such that they shall comprise of two layers of steel sheet with injected insitu CFC-Free polyurethane insulation with thermal conductivity factor of 0.019 w/mK and density of 40 kg/m<sup>3</sup> in between.

## E. Base Unit Casing Weight

Table below shows the base unit casing weight (approximation) for 25mm casing.

Table 3 Base Unit Casing Weight

Unit Size	MXB	Fan	Coil	HVF	BF	LVF	ACC
	25 mm	25 mm	25 mm	25 mm	25 mm	25 mm	25 mm
0508A	51	25	25	10	34	35	30
0508B	51	25	25	10	34	35	30
0511	66	30	30	12	42	42	36
0612	70	40	33	13	46	54	40
0713	82	50	35	14	50	62	42
0813	94	60	37	15	54	64	44
0914	100	72	40	16	60	73	48
0916	110	78	43	17	65	78	52
1018	118	95	48	19	73	94	58
1118	120	100	50	20	75	98	60
1319	122	115	52	21	78	108	62
1422	131	151	56	22	82	117	65
1522	140	169	58	25	85	123	67
1722	147	183	60	27	91	139	71
1724	155	189	63	29	96	147	75
1725	167	201	66	31	100	159	77
1926	172	224	68	33	107	168	82
2127	185	260	72	35	114	180	87
2230	195	308	76	37	119	208	90
2234	215	342	80	39	126	222	95
2434	225	363	84	41	131	230	98
2636	240	419	89	43	139	245	104

Note: Weight in kg

## A. General

### 1. Fan Laws

For a given distribution system and specific air weight, the following laws in relation to volume, pressure and fan power applied dependent upon fan speed.

- The volume (V) changes as the fan speed (n) changes

$$V_2 = V_1 \frac{n_2}{n_1}$$

- The pressure (p) changes with the square of the speed (n)

$$P_2 = P_1 \left( \frac{n_2}{n_1} \right)^2$$

- The absorbed power (Pw) changes with the cube of the speed (n)

$$PW_2 = PW_1 \left( \frac{n_2}{n_1} \right)^3$$

- As the specific weight of the air changes, the air quantities remain constant.
- The pressure and the absorbed power change with the specific weight.

$$P_2 = P_1 \frac{y_2}{y_1} \quad \text{and} \quad PW_2 = PW_1 \frac{y_2}{y_1}$$

### 2. Reference Values

The fan curves refer to a specific weight of 1.2 kg<sub>f</sub>/m<sup>3</sup> at a temperature of 20°C at atmospheric pressure of 101.3 kPa (760mm Hg) and a relative humidity of 50%.

## B. Description

### 1. Type of Fans

39G air handling units are supplied with double inlet, double width (DIDW) centrifugal blowers of either:

- i) Forward curved (FC)
- ii) Backward curved (BC)

### 2. Construction

- a) Fan casings are constructed of galvanized steel with a series of punched holes or nutserts allowing the fixing of accessories such as frames or support legs thus providing a variety of discharge positions.
- b) The impeller is galvanized finished for forward curved fan and epoxy painted for backward curved and securely fixed to the shaft. (bored & keywayed) Backward curved fan has lower energy consumption due to its high performance impeller with welded true aerofoil blades inclined obliquely to the shaft axis. All fan impellers are statically and dynamically balanced to the operating fan speed as shown in the equipment schedule in accordance with ISO 1940 Part 1. Quality level G2.5.
- c) Shafts are trued in accordance with DIN 748. Toleranz class g<sub>6</sub>
- d) Deep groove ball bearings are supplied for smaller fan size. Self aligning Single row ball bearings mounted with a cast iron housing (real plumber block bearing) for size 400-1000. All bearings are pre-lubricated from the factory. Higher life expectancy bearings are available as option.

## C. Recommendations

The air to be handled in the unit must be clean, and non-corrosive.

Each air handling unit can have a choice of several fan type with best efficiency and lowest sound level should be selected for a specific installation.

## D. Fan Length

Table 4 Fan Length

Unit Size	Fan Size	Range of Motor HP	Discharge Type	Fan Length in Module		Vertical Unit Height in Module	
0508 A	FC - 160	1~1.5	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	5		10	
	FC - 180	1.5~2					
0508 B	FC - 180	1.5~2	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	5		10	
0511	FC - 200	1.5~3	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	6		10	
0612	FC - 225	2~4	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	6		12	
	BC - 225	3~5					
0713	FC - 280	3~5	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	7		14	
	BC - 280	4~7.5					
0813	FC - 315	4~5	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	8		16	
	BC - 315	5~7.5					
0914	FC - 355	4~7.5	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	9		18	
	BC - 355	5~10					
0916	FC - 355	4~7.5	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	9		18	
	BC - 355	7.5~15					
1018	FC - 400	5~10	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	10		20	
	FC - 450	7.5~10					
	BC - 400	7.5~15					
	BC - 450	10~15					
1118	FC - 450	7.5~15	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	10		22	
	BC - 450	10~15					
1319	FC - 450	7.5~15	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	450	10	24	
	BC - 450	10~15		500	11		
	FC - 500	10~20				500	11
	BC - 500	15~20					
1422	BC - 500	10~15	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	500	11	28	
	FC - 560	10~15		560	12		
	BC - 560	15~20					
1522	FC - 560	15~20	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	560	12	30	
	BC - 630	15~25		630	14		
	FC - 630	20~25				630	14
	BC - 630	15~25					
1722	FC - 630	15~20	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	630	14	33	
	BC - 630	15~25		710	15		
	FC - 710	20~25					
1724	BC - 710	20~30	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	630	14	33	
	FC - 630	15~25		710	15		
	FC - 710	20~30					630
	BC - 710	20~30					
1725	FC - 630	15~25	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	630	14	34	
	BC - 630	15~25		710	15		
	FC - 710	20~30					
1926	BC - 710	25~40	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	710	15	36	
	FC - 710	15~25		800	17		
	FC - 800	25~40					710
	BC - 800	25~40					
2127	FC - 710	15~25	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	710	15	40	
	BC - 710	20~30		800	17		
	FC - 800	25~40					800
	BC - 800	30~50					
2230	FC - 800	20~30	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	800	17	42	
	BC - 800	20~30		900	19		
	FC - 900	30~50					800
	BC - 900	40~50					
2234	FC - 800	20~40	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	800	17	42	
	BC - 800	20~40		900	19		
	FC - 900	30~60					900
	BC - 900	40~60					
2434	FC - 900	25~40	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	900	19	44	
	BC - 900	25~40		1000	20		
	FC - 1000	40~60					900
	BC - 1000	40~60					
2636	FC - 900	25~50	UBF, UBR, THF, BHF, THR, BHR, DBR, DBF	900	19	48	
	BC - 900	25~50		1000	20		
	FC - 1000	40~75					1000
	BC - 1000	40~75					

