Product Catalog

Quantum Climate Changer
Model CLCP$_{Euro}$

0.5 - 31 m³/s
(1000 - 65000 CFM)

EUROVENT CERTIFIED PERFORMANCE
AHU-04-01-049
CLCP EURO
www.eurovent-certification.com

September 2016

IND-PRC005A-EN

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Introduction

The Foundation Grows Deeper With The Introduction Of The All New The Quantum CLCP $_{Euro}$ Leading The Way To High Performance Building Climate Control

Technological Leadership

Trane's pioneering leadership in making building work better for life has seen many milestone in recent years. In 1989, Trane revolutionized the HVAC industry with the development of the Modular Climate Changer™ Air Handler.

Using a "building block" approach to air handler design, Trane dramatically increased the flexibility of cataloged air handlers and systems.

The Quantum Climate Changer followed in 1992 with introduction of Aluminum-pentapost frames and doubled skin panels.

This was superseded with the industry leading Performances certified $CLCP_{Euro}$. As customer demand for even greater flexibility, performance and customization grows, Trane continues this innovative legacy.

The $CLCP_{Euro}$, today marks the next milestone of performance which takes the Quantum line into performance driven applications.

Trane global engineering is renowned for reliable, high quality, environmentally responsible designs. Critical performance applications require confidence in your flexible air-handling system. Trane experts provide testing, tools, and data to give precise and predictable performance. Trane engineered solutions tailored to your specific performance requirements include:

- Energy recovery
- Dehumidification
- Energy efficiency
- Demanding high static applications
- Meeting stringent IAQ standards.

3 CLCP Family lines are available to help you design the right product for your application

- 25mm $CLCP_{Euro}$ 25
- 50mm $CLCP_{Euro}$ 50
- 50mm $CLCP_{Euro}$ XP

Check with your local Trane Sales engineer to decide which best meets your needs.

Shared Knowledge

Trane custom application and design engineers work directly with you and Trane sales team help you create a safe, comfortable and efficient indoor environment for new and existing buildings, or develop stringently controlled conditions for process applications. It's almost like having your own custom design team.

The First Step

Designing for a hospital? Electronics plants? Pharmaceutical facility? A university R&D Lab? Trane has experts experienced in these vertical markets and others to help you design and deliver the greatest value.

For a successful flexible air-handling Project, in these critical process environments, involve your local Trane sales team early - communication is key.

Your Trane team includes factory application and design engineers with the expertise and systems knowledge to help you specify the optimal HVAC package for your new or existing building.

From Standard Commercial AHUs to Customized Flexibility

Trane $CLCP_{Euro}$ Air Handlers offers flexibility and performances demanded by process sensitive operations in the healthcare, electronics life-sciences and pharmaceutical markets. Whether your specific need is in specialized ventilation monitoring capabilities, a unique footprint, a high performance thermal and leakage casing, engineered dehumidification, Trane engineers will work closely with you to understand and meet your specifications, schedule, and budget.

With Trane custom air handlers you can "fine-tune" your performance to exactly meet your specifications. Trane can make recommendations on component selection based on pre-tested performance data gathered in our labs, positioning you to make a more informed decision.

Though you are not limited to components Trane has pre tested, Trane validated performance is available for many options, including:

- Trane coils with:
  - A unique, high-efficient fin design, optimizing the coil to the nearest fin-per-foot
  - One of the highest moisture carryover limits in the industry
- Fans with precise vibration, balancing and performance standards.
- Traq airflow monitoring stations (outdoor air)
- Trane energy recovery packages and energy efficiency packages
- Unit sound data per partial ARI 260 covering, discharge, inlet and inlet + casing.
- Trane CDQ (Cool, Dry, Quiet) desiccant dehumidification
  - Breaks the dew-point barrier using standard equipment
  - Uses less energy than comparable systems
- Full Factory Mounted Controls (FMC) packages on your AHUs. (Unit level power, sensor and intelligence).

No Surprises

Data that we have gathered through years of testing in our research and development labs enables us to more accurately predict your specific unit performance. This data, used to engineer your custom air handler design, includes:

- ARI Standard 410 compliance coil performance
- Unit casings designed for :
  - comfort and process applications up to 8 inches w.g. of total static pressure (2000Pa)
- Unit air leakage rates that certify up to Eurovent Class L1 [highest in it's class], further improves IAQ.
- Eurovent Class D1 strength certification. [highest in it's class]
- Unit thermal performance up to Eurovent TB1. [Highest in it's class]
- Unit acoustical performance

In addition to testing our designs in the laboratory, factory performance testing is also available for complete peace of mind. From running fans, to pressure testing our coils, to operating the controls, we provide you performance data in which you can be confident. You have enough to manage with your project.

You don't need any last minute surprises with your $CLCP_{Euro}$ Air Handler.

The Quantum $CLCP_{Euro}$. Built For Performance.

Model Number Descriptions

Description

Digit 1 thru 9

CLCP25 = Standard CLCP(25mm) Unit - Non Certified
CLCP50 = Standard CLCP(50mm) Unit - Non Certified
CLCPXP = Standard CLCPXP(50mm) Unit - Non Certified
$CLCP_{Euro}25$ = $CLCP_{Euro}$-25mm-Eurovent Certified
$CLCP_{Euro}50$ = $CLCP_{Euro}$-50mm-Eurovent Certified
$CLCP_{Euro}XP$ = $CLCP_{Euro}$ XP(50mm) Eurovent Certified

Digit 10, 11, 12 — Casing Sizes:

003	03A	004	005	006	007	008	009
010	011	012	013	014	015	016	018
020	022	025	028	030	032	035	038
040	042	045	048	050	055	060	062
065	070	080	085	090	095	100	110
120							

Digit 13, 14, 15, 16 — Casing Parametric Dimension:

0404(003)	0504(03A)	0604(004)	0704(005)
0804(006)	0904(007)	1004(008)	1104(009)
0806(010)	0906(011)	1003(012)	1106(013)
1206(014)	1107(015)	1008(016)	1108(018)
1208(020)	1209(022)	1210(025)	1310(028)
1212(030)	1312(032)	1412(035)	1512(038)
1612(040)	1712(042)	1812(045)	1912(048)
2012(050)	2013(055)	2014(060)	2114(062)
2214(065)	2414(070)	2614(080)	2814(085)
3014(090)	3214(095)	3216(100)	3217(110)
3218(120)			

Digit 17 — Insulation Type:

A = 25mm PU B = 50mm PU S = Special

Digit 18 — Country Of Origin:

M = Malaysia

Digit 19 — Fan Model:

(Examples)

(FDA0900CM) (ADH09000R)
(BDB1000XM) (RDH05000K1)
(ADA0400TM) (RDA04000K)

Digit 20, 21— Fan Arrangement:

01 = ARR 1 02 = ARR 2 03 = ARR 3
04 = ARR 4 05 = ARR 5 06 = ARR 6
07 = ARR 7 08 = ARR 8 09 = ARR 9
10 = ARR 10 11 = ARR 11 12 = ARR 12
XX = None SS = Special

Digit 22, 23, 24— Motor Pole, kW Eff

(22 Motor Pole:)

2 = 2 Pole 4 = 4 Pole 5 = 4/6 Pole
6 = 6 Pole 7 = 4/8 Pole 8 = 8 Pole
T = 10 Pole X = None

(23 Motor kW:)

A = 0.18kW	B = 0.37kW	C = 0.55kW
D = 0.75kW	E = 1.1kW	F = 1.5kW
G = 2.2kW	H = 3kW	J = 4kW
K = 5.5kW	L = 7.5kW	M = 11kW
N = 15kW	O = 18.5kW	P = 22kW
Q = 30kW	R = 37kW	T = 45kW
U = 55kW	V = 75kW	W = 90kW
Y = 110kW	Z = 132kW	X = None

(24 Efficiency:)

1 = IE1 (STD Eff) 2 = IE2 (Hi Eff)
3 = IE3 (Premium Eff) X = None

Digit 25 — Electrical rating of Motor : Volt/Phase/Hz.

D = 380-415 V / 3 Ph / 50 Hz
E = 200 V / 3 Ph / 50 Hz
F = 230 V / 3 Ph / 60 Hz
G = 380 V / 3 Ph / 60 Hz
H = 440 V / 3 Ph / 60 Hz
J = 460 V / 3 Ph / 60 Hz
K = 480 V / 3 Ph / 60 Hz
L = 200 V/ 3 Ph 60 Hz
M = 380 V / 3 Ph / 50 Hz
N = 400 V / 3 Ph / 50 Hz
P = 415 V / 3 Ph / 50 Hz
None

Digit 26 — Fan Pulley Size
Digit 27, 28 — Fan Shaft Diameter,--mm
Digit 29 — Motor Pulley Size
Digit30,31—Motor Shaft Diameter,--mm

A = 63	B = 67	C = 71	D = 75
E = 80	F = 85	G = 90	H = 95
I = 100	J = 106	K = 112	L= 118
M = 125	N = 132	O = 140	P = 150
Q = 160	R = 170	S = 180	T = 190
U = 200	V= 212	W = 224	Y = 236
Z = 250	Ψ = 265	1 = 280	и = 300
2 = 315	3 = 335	Ə = 355	£ = 375
4 = 400	Я = 425	5 = 450	¢ = 475
6 = 500	Ω = 530	7 = 560	8 = 630
9 = 710	X = None		

Digit 32 — Belt Type

A =SPA B=SPB C=SPC Z=SPZ X=None

Digit 33,34,35,36 —Belt Length, ---- mm

Digit 37 — Pulley Grooves

1 = 1Groove 2 = 2Groove 3 = 3Groove
4 = 4Groove 5 = 5Groove X = None

Digit 38 — Pre-Filter Media

A = 2” TA-Pleated (30% Eff), G4
B = 2” WA (20% Eff), G3
C = 2” ALUMINUM, G2
D = 4” TA-Pleated (30% Eff), G4
S = SPECIAL
X = None