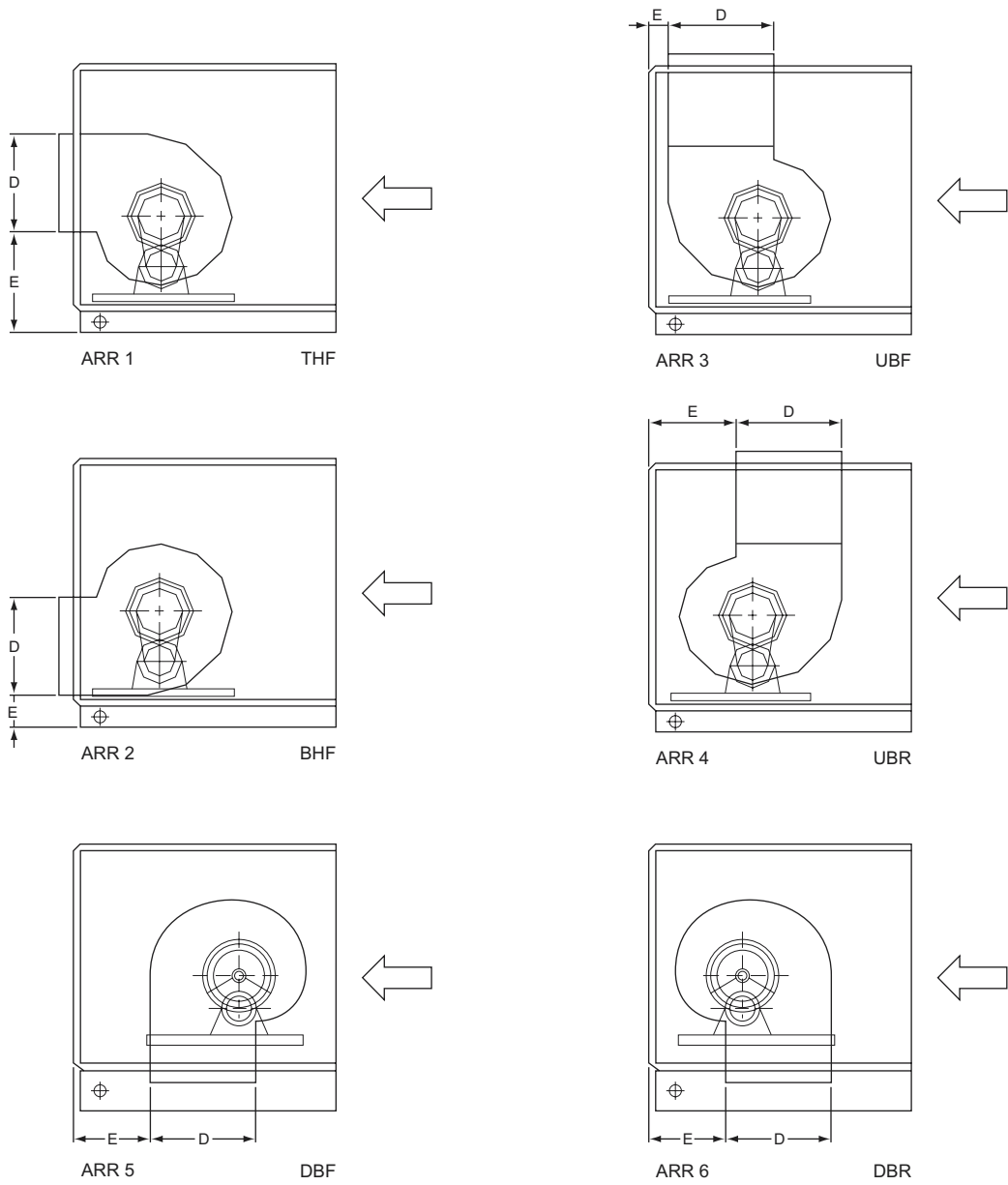
**Note:** BHR and THR is only a valid option for vertical units.  
 DBF and DBR is only a valid option for horizontal units.  
 FC Forward curved  
 BC Backward curved

E. Fan Discharge Outlet Dimension

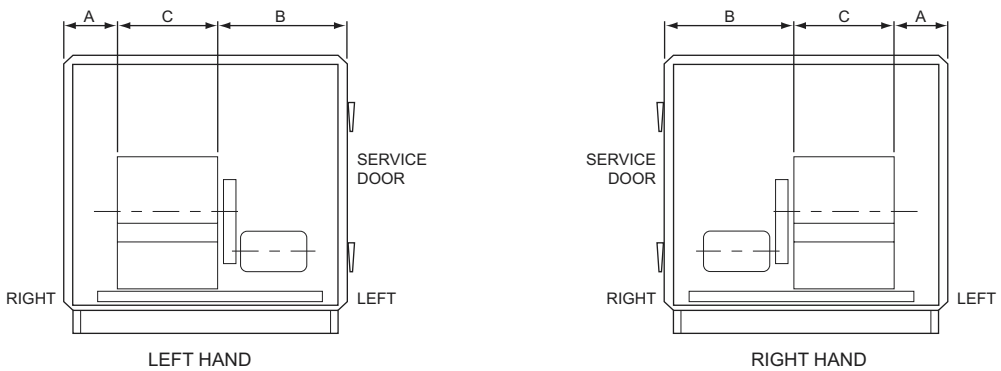
Table 5 Fan Discharge Outlet Dimensions (mm) - Horizontal Unit

Unit Size	Fan Size	E Dimension (mm)								
		A 25 mm	B 25 mm	C 25 mm	D 25 mm	ARR. 1 25 mm	ARR. 2 25 mm	ARR. 3 / ARR. 5 25 mm	ARR. 4 / ARR. 6 25 mm	
0608 A	FC - 160	255	450	205	205	205	441	328	159	247
	FC - 180	205	476	229	229	229	426	328	137	240
0508 B	FC - 180	205	476	229	229	229	426	328	137	240
	FC - 200	404	550	256	256	256	433	328	170	280
0612	FC - 225 / BC - 225	442	580	288	288	288	447	328	148	272
0713	FC - 280 / BC - 280	419	630	361	361	361	476	328	146	299
0813	FC - 315 / BC - 315	376	630	404	404	404	494	328	166	337
0914	FC - 355 / BC - 355	407	650	453	453	453	519	328	178	374
0916	FC - 355 / BC - 355	482	775	453	453	453	519	328	178	374
1018	FC - 400 / BC - 400	628	775	507	507	507	548	328	187	412
	FC - 450 / BC - 450	566	775	569	569	569	577	328	142	396
1118	FC - 450 / BC - 450	566	775	569	569	569	577	328	142	396
	FC - 450 / BC - 450	610	831	569	569	569	577	328	142	396
1319	FC - 500 / BC - 500	610	831	569	569	569	598	328	146	421
	FC - 500 / BC - 500	602	1070	638	638	638	598	328	146	421
1422	FC - 560 / BC - 560	496	1099	715	715	715	636	334	140	449
	FC - 560 / BC - 560	496	1099	715	715	715	636	334	140	449
1522	FC - 630 / BC - 630	463	1046	801	801	801	678	334	177	528
	FC - 630 / BC - 630	463	1046	801	801	801	678	334	177	528
1722	FC - 710 / BC - 710	509	903	898	898	898	724	334	154	551
	FC - 710 / BC - 710	663	1046	801	801	801	678	334	177	528
1724	FC - 630 / BC - 630	709	903	898	898	898	724	334	154	551
	FC - 710 / BC - 710	678	1131	801	801	801	678	334	177	528
1725	FC - 630 / BC - 630	809	903	898	898	898	724	334	154	551
	FC - 710 / BC - 710	681	1131	898	898	898	724	334	154	551
1926	FC - 800 / BC - 800	572	1131	1007	1007	1007	808	360	171	626
	FC - 800 / BC - 800	781	1131	898	898	898	724	334	154	551
2127	FC - 800 / BC - 800	672	1131	1007	1007	1007	808	360	171	626
	FC - 800 / BC - 800	951	1152	1007	1007	1007	808	360	171	626
2230	FC - 900 / BC - 900	828	1152	1130	1130	1130	864	360	181	692
	FC - 900 / BC - 900	1251	1251	1007	1007	1007	808	360	171	626
2234	FC - 900 / BC - 900	1129	1251	1130	1130	1130	864	360	181	692
	FC - 900 / BC - 900	1158	1222	1130	1130	1130	864	360	181	692
2434	FC - 1000 / BC - 1000	1158	1290	1267	1267	1267	888	360	150	685
	FC - 900 / BC - 900	1290	1290	1130	1130	1130	864	360	181	692
2636	FC - 900 / BC - 900	1153	1290	1267	1267	1267	888	360	150	685
	FC - 1000 / BC - 1000	1153	1290	1267	1267	1267	888	360	150	685