Digit 39 & 40 — Filter Media #1 & #2

A = 2” TA-Pleated (30% Eff), G4
B = 2” WA (20% Eff) G3
C = 2” ALUMINUM, G2
D = 4” TA-Pleated (30% Eff) G4
E = HEPA (99.97%) H13
F = HEPA (99.99%) H13
G = 15” Bag (65% Eff) F6
H = 15” Bag (85% Eff) F7
I = 15” Bag (95% Eff) F8
J = 4” Cartridge (65% Eff) F6
K = 4” Cartridge (85% Eff) F7
L = 4” Cartridge (95% Eff) F8
M = 21” Bag (65% Eff) F6
N = 21” Bag (85% Eff) F7
O = 21” Bag (95% Eff) F8
P = 12” Cartridge (65% Eff) F6
Q = 12” Cartridge (85% Eff) F7
R = 12” Cartridge (95% Eff) F8
S = 10” Bag (85% Eff) F7
T = 10” Bag (95% Eff) F8
U = Biocell (95% Eff) F9
V = PTFE
X = None

Digit 41 — Coil Section #1, Type:

D = DL(1/2” Tube) L = LL(1/2” Tube)
W = WL(1/2” Tube) H = WLH (1/2” Tube)
V = WL(3/8” Tube) F = FD(1/2” Tube)
A = A(1/2” Tube) B = AA(1/2” Tube)
S = Special

Digit 42 — Coil Connection:

L = LH R = RH B = Both Sides X = None

Digit 43,44 — Coil Rows:

01 = 1 Row 02 = 2 Row 03 = 3 Row
04 = 4 Row 05 = 5 Row 06 = 6 Row
08 = 8 Row 10 = 10 Row 12 = 12 Row
XX = without coil

Digit 45,46,47 — Coil Fin Series (FPF):

100 - 168 Fins per Foot XXX = without coil
SSS = Special

Digit 48 — Coil Turbulator:

X = No Y = Yes

Digit 49 — Coil Section # 2, Type

D = DL (1/2” Tube) L = LL (1/2” Tube)
W = WL (1/2” Tube) H = WLH (1/2” Tube)
Q = WLQ (1/2” Tube) V = WL (3/8” Tube)
F = FD (1/2” Tube) A = A (1/2” Tube)
B = AA (1/2” Tube) S = Special

Model Number Descriptions

Digit 50 — Coil Connection:
L = LH R = RH B = Both Sides X = None

Digit 51,52 — Coil Rows :
01 = 1 Row 02 = 2 Row 03 = 3 Row
04 = 4 Row 05 = 5 Row 06 = 6 Row
08 = 8 Row 10 = 10 Row 12 = 12 Row
XX = without coil

Digit 53,54,55 — Coil Fin Series (FPF):
100 - 168 Fins per Foot XXX = without coil
SSS = Special

Digit 56 — Coil Turbulator:
X = No Y = Yes

Digit 57 — Coil Section # 3, Type
D = DL (1/2" Tube) L = LL (1/2" Tube)
W = WL (1/2" Tube) H = WLH (1/2" Tube)
Q = WLQ (1/2" Tube) V = WL (3/8" Tube)
F = FD (1/2" Tube) A = A (1/2" Tube)
B = AA (1/2" Tube) S = Special

Digit 58 — Coil Connection:
L = LH R = RH B = Both Sides X = None

Digit 59,60 — Coil Rows :
01 = 1 Row 02 = 2 Row 03 = 3 Row
04 = 4 Row 05 = 5 Row 06 = 6 Row
08 = 8 Row 10 = 10 Row 12 = 12 Row
XX = without coil

Digit 61,62,63 — Coil Fin Series (FPF):
100 - 168 Fins per Foot XXX = without coil

Digit 64 — Coil Turbulator:
X = No Y = Yes

Digit 65 — Service Digit,
D = 8 New Unit Sizes Added - Jan 2016

$CLCP_{Euro}$ Features and Benefits

Low Leak Construction

Unique casing design allows the casing to meet Eurovent Casing Air Leakage Standard, L1 ($CLCP_{Euro}$ XP) Refer to the Eurovent Result Summary Chart for details.

Excellent Condensate Management

Dual pitched sloping drain pan allows for total condensate removal. A unique IAQ feature development to prevent stagnant water in air handling units.

Environmental Friendly Materials

High-grade aluminum frame is non-corrosive and is easily clean-able. All these features will further enhance indoor air quality.

Design for Routine Cleaning

Double wall panel construction allows for easy cleaning and disinfecting of the interior surfaces. Panel and frame design allows for easy removal of side panels for maximum access to internal areas. Interior is mostly of a flushed, clean construction.

High Grade Aluminum Frame

Frame is constructed of extruded aluminum channels for structural rigidity and lightness. The frame shall be a full thermal break design ($CLCP_{Euro}$ XP).

Injected Polyurethane Foam Panels

All panels are injected with high efficiency polyurethane foam insulation. Foamed panels provide superior thermal resistance properties, and have excellent acoustic and vibration absorption characteristics. In addition, polyurethane foam does not absorb moisture and will not promote fungus growth. The PU Foam used is CFC free.

High Efficiency Performance

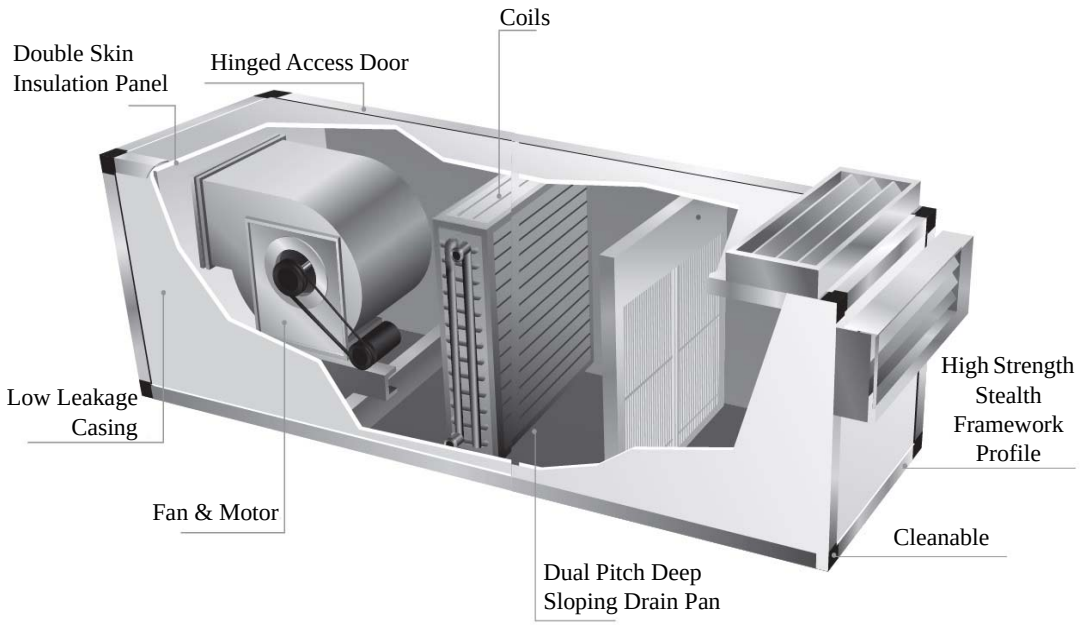
Patented Delta-Flo slit fin heat transfer technology gives maximum cooling and dehumidification . Trane engineered fan systems provide maximum airflow while minimizing vibration, acoustic levels and power consumption.

Suitable for High Performance Application

Addresses the needs of electronics, healthcare, life-sciences and pharmaceuticals.

Sturdy Unit Construction

The $CLCP_{Euro}$ XP and $CLCP_{Euro}$ 50mm,flexibility is contributed by the structural integrity pentapost and panel construction. The casing strength is designed to meet European Standard EN 1886; 2006, Class D1.



Optimized Coils

Flexibility characterizes the CLCP broad coil offering. The variety of types, sizes, arrangements and materials enables you to select a coil optimized for the application pressure drop and capacity requirements. Options include;

- 2 to 12 rows, ½ inch OD chilled water coils and two separate cooling coil in series to meet high capacity requirement.
- 1 and 2 rows, ½ inch OD hot water coils.
- 4 and 6 rows, ½ inch OD refrigerant coils. (multiple circuiting options)
- 1 row ½ inch OD, distributing type steam coils.
- Infinitely variable fin spacing (IVS).
- Stainless steel coil casing (option). Copper fins.
- Coated aluminum fin for corrosion resistance.
- Header drain and vent connections.

Performance Assurance and Commitment to Quality

Trane combines comprehensive performance certifications with thorough laboratory testing and manufacturing methods. Together these elements help to ensure that each CLCP operates predictably and reliably throughout the life of the unit. All fans are tested as per ANSI/AMCA 210, ANSI/ASHRAE Standard 51 - Laboratory Method of Testing Fans Rating and AMCA 300 “Reverberant Room Method for Sound Testing of Fans.” All coil capacities, pressure drops and selection procedures are rated in accordance to ARI Standard 410. All coils are leak and proof tested to minimum 375 psig.

CLCPs are manufactured in a facility that is certified to MS ISO9001.

EUROVENT TEST RESULTS				
APPLICATION	Eurovent Classification	CLCP Euro 25mm	CLCPEuro 50mm	CLCPEuro XP 50mm
Casing Thermal Transmittance	TT Class	T3	T2	T2
Casing Thermal Bridging	TBF	TB3	TB3	TB1
Casing Strength	CS Class	D1(M)	D1(M)	D1(M)
Casing Leakage @ -400 Pa	CAL Class	L2 (M)	L1 (M)	L1 (M)
Casing Leakage @ +700 Pa	CAL Class	L3 (M)	>L3 (M)	L1 (M)
Filter Frame Bypass	FBL Class	F9 (M)	F9 (M)	F9 (M)
		Highest In Class		

TOPSS Selection

TOPSS (Trane Official Product Selection System) provides for a single interface for calculating and selecting over 40 different Trane products worldwide, including CLCP Air Handler, heating, cooling and refrigerant coils performance.