Side elevation



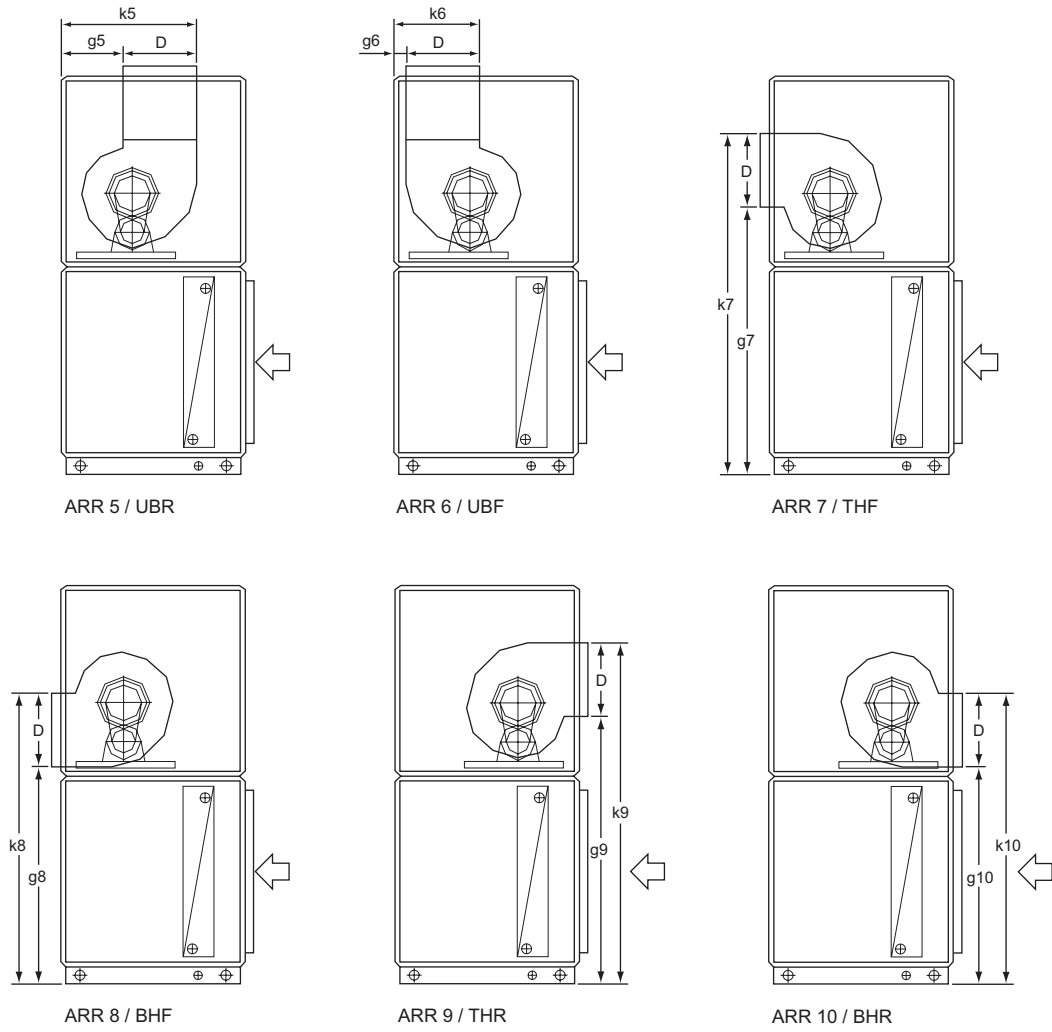
Front elevation



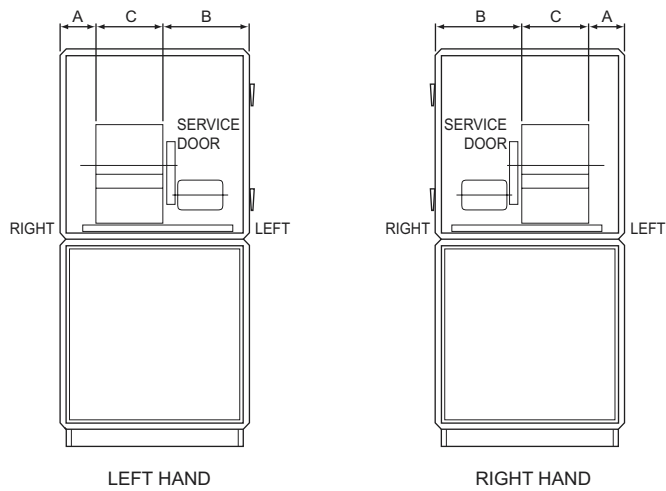
▲ Figure 6 Horizontal Fan Arrangements



Side elevation



Front elevation



▲ Figure 7 Vertical Fan Arrangements

F. Fan Shaft Diameter

Table 7 Forward Curved, Backward Curved Fan Shaft Diameter

Fan Size	Diameter (mm) Drive / Blower Side (tolerances)
FC	
FC - 160	20 g <sub>6</sub>
FC - 180	20 g <sub>6</sub>
FC - 200	20 g <sub>6</sub>
FC - 225	20 g <sub>6</sub>
FC - 280	25 g <sub>6</sub>
FC - 315	25 g <sub>6</sub>
FC - 355	30 g <sub>6</sub>
FC - 400	30 g <sub>6</sub>
FC - 450	35 g <sub>6</sub>
FC - 500	35 g <sub>6</sub>
FC - 560	40 g <sub>6</sub>
FC - 630	40 g <sub>6</sub>
FC - 710	50 g <sub>6</sub>
FC - 800	55 g <sub>6</sub>
FC - 900	60 g <sub>6</sub>
FC - 1000	60 g <sub>6</sub>
BC	
BC - 225	20 g <sub>6</sub>
BC - 280	25 g <sub>6</sub>
BC - 315	25 g <sub>6</sub>
BC - 355	30 g <sub>6</sub>
BC - 400	30 g <sub>6</sub>
BC - 450	35 g <sub>6</sub>
BC - 500	35 g <sub>6</sub>
BC - 560	40 g <sub>6</sub>
BC - 630	40 g <sub>6</sub>
BC - 710	50 g <sub>6</sub>
BC - 800	55 g <sub>6</sub>
BC - 900	60 g <sub>6</sub>
BC - 1000	60 g <sub>6</sub>

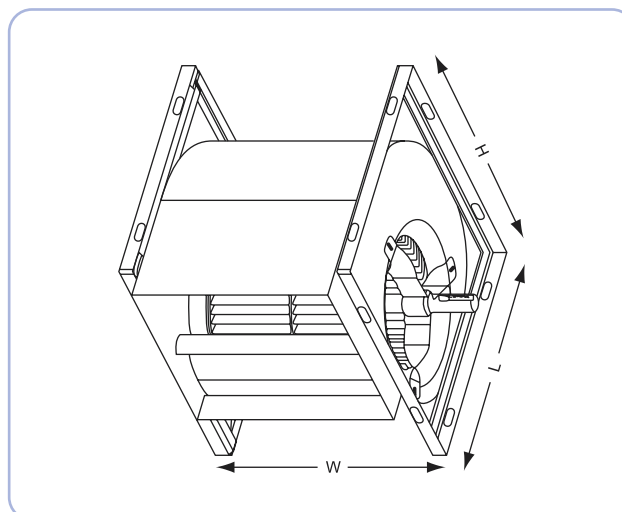
## G. Fan Housing Dimension and Weight

Table below shows full details of 39G fan housing dimension and weight.

**Table 8 Fan Housing Assembly Dimension and Weight**

Fan Size	Length (mm)	Width (mm)	Height (mm)	Weight (kg)
Forward Curved				
FC - 160	269	257	315	7
FC - 180	323	268	336	8
FC - 200	343	306	370	10
FC - 225	382	338	415	12
FC - 280	466	420	518	20
FC - 315	518	464	578	24
FC - 355	578	532	654	32
FC - 400	650	586	736	41
FC - 450	726	648	827	51
FC - 500	800	718	918	74
FC - 560	892	814	1030	93
FC - 630	998	900	1157	104
FC - 710	1120	998	1302	192
FC - 800	1254	1100	1468	240
FC - 900	1408	1230	1648	293
FC - 1000	1540	1366	1810	340
Backward Curved				
BC - 225	366	350	433	15
BC - 280	466	420	518	24
BC - 315	518	464	578	28
BC - 355	578	532	654	41
BC - 400	650	586	736	49
BC - 450	726	648	827	65
BC - 500	800	718	918	83
BC - 560	892	814	1030	110
BC - 630	998	900	1157	141
BC - 710	1120	998	1302	251
BC - 800	1254	1106	1468	299
BC - 900	1408	1230	1648	368
BC - 1000	1540	1366	1810	474

**Note :** Width does not include both end of shaft.



▲ Figure 8

## H. Fan Motor Weight

Table below shows the approximate fan motor weight.