You enter a set of conditions and desired performances criteria into TOPSS and the program will determine product configurations that meet or exceed those required parameter.

After performing the calculations, TOPSS provides an interface for reviewing, printing, graphing, selecting, exporting schedules to Microsoft Excel™, Word™, Adobe Reader™ documents or even e-mailing your equipment selections to your Trane sales engineer.

CLCP$_{Euro}$ Quick Select

Chart

CLCP Model Size	Module Size	Airflow @1.0m/s Face Velocity	Airflow @2.5m/s Face Velocity	Airflow @3.0m/s Face Velocity	Total Cooling Capacity	External Static Pressure	Unit Dimension [Fan+Coil+Filter+Mixing Box]			Unit Weight	Water Flow rate	Motor Installed Power
							Width	Height	Length			
		m3/s	m3/s	m3/s	kW	Pa	mm	mm	mm	kg	L/s	kW
003	0404	0.24	0.6	0.72	5.95	500	748	868	1988	252	0.26	1.1
004	0604	0.4	1	1.2	10.71	500	1058	868	1988	316	0.46	2.2
005	0704	0.48	1.2	1.44	20.28	500	1213	868	1988	354	0.88	3
006	0804	0.56	1.4	1.68	23.77	500	1368	868	1988	405	1.03	3
008	1004	0.4	1	1.2	22.55	500	1678	868	1988	463	0.98	1.5
010	0806	0.904	2.26	2.712	38.63	500	1368	1178	1988	537	1.67	7.5
012	1006	1.168	2.92	3.504	57.57	500	1678	1178	2143	630	2.49	5.5
013	1106	1.32	3.3	3.96	69.43	500	1833	1178	2298	705	3.01	11
014	1206	1.44	3.6	4.32	75.77	500	1988	1178	2143	718	3.28	7.5
016	1008	1.6	4	4.8	79.29	500	1678	1488	2143	760	3.44	7.5
020	1208	1.972	4.93	5.916	104.37	500	1988	1488	2298	933	4.52	11
022	1209	2.12	5.3	6.36	113.61	500	1988	1643	2298	974	4.92	11
025	1210	2.452	6.13	7.356	130.14	500	1988	1798	2608	1146	5.64	11
028	1310	2.68	6.7	8.04	145.34	500	2143	1798	2736	1240	6.3	11
030	1212	2.96	7.4	8.88	156.38	500	1988	2108	2763	1356	6.78	15
032	1312	3.24	8.1	9.72	174.8	500	2143	2108	2891	1407	7.58	15
035	1412	3.48	8.7	10.44	191.85	500	2298	2108	2891	1462	8.31	15
040	1612	4.04	10.1	12.12	228.81	500	2608	2108	3046	1710	9.92	18.5
045	1812	4.6	11.5	13.8	266	500	2918	2108	3046	1910	11.53	22
048	1912	4.88	12.2	14.64	284.66	500	3073	2108	3046	1961	12.34	22
050	2012	5.16	12.9	15.48	301.72	500	3228	2108	3201	2134	13.08	22
055	2013	5.56	13.9	16.68	326.61	500	3228	2263	3201	2293	14.16	30
060	2014	6.04	15.1	18.12	354.94	500	3228	2418	3356	2456	15.38	30
062	2114	6.28	15.7	18.84	324.83	500	3383	2418	3356	2511	14.08	30
065	2214	6.68	16.7	20.04	349.27	500	3538	2418	3511	2716	15.14	30
070	2412	7.324	18.31	21.972	392.23	500	3848	2418	3666	2926	17	30
080	2614	7.964	19.91	23.892	434.76	500	4158	2418	3666	3188	18.84	37
085	2814	8.6	21.5	25.8	477.29	500	4468	2418	3821	3388	20.69	37
090	3014	9.244	23.11	27.732	520.22	500	4778	2418	3821	3572	22.55	45
095	3214	9.9	24.75	29.7	563.69	500	5088	2418	3821	3692	24.43	45
100	3216	11.08	27.7	33.24	636.14	500	5088	2733	4286	4346	27.57	45
110	3217	11.6	29	34.8	427.44	500	5088	2888	4286	4354	18.53	45
120	3218	12.4	31	37.2	453.66	500	5088	3043	4286	4590	19.66	55

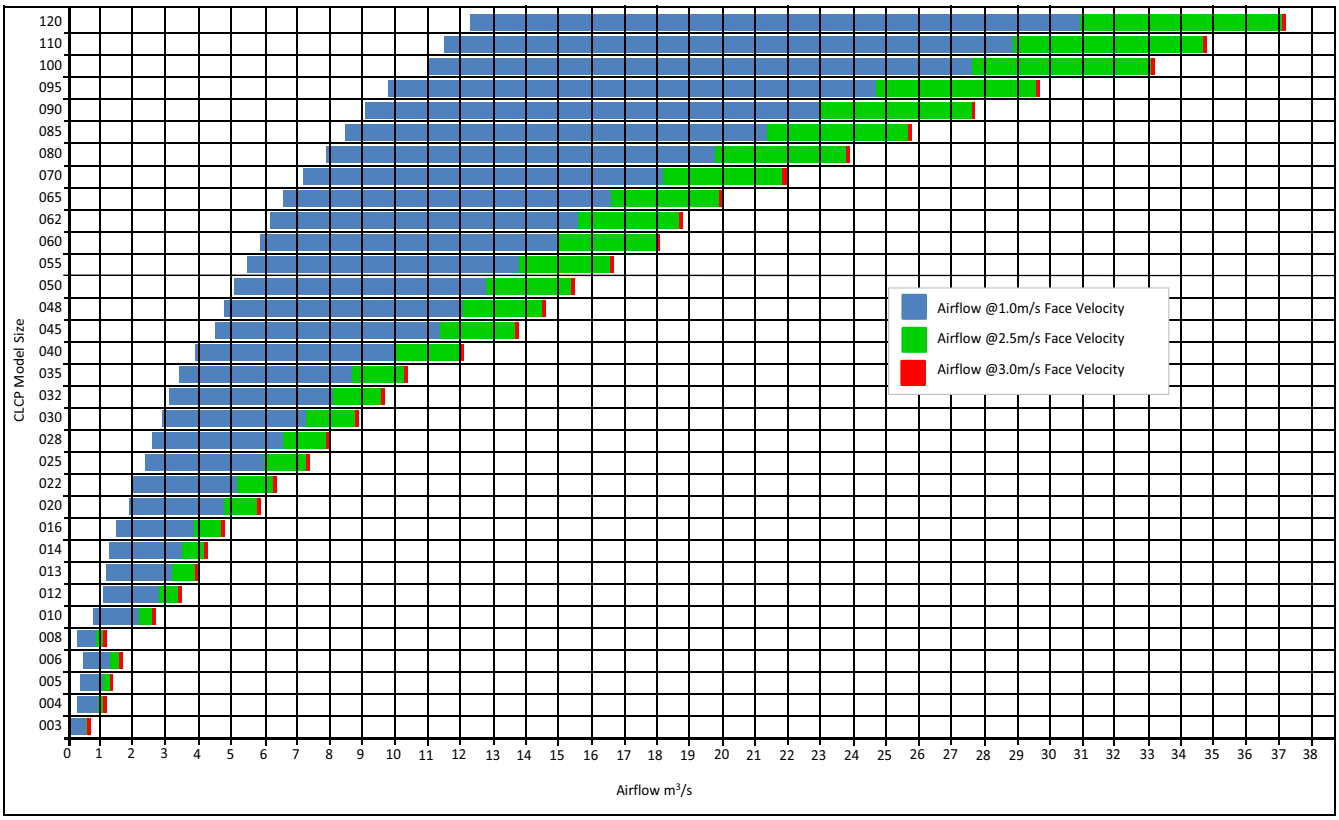
Notes:

1. Nominal Cooling Capacities are based on a EDB 26.7C / EWB 19.4C and a EWT 6.7C / LWT 12.2C
2. Unit dimensions and weight includes a BC fan (arrangement 1), 4R 144FPF coil [models 003 - 100] section, bag & prefilter plus mixing box sections for a 50mm CLCPC platform.
3. 25mm CLCP models are limited to CLCP 003 to CLCP 050
4. The data above, with the exception of weight and dimension are applicable to the CLCP Euro, CLCP, CLCP XP-TB1 and the CLCP XP-TB1
5. For Module defination, the 1st 2 digits signify the units width, and the 2nd 2 digits signify the units height. This does not include frame, base or potrusion dimension.

QUICK DIMENSIONS

Appendix General Submittal Packages.

Graph


CLCP Model Size
120
110
100
095
090
085
080
070
065
062
060
055
050
048
045
040
035
032
030
028
025
022
020
016
014
013
012
010
008
006
005
004
003
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38
Airflow m³/s
Airflow @1.0m/s Face Velocity
Airflow @2.5m/s Face Velocity
Airflow @3.0m/s Face Velocity

General Data

Casing

Casing Type

- Extruded frame of engineering grade aluminum gives the CLCP excellent rigidity.
- Casing Strength is certified to meet European standard EN 1886:1998, D1
- Specialized casing construction available for L1, L2,L3 type leakage classification ratings.
- Panels are of double wall construction injected with foam insulation to provide a rigid sturdy and easily cleaned enclosure. All 50mm panels are fully thermal break. PU Foam is CFC free.
- The $CLCP_{Euro}$ XP is designed to suit the technical requirement of each application. Design is specially suitable for healthcare, electronics, life-sciences and pharmaceuticals where condensation concerns exists, IAQ requirements abound and where cleanable-flush interiors are needed.

Panel

The panels are manufactured by injection of polyurethane foam insulation between two metal skins to produce a rigid and totally enclosed panel of 25mm or 50mm nominal thickness. This double wall construction keeps the insulation out of the air stream and contributes towards improved indoor air quality. The panels are also easily cleanable. $CLCP_{Euro}$ XP panels shall be internally reverted to allow L1 casing leakage certification.

The insulating material is a two component closed cell, rigid polyurethane foam. Insulating Materials Specification: Thermal conductivity 'K' Factor = 0.02 W/mK. Polyurethane foam used is CFC Free.