**Table 9 Fan Motor Weight**

Motor HP	Motor kW	Approx. Weight (kg)	Frame Number
1	0.75	17	D80
1.5	1.1	25	D90S
2	1.5	26	D90L
3 & 4	2.2/3.0	35	D100L
5 & 5 1/2	3.7/4.4	47	D112M
7.5	5.5	68	D132S
10	7.5	79	D132M
15	11	122	D160M
20	15	144	D160L
25	18.5	189	D180M
30	22	203	D180L
40	30	290	D200L
50	37	320	D225SC
60	45	355	D225MC
75	55	381	D250SA

- Note:**
- Motor weights based on 4 - pole 380/30/50Hz induction type TEFC motor foot mounted.
  - Motor shall be of Δ, Y or D.O.L wiring.
  - Standard motor shall be per IEE standard IP54 enclosure with Class F insulation and Class B Temperature rise complying with BS2757.
  - Maximum ambient temperature 40°C.
  - For derivation of motor kW from fan BkW use:  
 $Motor\ kW = Fan\ BkW \times A$ , where  $A = 1.20$  if  $BkW < 10\ kW$   
 $A = 1.15$  if  $BkW > 10\ kW$
  - Please refer to your nearest Carrier Representatives for special motor voltages or application.

## I. Fan Size and RPM Limitation/BkW Limitation

**Table 10 Fan Size and RPM Limitation/BkW Limitation**

Fan Type	Fan Size	Maximum RPM	Maximum Absorbed Power kw
Forward Curved	FC - 160	4200	2
	FC - 180	4000	2
	FC - 200	3200	2
	FC - 225	2900	3
	FC - 280	2400	4
	FC - 315	2100	5.5
	FC - 355	1800	5.5
	FC - 400	1600	7.5
	FC - 450	1400	7.5
	FC - 500	1200	11
	FC - 560	1100	11
	FC - 630	900	15
	FC - 710	850	22
	FC - 800	750	22
Backward Curved	FC - 900	650	30
	FC - 1000	600	37
	BC - 225	6640	4
	BC - 280	4000	4
	BC - 315	3500	5
	BC - 355	3000	7.5
	BC - 400	2700	7.5
	BC - 450	2300	11
	BC - 500	2100	11
	BC - 560	1800	15
	BC - 630	1500	15
BC - 710	1500	18.5	
BC - 800	1300	22	
BC - 900	1200	30	
BC - 1000	1050	37	

**Remark:** A selection is valid provided it first reaches and not exceed either max. limits (RPM of BkW).

# Coils

## A. General

- The coils shall be of cartridge type, mounted over the condensate drain pan (for cooling coil).
- All chilled water, direct expansion coils and hot water coils are factory tested at 150 psig.
- Coils performance are designed in accordance to ARI Standard 410.
- Slide-in and slide-out coil on it's tracks enable easy coil removal for complete cleaning and ensure of dry unit interior.

- Provide coil moisture eliminators Option when the coil face velocity exceeds 2.5m/s.
- All coils shall have counter flow arrangement.

## B. Chilled Water Coils

Chilled Water Coils shall be aluminium / copper plate fins with belled collars and bonded to 12.7mm OD copper tubes by mechanical expansion. Fins shall be of the "Dual Sinewave" form. Coil shall have galvanised steel casing and steel headers with male threaded connections.

Table 11 Optimized Circuit for 39G Chilled Water Coil

Model	CFM	Row	Quarter	Half	Full	Double
0508A	900	4, 5, 6, 7	•			
		8		•		
0508B	1300	4, 5	•			
		6, 7, 8		•		
0511	1800	4, 5, 6, 7, 8*		•		
0612	2600	4, 5, 6, 7		•		
		8			•	
0713	3700	4, 5		•		
		6, 7, 8			•	
0813	4300	4, 5		•		
		6*, 7, 8			•	
0914	5550	4, 5		•		
		6, 7, 8			•	
0916	6100	4, 5		•		
		6, 7, 8			•	
1018	7600	4, 5, 6, 7, 8			•	
1118	8900	4, 5, 6, 7, 8			•	
1319	11000	4, 5, 6, 7, 8			•	
1422	12500	4, 5, 6, 7			•	
		8				•
1522	13500	4, 5, 6, 7			•	
		8				•
1722	15500	4, 5, 6, 7			•	
		8				•
1724	17500	4, 5, 6			•	
		7, 8				•
1725	19000	4, 5			•	
		6, 7, 8				•
1926	21000	4, 5			•	
		6, 7, 8				•
2127	24500	4, 5			•	
		6, 7, 8				•
2230	29000	4, 5			•	
		6, 7, 8				•
2234	34000	4			•	
		5, 6, 7, 8				•
2434	37000	4			•	
		5, 6, 7, 8				•
2636	43000	4			•	
		5, 6, 7, 8				•

Note: \* For model 0511, 8 rows 12 & 14 FPI, the optimized circuiting is FULL.  
For model 0813, 6 row 8 FPI, the optimized circuiting is HALF.

Working pressure shall be 2060 kPag at 93°C. Coils shall be drainable and have non air trapping circuits. No turbulence promoting devices will be permitted inside the tubes. Headers shall have drain and vent connections.

Chilled Water Coils offerings shall be as follows:

- i) No. of rows: 4, 5, 6, 7 and 8
- ii) Optimized coil circuiting
- iii) 8, 10, 12 and 14 FPI
- iv) 0.016" tube thickness available
- v) 1/2" tube diameter standard
- vi) Aluminium (standard) or copper (option) fins available

## C. Hot Water Coil

Hot water coils shall be constructed similar to the chilled water coil except that the maximum working pressure shall be 1200 kPag at 205°C.

Hot Water Coils offerings shall be as follows:

- i) 1 and 2 rows
- ii) Optimized coil circuiting
- iii) 8, 10, 12 and 14 FPI
- iv) 0.016" tube thickness available
- v) 1/2" tube diameter standard
- vi) Aluminium (standard) or copper (option) fins available

Table 12 Optimized Circuit for 39G Hot Water Coil

Model	CFM	Row	Quarter	Half	Full	Connection Size
0508A	900	1	•			1 1/2" BSP
		2	•	•		1 1/2" BSP
0508B	1300	1	•			1 1/2" BSP
		2	•	•		1 1/2" BSP
0511	1800	1	•			1 1/2" BSP
		2	•	•		1 1/2" BSP
0612	2600	1	•			1 1/2" BSP
		2	•	•		1 1/2" BSP
0713	3700	1,2		•		1 1/2" BSP
0813	4300	1,2		•		1 1/2" BSP
0914	5550	1,2		•		1 1/2" BSP
0916	6100	1,2		•		1 1/2" BSP
1018	7600	1	•			1 1/2" BSP
		2	•	•		1 1/2" BSP
1118	8900	1		•		1 1/2" BSP
		2		•	•	1 1/2" BSP
1319	11000	1		•		1 1/2" BSP
		2		•	•	1 1/2" BSP
1422	12500	1		•		1 1/2" BSP
		2		•	•	1 1/2" BSP
1522	13500	1		•		1 1/2" BSP
		2		•	•	1 1/2" BSP
1722	15500	1		•		1 1/2" BSP
		2		•	•	1 1/2" BSP
1724	17500	1		•		1 1/2" BSP
		2		•	•	1 1/2" BSP
1725	19000	1		•		1 1/2" BSP
		2		•	•	1 1/2" BSP
1926	21000	1		•		1 1/2" BSP
		2		•	•	1 1/2" BSP
2127	24500	1		•		1 1/2" BSP
		2		•	•	1 1/2" BSP
2230	29000	1		•		1 1/2" BSP
		2		•	•	1 1/2" BSP
2234	34000	1		•		1 1/2" BSP
		2		•	•	1 1/2" BSP
2434	37000	1		•		1 1/2" BSP
		2		•	•	1 1/2" BSP
2636	43000	1		•		1 1/2" BSP
		2		•	•	1 1/2" BSP

## D. Direct Expansion Coil

Direct Expansion Coil shall have aluminium/copper fins with belled collars and bonded 12.7mm OD copper tubes by mechanical expansion. Fins shall be of the "Dual Sinewave" form. Coils shall be provided with brass distributors with sweat type connections. Coils shall have full face active area with intertwined circuits for equal loading on each circuit. Suction and metering valve connection shall be on the same end. After leak testing, coil shall be charged with dry air.

Direct Expansion offerings shall be as follows:

- i) 4 and 6 rows
- ii) Optimized coil circuiting (Both row and face split)
- iii) 8, 10, 12 and 14 FPI
- iv) 0.016" tube thickness available
- v) 1/2" tube diameter standard
- vi) Aluminium (standard) or copper (option) fins available

## E. Condensate Drain Pan

The condensate drain pan shall be powder painted galvanized steel and furnished with one female threaded pipe connection of 43mm OD. The condensate drain pan shall be constructed in sloped type with bottom drain outlet to ensure complete drainage and meet ASHRAE 62-89. The drain pan width covers the coil total length ensuring optimum condensate collecting on both the return bends and header side. Slider is welded at drain pan for easier coil removal.

## F. Coil Weight

The weight of the coil section is tabulated in Table 14.

## G. Connection Outline

The coils connection position and diameter are shown in Tables 19 to 20.

Table 13 Optimized Circuit for 39G Direct Expansion Coil

Model	Row	Half	Full	Suction Pipe Diameter	Liquid Diameter
0508A	4, 6	•		7/8"	7/8"
0508B	4, 6	•		7/8"	7/8"
0511	4, 6	•		7/8"	7/8"
0612	4, 6	•		1 3/8"	1 1/8"
0713	4, 6		•	1 3/8"	1 1/8"
0813	4, 6		•	1 3/8"	1 1/8"
0914	4, 6		•	1 3/8"	1 1/8"
0916	4, 6		•	1 5/8"	1 1/8"
1018	4, 6		•	1 5/8"	1 1/8"
1118	4, 6		•	1 5/8"	1 1/8"
1319	4, 6		•	1 5/8"	1 1/8"
1422	4, 6		•	1 5/8"	1 1/8"
1522	4, 6		•	1 5/8"	1 1/8"
1722	4, 6		•	2"	1 3/8"
1724	4, 6		•	2"	1 3/8"
1725	4, 6		•	2 1/8"	1 3/8"
1926	4, 6		•	2 1/8"	1 3/8"
2127	4, 6		•	1 5/8" and 2"	1 1/8" and 1 3/8"
2230	4, 6		•	1 5/8" and 2 1/8"	1 1/8" and 1 3/8"
2234	4, 6		•	1 5/8" and 2 1/8"	1 1/8" and 1 3/8"
2434	4, 6		•	1 5/8" and 2 1/2"	1 1/8" and 1 3/8"
2636	4, 6		•	2" and 2 1/2"	1 1/8" and 1 3/8"

Table 14 Coil Weight

Type of Coil		Hot Water						Chilled Water						Direct Expansion																							
No. of Row	Fins/Inch	1		2		4		5		6		7		8		4		6																			
Unit Size	Face Area (sq.m)	8	10	12	14	8	10	12	14	8	10	12	14	8	10	12	14	8	10	12	14																
Estimated Dry Coil Weight (kg)																																					
0508A	0.170	14	14	15	15	16	16	16	16	18	18	19	19	19	20	20	21	21	21	22	22	23	24	24	24	25	18	18	19	19	19	21	21	21	22	22	
0508B	0.246	16	16	17	17	18	18	19	19	21	22	22	23	23	24	24	25	25	26	26	27	26	27	28	29	30	31	21	22	22	23	23	25	26	26	26	27
0511	0.340	19	19	19	19	21	21	22	22	25	26	27	28	28	29	30	31	30	31	32	33	32	34	35	36	39	25	26	27	28	30	31	32	31	32	33	
0612	0.491	22	22	23	23	26	26	27	27	32	34	35	36	36	37	38	40	39	41	42	44	42	44	46	48	52	32	34	35	36	39	41	42	41	42	44	
0713	0.699	27	27	28	28	31	31	32	34	41	42	44	45	45	47	49	51	50	52	55	57	55	58	60	63	69	41	42	44	45	50	52	55	52	55	57	
0813	0.812	30	30	31	31	35	36	37	38	46	48	50	51	51	54	56	58	57	60	62	65	62	65	69	72	78	46	48	50	51	57	60	62	62	65	66	
0914	1.048	41	42	42	43	48	49	51	52	55	58	60	62	62	65	68	71	77	80	83	87	84	88	92	96	104	55	58	60	62	77	80	83	87	88	87	
0916	1.152	43	44	44	45	51	52	53	54	59	61	64	66	67	70	73	76	82	85	89	93	89	94	98	102	112	59	61	64	66	82	85	89	93	93	93	
1018	1.436	48	49	49	50	58	59	61	62	77	80	83	86	86	90	94	98	96	101	105	110	105	111	116	122	134	77	80	83	86	96	101	105	110	110	110	
1118	1.681	53	54	55	56	64	66	68	70	87	90	94	98	98	103	107	112	109	115	120	126	120	127	133	140	154	87	90	94	98	109	115	120	126	126	126	
1319	2.078	61	62	64	65	75	77	80	82	103	107	112	116	117	122	128	134	130	137	144	151	144	152	160	168	185	103	107	112	116	130	137	144	151	151	151	
1422	2.360	69	71	72	74	85	88	90	93	117	122	127	132	133	139	145	152	148	156	164	171	164	173	182	191	210	117	122	127	132	148	156	164	171	171	171	
1522	2.550	75	77	78	80	92	95	98	101	126	131	137	142	144	150	157	164	159	168	177	185	177	186	196	206	227	126	131	137	142	159	168	177	185	185	185	
1722	2.930	86	88	90	92	106	109	112	115	145	151	158	163	165	172	180	189	183	193	203	213	203	214	225	237	260	145	151	158	163	183	193	203	213	213	213	
1724	3.300	97	99	107	103	119	123	126	130	164	170	178	184	186	194	203	213	207	218	229	240	229	242	254	267	294	164	170	178	184	207	218	229	240	240	240	
1725	3.590	105	107	110	112	129	133	137	142	178	185	193	200	202	211	221	231	224	236	249	261	249	262	276	290	319	178	185	193	200	224	236	249	261	261	261	
1926	3.960	116	119	121	124	143	147	152	156	196	204	214	221	223	233	244	256	248	261	275	288	275	290	305	320	353	196	204	214	221	248	261	275	288	288	288	
2127	4.620	136	139	142	145	167	172	177	182	229	238	249	258	260	271	285	298	289	305	320	336	336	338	356	374	412	229	238	249	258	289	305	320	336	336	336	
2230	5.470	161	164	167	171	198	204	210	216	271	282	295	306	308	321	337	353	342	361	379	398	379	400	421	443	487	271	282	295	306	342	361	379	398	398	398	
2234	6.420	188	192	197	201	232	239	246	253	318	330	346	358	361	377	395	414	402	423	445	466	445	469	494	519	571	318	330	346	358	402	423	445	466	466	466	
2434	6.990	205	209	214	218	252	260	265	276	346	360	376	390	393	410	430	450	437	461	484	508	484	511	538	565	622	346	360	376	390	437	461	484	508	508	508	
2636	8.120	238	243	249	254	293	302	311	320	402	418	437	453	457	476	500	523	508	535	562	590	562	594	625	656	723	402	418	437	453	508	535	562	590	590	590	

Note : 1. All coils are of 13mm OD copper tubes with aluminium plate fin construction.  
 2. To estimate the weight of water content (kg) use : Face area (sq.m) x no. of rows x 7.0 kg/sq.m  
 3. To estimate dry coil weight (kg) for copper-plate fin construction, use the above data (kg) x 3.3