Panel Thickness:

Overall average panel nominal thickness shall be either 25mm or 50mm. ($CLCP_{Euro}$ 25/50, $CLCP_{Euro}$ XP).

The exterior and inner wall's panel coating comes with a variety of choice

- Standard offering: galvanized pre painted exterior wall and galvanized steel sheet on inner wall.
- Option: galvanized pre painted steel sheet on exterior and inner - wall

	Key Product **$CLCP_{Euro}$25mm**	**Differentiation** **$CLCP_{Euro}$50mm**	**Chart** **$CLCP_{Euro}$ XP**
Casing Thickness	25 25mm	50 50mm	XP 50mm
Panel Installation	wedge lock	wedge lock	Wedge lock + internal revert
Range	003 - 050	030 - 120	003 - 120
Frame Construction	Single Extruded Aluminum Pentapost Frame Internally insulated PE @ Fan Selection		Thermal Break Aluminum Frame Not Required
Breakpoint	Frame to Frame Aluminum Breakpoint Connection		TB1 Aluminum Frames with Integrated Thermal breaks
Eurovent Certification	Yes	Yes	Yes

The variations allow for product positioning into the right application.

For example: IAQ, Acoustic, Energy, Thermally sensitive job, would be best suited with the $CLCP_{Euro}$ XP.

Fan

Types Of Fans

CLCP Air Handling units are designed to provide accurate performance in order to meet the sophisticated building air conditioning requirement.

CLCP Air Handling units are supplied with double inlet, double supplied with double inlet, double width (DIDW) centrifugal blowers.

- Forward curved blade (FC)
- Backward curved blade (BC)
- Airfoil blade (AF)
- Direct Drive plenum fan (single inlet)
- Fan casing are constructed of galvanized steel with a series of punched holes or nutserts allowing the fixing of accessories such as frames or support structure thus providing a variety of discharge positions
- The impeller (blade) is galvanized steel finish for FC and painted steel for BC and securely fixed to the solid straight shaft.
- All fan impellers are statically and dynamically balanced by the ISO 1940 and AMCA 204/3-G2.5 quality.
- Fan shaft are carbon steel (C45) grade and machined to tolerances ISO 286-2 Grade G6 standard.

Optional

- Fan walls for access, redundancy, energy efficiency applications
- Standby fans
  - Built in airflow station for airflow monitoring

Vibration Isolator

Two types of isolator are:

- 1” Deflection spring
- 2” Deflection spring

The isolators selected shall have a minimum 80% isolation efficiency.

Standby Systems

Standby Motor

Direct Drive Fan

Starter

Stacked Fan Section

Humudity Control - CDQ Units

Coils

Coils

General

- The cooling coil shall be mounted over the dual pitched slopping drain pan to ensure water condensate flowing.
- Coil performances are designed in accordance to ARI Standard 410.
- All coils shall be counter flow design.
- The Delta Flo coils design that shall have the following criteria as above

Description / Item	Coils Range of Standard Rating Conditions					
	Cooling Coils			Heating Coils		
	Volatile Refrigerant (DX)	Chilled/Cold Water (CHW)	Cold Ethylene Glycol Solution	Steam	Hot Water (HW)	Hot Ethylene Glycol Solution
Face Velocity; FPM (m/s)	200 ~ 800 (1.0 ~ 4.0)	200 ~ 800 (1.0 ~ 4.0)	200 ~ 800 (1.0 ~ 4.0)	200 ~ 1,500 (1.0 ~ 8.0)	200 ~ 1,500 (1.0 ~ 8.0)	200 ~ 1,500 (1.0 ~ 8.0)
EDB; ^{0}F (^{0}C)	65 ~ 100 (18 ~ 38)	65 ~ 100 (18 ~ 38)	65 ~ 100 (18 ~ 38)	-20 ~ 100 (-29 ~ 38)	0.0 ~ 100 (-18 ~ 38)	-20 ~ 100 (-29 ~ 38)
EWB; ^{0}F (^{0}C)	60 ~ 85 (16 ~ 29)	60 ~ 85 (16 ~ 29)	60 ~ 85 (16 ~ 29)	-	-	-
EWT; ^{0}F (^{0}C)	-	35 ~ 65 (1.7 ~ 18)	0.0 ~ 90 (-18 ~ 32)	-	120 ~ 250 (49 ~ 121)	0.0 ~ 200 (-18 ~ 93)
Water Velocity (Inside Tube); Ft/s (m/s)	-	1.0 ~ 8.0 (0.3 ~ 2.4)	1.0 ~ 6.0 (0.3 ~ 1.8)	-	0.5 ~ 8.0 (0.1 ~ 2.4)	0.5 ~ 6.0 (0.1 ~ 1.8)
Saturated Suction Temperature; ^{0}F (^{0}C)	34 ~ 55 (1.1 ~ 12.8)	-	-	-	-	-
Minimum Superheat; ^{0}F (^{0}C)	6.0 (-14.4)	-	-	-	-	-

* Coils operating range condition and performance shall be rated in accordance with AHRI 410 standard requirement.