**Table 15 Chilled Water Coil - Horizontal Draw Thru AHU - 25mm Casing**

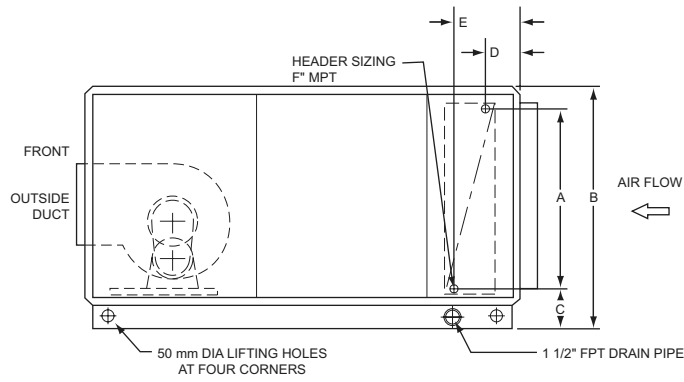
Unit size 39G	4 Row Coil						5 Row Coil						6 Row Coil						7 Row Coil						8 Row Coil											
	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
0508A	353	710	208	178	238	1 1/2"	353	710	208	178	257	1 1/2"	353	710	208	178	277	1 1/2"	353	710	208	178	297	1 1/2"	353	710	208	178	297	1 1/2"	353	710	208	178	297	1 1/2"
0508B	353	710	208	178	238	1 1/2"	353	710	208	178	257	1 1/2"	353	710	208	178	277	1 1/2"	353	710	208	178	297	1 1/2"	353	710	208	178	297	1 1/2"	353	710	208	178	297	1 1/2"
0511	353	710	208	178	238	1 1/2"	353	710	208	178	257	1 1/2"	353	710	208	178	277	1 1/2"	353	710	208	178	297	1 1/2"	353	710	208	178	297	1 1/2"	353	710	208	178	297	1 1/2"
0612	480	810	208	178	238	1 1/2"	480	810	208	178	257	1 1/2"	480	810	208	178	277	1 1/2"	480	810	208	178	297	1 1/2"	480	810	208	178	297	1 1/2"	480	810	208	178	297	1 1/2"
0713	544	910	208	178	238	1 1/2"	544	910	208	178	257	1 1/2"	544	910	208	178	277	1 1/2"	544	910	208	178	297	1 1/2"	544	910	208	178	297	1 1/2"	544	910	208	178	297	1 1/2"
0813	671	1010	208	178	238	1 1/2"	671	1010	208	178	257	1 1/2"	671	1010	208	178	277	1 1/2"	671	1010	208	178	297	1 1/2"	671	1010	208	178	297	1 1/2"	671	1010	208	178	297	1 1/2"
0914	798	1110	208	178	238	1 1/2"	798	1110	208	178	257	1 1/2"	798	1110	208	178	277	1 1/2"	798	1110	208	178	297	1 1/2"	798	1110	208	178	297	1 1/2"	798	1110	208	178	297	1 1/2"
0916	798	1110	208	178	238	1 1/2"	798	1110	208	178	257	1 1/2"	798	1110	208	178	277	1 1/2"	798	1110	208	178	297	1 1/2"	798	1110	208	178	297	1 1/2"	798	1110	208	178	297	1 1/2"
1018	847	1210	215	178	238	2"	847	1210	215	178	257	2"	847	1210	215	178	277	2"	847	1210	215	178	297	2"	847	1210	215	178	297	2"	847	1210	215	178	297	2"
1118	974	1310	215	178	238	2"	974	1310	215	178	257	2"	974	1310	215	178	277	2"	974	1310	215	178	297	2"	974	1310	215	178	297	2"	974	1310	215	178	297	2"
1319	1164	1510	215	178	238	2"	1164	1510	215	178	257	2"	1164	1510	221	178	277	2 1/2"	1164	1510	221	178	297	2 1/2"	1164	1510	221	178	297	2 1/2"	1164	1510	221	178	297	2 1/2"
1422	1179	1610	221	178	238	2 1/2"	1179	1610	221	178	257	2 1/2"	1179	1610	221	178	277	2 1/2"	1179	1610	221	178	297	2 1/2"	1179	1610	221	178	297	2 1/2"	1179	1610	221	178	297	2 1/2"
1522	1278	1710	221	178	238	2 1/2"	1278	1710	221	178	257	2 1/2"	1278	1710	221	178	277	2 1/2"	1278	1710	221	178	297	2 1/2"	1278	1710	221	178	297	2 1/2"	1278	1710	221	178	297	2 1/2"
1722	1456	1910	228	198	277	3"	1456	1910	228	198	297	3"	1456	1910	228	198	277	3"	1456	1910	228	198	297	3"	1456	1910	228	198	297	3"	1456	1910	228	198	297	3"
1724	1456	1910	228	198	277	3"	1456	1910	228	198	297	3"	1456	1910	228	198	277	3"	1456	1910	228	198	297	3"	1456	1910	228	198	297	3"	1456	1910	228	198	297	3"
1725	1456	1910	228	198	277	3"	1456	1910	228	198	297	3"	1456	1910	228	198	277	3"	1456	1910	228	198	297	3"	1456	1910	228	198	297	3"	1456	1910	228	198	297	3"
1926	1647	2110	228	198	277	3"	1647	2110	228	198	297	3"	1647	2110	228	198	277	3"	1647	2110	228	198	297	3"	1647	2110	228	198	297	3"	1647	2110	228	198	297	3"
*2127	643	2310	228	178	277	2 1/2"	643	2310	228	178	297	2 1/2"	643	2310	228	178	277	2 1/2"	643	2310	228	178	297	2 1/2"	643	2310	228	178	297	2 1/2"	643	2310	228	178	297	2 1/2"
	1139					3"	1139					3"	1139					3"	1139					3"	1139					3"	1139					3"
*2230	770	2410	228	178	277	2 1/2"	770	2410	228	178	297	2 1/2"	770	2410	228	178	277	2 1/2"	770	2410	228	178	297	2 1/2"	770	2410	228	178	297	2 1/2"	770	2410	228	178	297	2 1/2"
	1139					3"	1139					3"	1139					3"	1139					3"	1139					3"	1139					3"
*2234	770	2410	228	178	277	2 1/2"	770	2410	228	178	297	2 1/2"	770	2410	228	178	277	2 1/2"	770	2410	228	178	297	2 1/2"	770	2410	228	178	297	2 1/2"	770	2410	228	178	297	2 1/2"
	1139					3"	1139					3"	1139					3"	1139					3"	1139					3"	1139					3"
*2434	643	2610	228	178	277	2 1/2"	643	2610	228	178	297	2 1/2"	643	2610	228	178	277	2 1/2"	643	2610	228	178	297	2 1/2"	643	2610	228	178	297	2 1/2"	643	2610	228	178	297	2 1/2"
	1456					3"	1456					3"	1456					3"	1456					3"	1456					3"	1456					3"
*2636	834	2810	228	178	277	2 1/2"	834	2810	228	178	297	2 1/2"	834	2810	228	178	277	2 1/2"	834	2810	228	178	297	2 1/2"	834	2810	228	178	297	2 1/2"	834	2810	228	178	297	2 1/2"
	1456					3"	1456					3"	1456					3"	1456					3"	1456					3"	1456					3"

**Remarks :** 1. Refer schematic drawing page no. 45 for specific dimension.  
 2. \* AHU with 2 coil blocks.  
 3. Top dimension refer to the upper coil; bottom dimension refer to the lower coil (A & F dimension).

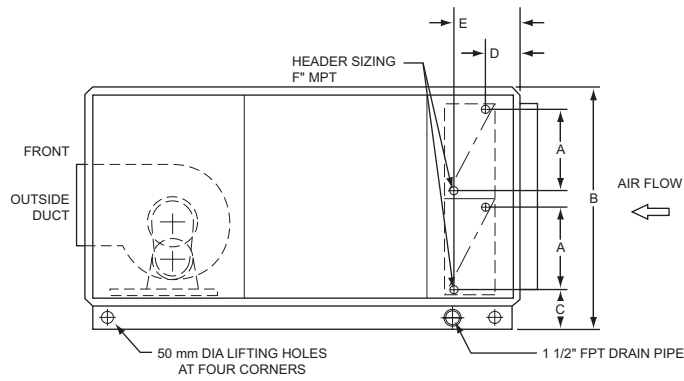
Table 16 Chilled Water Coil - Vertical Draw Thru AHU - 25mm Casing

Unit Size 39G	4 Row Coil				5 Row Coil				6 Row Coil				7 Row Coil				8 Row Coil							
	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
0508A	353	710	208	178	238	1 1/2"	353	710	208	178	257	1 1/2"	353	710	208	178	277	1 1/2"	353	710	208	178	297	1 1/2"
0508B	353	710	208	178	238	1 1/2"	353	710	208	178	257	1 1/2"	353	710	208	178	277	1 1/2"	353	710	208	178	297	1 1/2"
0511	353	710	208	178	238	1 1/2"	353	710	208	178	257	1 1/2"	353	710	208	178	277	1 1/2"	353	710	208	178	297	1 1/2"
0612	480	810	208	178	238	1 1/2"	480	810	208	178	257	1 1/2"	480	810	208	178	277	1 1/2"	480	810	208	178	297	1 1/2"
0713	544	910	208	178	238	1 1/2"	544	910	208	178	257	1 1/2"	544	910	208	178	277	1 1/2"	544	910	208	178	297	1 1/2"
0813	671	1010	208	178	238	1 1/2"	671	1010	208	178	257	1 1/2"	671	1010	208	178	277	1 1/2"	671	1010	208	178	297	1 1/2"
0914	798	1110	208	178	238	1 1/2"	798	1110	208	178	257	1 1/2"	798	1110	215	178	277	2"	798	1110	215	178	297	2"
0916	798	1110	208	178	238	1 1/2"	798	1110	208	178	257	1 1/2"	798	1110	215	178	277	2"	798	1110	215	178	297	2"
1018	847	1210	215	178	238	2"	847	1210	215	178	257	2"	847	1210	215	178	277	2"	847	1210	215	178	297	2"
1118	974	1310	215	178	238	2"	974	1310	215	178	257	2"	974	1310	215	178	277	2"	974	1310	215	178	297	2"
1319	1164	1510	215	178	238	2"	1164	1510	215	178	257	2"	1164	1510	221	178	277	2 1/2"	1164	1510	221	178	297	2 1/2"
1422	1179	1610	221	178	238	2 1/2"	1179	1610	221	178	257	2 1/2"	1179	1610	221	178	277	2 1/2"	1179	1610	221	178	297	2 1/2"
1522	1278	1710	221	178	238	2 1/2"	1278	1710	221	178	257	2 1/2"	1278	1710	221	178	277	2 1/2"	1278	1710	221	178	297	2 1/2"
1722	1456	1910	228	198	277	3"	1456	1910	228	198	297	3"	1456	1910	228	198	277	3"	1456	1910	228	198	297	3"
1724	1456	1910	228	198	277	3"	1456	1910	228	198	297	3"	1456	1910	228	198	277	3"	1456	1910	228	198	297	3"
1725	1456	1910	228	198	277	3"	1456	1910	228	198	297	3"	1456	1910	228	198	277	3"	1456	1910	228	198	297	3"
1926	1647	2110	228	198	277	3"	1647	2110	228	198	297	3"	1647	2110	228	198	277	3"	1647	2110	228	198	297	3"
*2127	643	2310	228	178	277	2 1/2"	643	2310	228	178	297	2 1/2"	643	2310	228	178	277	2 1/2"	643	2310	228	178	297	2 1/2"
	1139					3"	1139					3"	1139				3"	1139				3"		
*2230	770	2410	228	178	277	2 1/2"	770	2410	228	178	297	2 1/2"	770	2410	228	178	277	2 1/2"	770	2410	228	178	297	2 1/2"
	1139					3"	1139					3"	1139				3"	1139				3"		
*2234	770	2410	228	178	277	2 1/2"	770	2410	228	178	297	2 1/2"	770	2410	228	178	277	2 1/2"	770	2410	228	178	297	2 1/2"
	1139					3"	1139					3"	1139				3"	1139				3"		
*2434	643	2610	228	178	277	2 1/2"	643	2610	228	178	297	2 1/2"	643	2610	228	178	277	2 1/2"	643	2610	228	178	297	2 1/2"
	1456					3"	1456					3"	1456				3"	1456				3"		
*2636	834	2810	228	178	277	2 1/2"	834	2810	228	178	297	2 1/2"	834	2810	228	178	277	2 1/2"	834	2810	228	178	297	2 1/2"
	1456					3"	1456					3"	1456				3"	1456				3"		

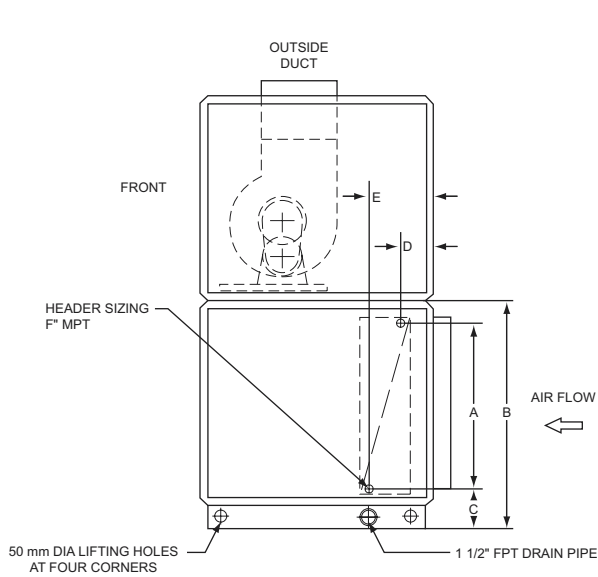
Remarks : 1. Refer schematic drawing page no. 45 for specific dimension.  
 2. \* AHU with 2 coil blocks.  
 3. Top dimension refer to the upper coil; bottom dimension refer to the lower coil (A & F dimension).



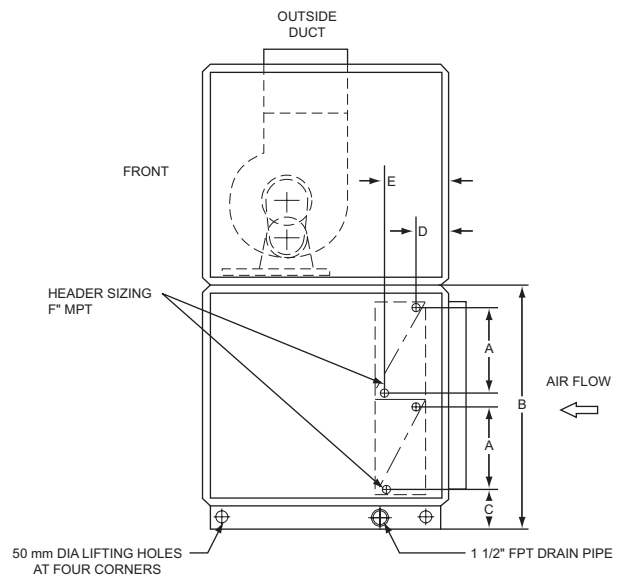
Unit Size: 0508A - 1926



Unit Size: 2127 - 2636



Unit Size: 0508A - 1926



Unit Size: 2127 - 2636

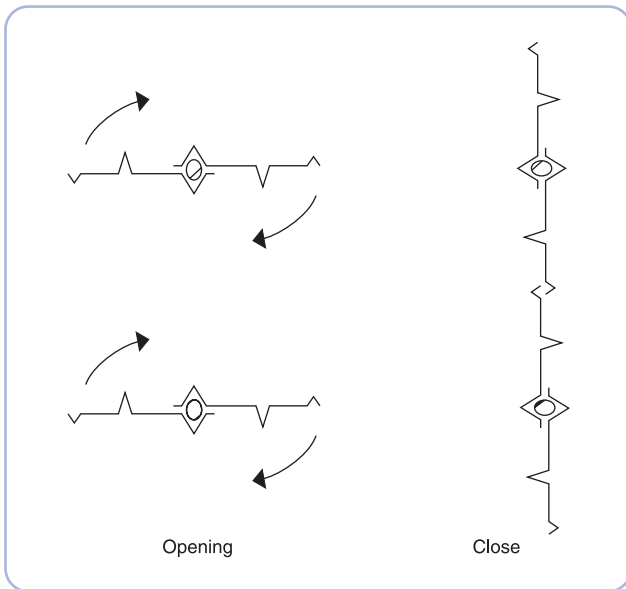
▲ Figure 9 Connection Outline

# Mixing Box

## A. General

Mixing box shall have parallel blades, interconnected opposing action between outdoor air and return air dampers. Dampers blades shall be brake formed for stiffness and shall be spot welded to a 13mm O.D. steel rods rotating in nylon bushings press-seated in rigid damper frames. Damper shall be fabricated from 1.2mm (18 gauge) thick galvanized steel sheet and the damper frame of 1.2mm (18 gauge) thick with a finishing of oven cured polyester based powder paint.

Dampers shall be sectionalized to limit blade length to not more than 1526mm in order to prevent excessive blade warping and ensure tight closure. Outdoor air and return air dampers shall be of the same area (Figure 10 and Table 19).



▲ Figure 10 Outdoor air and return air dampers

Air leakage using damper area ration and a perimeter gap of 3mm between blade and frame results in leakage rate of approximately 3% as a complete system when either one damper assembly is completely closed.

The damper are located on the outside of mixing boxes and the standard damper location shall be top and rear.

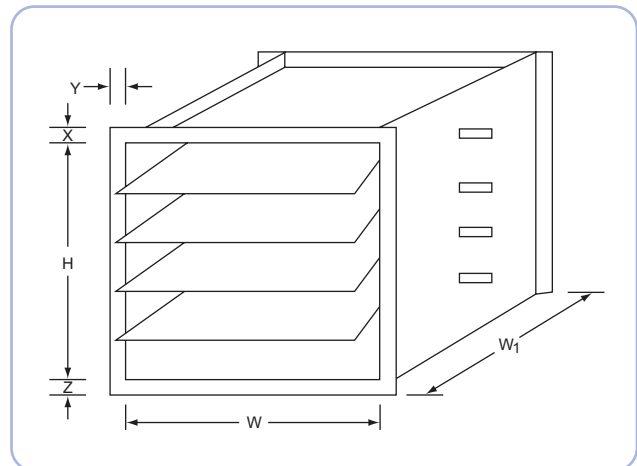
Interconnection between outdoor air and return air damper is made with push rods installed in the factory. The damper blades for each assembly shall be connected using linkages on one side of the damper frames ensuring its synchronous movement.

The damper frame is U-formed/flanged but not drilled which serves as a flange or duct work connection.

Table 19 Mixing Box Section in Module

Unit Size 39G	Module Length (M)	Opening		
		H	X	W (mm)
0508A/B	6	480	X	726
0511	6	480	X	1026
0612	6	480	X	1126
0713	6	480	X	1226
0813	6	480	X	1226
0914	6	480	X	1326
0916	6	480	X	1526
1018	6	480	X	1726
1118	6	480	X	1726
1319	6	480	X	1826
1422	9	795	X	2126
1522	9	795	X	2126
1722	9	795	X	2126
1724	9	795	X	2326
1725	9	795	X	2426
1926	13	1267	X	2526
2127	13	1267	X	2626
2230	13	1267	X	2926
2234	13	1267	X	3326
2434	13	1267	X	3326
2636	13	1267	X	3526

Note: 1. The above dimensions applicable for 39GA 25mm  
 2.  $W_1 = 200\text{mm}$   $Z = 82\text{mm}$  (0508A to 1319) or  
 $X = 36\text{mm}$  (0508A to 1725) or  $67\text{mm}$  (1422 to 1725) or  
 $15.2\text{mm}$  (1926 to 2636)  $15.2\text{mm}$  (1926 to 2636)  
 $Y = 36\text{mm}$



▲ Figure 11

Table 20 Mixing Box Dampers Friction Loss

Section	Velocity (m/s)					
	1.50	2.00	2.50	3.00	3.50	4.00
Mixing Box (Pa)	2.49	4.98	9.96	12.46	14.95	19.93

## A. General

The types of filters offered in 39G are as follows:

- i) HVF - High velocity filters
- ii) BF - Bag filters

Each filter type selected shall include a 39G section with the appropriate tracks. The filter section shall be similar in construction as the other 39G sections. The tracks supplied shall be in accordance to the HVAC filter standard sizes and its gravimetric efficiency per ASHRAE 52-76.

## B. High Velocity Filter (HVF)

Commonly known as pre-filter, the HVF is offered with a thickness of either 25mm or 50mm. The standard gravimetric efficiency shall be 85% with 70% optional and media are washable made of aluminium or synthetic fibre. The HVF can be installed to the 39G as follows:

- i) Front loading with track only (i.e. free return application)
- ii) Front loading/withdrawal filter track within 2 module length section. When require filter section which must be able to accessible for filter loading/withdrawal by access door at return duct (i.e. duct return application) or access door at mixing box.

The frames and tracks are fabricated of 1.25mm (18 gauge) thick galvanized steel sheet.

## C. Bag Filter (BF)

The bag filter is normally used as 2nd stage filtration media. The factory standard efficiency shall be 95% gravimetric efficiency. Media are disposable type. The bag filter media shall be synthetic fibre of 600mm bag length and 25mm thick aluminium frame.

As a standard, the BF section comprises of 6 module, by front loading/withdrawal method.

## D. Friction Pressure Drop

Due to filter media resists to the air flow resulting in static loss, therefore refer to Table 23 on the respective static pressure loss against velocity (interpolation is permissible).

**Table 17 Filter Pressure Drop (Pa)**

Filter	Face Velocity (m/s)	1.5	2.0	2.5	3.0	3.5
HVF 2" thick 85% gravimetric		8.96	12.46	19.93	27.40	37.40
BF 600mm bag length 95% gravimetric		9.96	14.95	29.89	47.33	69.75

**Note:** Data shown is for clean filter, based on synthetic fibre material. The normal allowable pressure drop for dirty filter should not exceed 300Pa (1.2" W.G).

**Table 18 Filter Type, Dimension and Quantity for Each AHU Size**

Filter Type	Model										
	0508A	0508B	0511	0612	0713	0813	0914	0916	1018	1118	1319
<b>a) 2" HVF Washable</b>											
( H245XW495 ) mm	1	1	1	-	-	-	-	-	-	-	-
( H495XW495 ) mm	1	1	2	-	-	-	-	-	-	-	-
( H295XW595 ) mm	-	-	-	1	-	-	2	3	3	3	-
( H595XW595 ) mm	-	-	-	1	2	2	2	2	3	3	6
<b>b) Bag Filter</b>											
( H245XW495 ) mm	-	-	-	-	-	-	-	-	-	-	-
( H495XW495 ) mm	-	-	-	-	-	-	-	-	-	-	-
( H295XW595 ) mm	-	-	-	1	-	-	2	3	3	3	-
( H595XW595 ) mm	-	-	-	1	2	2	2	2	3	3	6

Filter Type	Model										
	1422	1522	1722	1724	1725	1926	2127	2230	2234	2434	2636
<b>a) 2" HVF Washable</b>											
( H245XW495 ) mm	-	-	-	-	-	-	-	-	-	-	-
( H495XW495 ) mm	-	-	-	-	-	-	-	-	-	-	-
( H295XW595 ) mm	2	2	5	5	4	-	4	7	8	8	4
( H595XW595 ) mm	6	6	6	6	8	12	12	12	15	15	20
<b>b) Bag Filter</b>											
( H245XW495 ) mm	-	-	-	-	-	-	-	-	-	-	-
( H495XW495 ) mm	-	-	-	-	-	-	-	-	-	-	-
( H295XW595 ) mm	2	2	5	5	4	-	4	7	8	8	4
( H595XW595 ) mm	6	6	6	6	8	12	12	12	15	15	20

**Remark :** The bag filter media shall be synthetic fibre of 600 mm. bag length or less, in case of using bag length more than 600 mm. Please consult your local CARRIER office to arrange for filter section to match with.

**บริษัท แคนเรีย (ประเทศไทย) จำกัด**  
 ชั้น 14-15 อาคารเนชั่น ทาวเวอร์  
 46/63-74 ถ.บางนา-ตราด กม. 4.5  
 บางนา กรุงเทพฯ 10260  
 โทร. 0-2751-4777 แฟกซ์: 0-2751-4778

**Carrier (Thailand) Ltd.**  
 14-15<sup>th</sup> Fl., Nation Tower,  
 46/63-74 Bangna-Trad Road Km. 4.5, Bangna,  
 Bangkok 10260 Thailand  
 Tel.: 0-2751-4777 Fax: 0-2751-4778



YOUR CARRIER MAN :