CLCP Coil Types Availability

Chilled Cooling & Hot Water, Refrigerant and Steam Coil

Coil Type	Description	Coil Rows	End Header's Connection	Header's Material Options	Fin Matetrial Options / Fin Per Foot Number	Tube Size & Material	Max. Standard Operation Limits (Tube Side)	
							Working Pressure	Temperature
							Psig (kPA)	⁰ F (⁰ C)
WL	General Purpose Chilled & Hot Water Coil Single-Row Serpentine (Full Circuiting)	2, 3, 4, 5, 6, 8, 10, 12	Same Side	Steel_Threaded End (BSPT) Copper, Plain End Copper c/w Brass Adapter_Threaded End	**Aluminium** 120 - 168_Heating & **Copper** 110 - 168_Heating &	1/2 " OD Copper	250 PSIG (1724 kPa)	220⁰ F (104⁰ C)
WLQ	General Purpose Hot Water Coil Quarter-Row Serpentine (Quarter Circuiting)	1	Same Side	Copper, Plain End Copper c/w Brass Adapter_Threaded End	**Aluminium** 120 - 168_Heating **Copper** 110 - 168_Heating	1/2 " OD Copper		
WLH	General Purpose Hot Water Coil Half-Row Serpentine (Half Circuiting)	1	Same Side	Copper, Plain End Copper c/w Brass Adapter_Threaded End	**Aluminium** 120 - 168_Heating **Copper** 110 - 168_Heating	1/2 " OD Copper		
WLH	General Purpose Chilled & Hot Water Coil Half-Row Serpentine (Half Circuiting) (Available on CLCP 003 thru 028 Only)	2, 3, 4	Same Side	Steel_Threaded End (BSPT) Copper, Plain End Copper c/w Brass Adapter_Threaded End	**Aluminium** 120 - 168_Heating & **Copper** 110 - 168_Heating &	1/2 " OD Copper		
DL	Drainable Chilled Water Coil Single-Row Serpentine (Full Circuiting) (Available on CLCP 030 thru 120 Only)	2, 4, 6, 8	Same Side	Steel_Threaded End (BSPT) Copper, Plain End Copper c/w Brass Adapter_Threaded End	**Aluminium** 120 - 168_Cooling **Copper** 110 - 168_Cooling	1/2 " OD Copper		
LL	Drainable Chilled Water Coil Double-Row Serpentine (Double Full Circuiting)	4, 6, 8, 10, 12	Same Side	Steel_Threaded End (BSPT) Copper, Plain End Copper c/w Brass Adapter_Threaded End	**Aluminium** 120 - 168_Cooling **Copper** 110 - 168_Cooling	1/2 " OD Copper		
FD	Refrigerant DX Cooling Coil Only **R22, R407C, R410A**	4, 6	Same Side	Copper, Plain End	**Aluminium** 120 - 168_Cooling **Copper** 110 - 168_Cooling	1/2 " OD Copper		
A or AA	Steam Coil - "A" Type - FULL Row Feed Steam Coil - "AA" Type - HALF Row Feed	1	**Opposite Side**	Steel_Threaded End (BSPT)	**Aluminium** 120 - 168_Heating	1/2 " OD Copper		

1. All coil length are available in 1 inch increments.
2. All fin spacing are available in 1 fin per foot increments
3. Turbulators are available for type WL and LL coils. This option is useful when water velocities are low (less than 4 ft/sec) to obtain maximum tube side heat transfer. The use of turbulators is equivalent to doubling the water velocity though the tubes.
4. All water coils can be used in cooling and heating applications
5. Circuiting options for type FD coils are: Standard (Single Distributor) and Intertwined circuiting

CLCP Coil Dimensional Data Sheet

Chilled Cooling & Hot Water Coil

Model Unit Size	Coil Face Area		Actual Fin Height		Finned Length		Coil Section Arrangement Types *	HW	CHW	CHW / HW	CHW / HW	CHW / HW	CHW
	Ft^2	M^2	in	mm	in	mm		WLH: 1 R WLQ: 1 R	WLH: 2,3,4 R	WL / DL: 2 R	3WL: 3 R 5WL: 5 R	WL: 4,6,8,10,12 R DL: 4,6,8,10,12 R	LL: 4,6,8,10,12 R
003 (0404)	2.83	0.26	23.75	603.25	17.2	436.00	1	1 5/8" OD, Cu	1.5" BSPT (DN40), (Cu. 1 5/8" OD)	1.5" BSPT (DN40), (Cu. 1 5/8" OD)	1.5" BSPT (DN40), (Cu. 1 5/8" OD)	1.5" BSPT (DN40), (Cu. 1 5/8" OD)	2.5" BSPT(DN65), (Cu. 2 5/8" OD)
03A (0504)	3.84	0.36	23.75	603.25	23.3	591.00	1						
004 (0604)	4.84	0.45	23.75	603.25	29.4	746.00	1						
005 (0704)	5.85	0.54	23.75	603.25	35.5	901.00	1						
006 (0804)	6.86	0.64	23.75	603.25	41.6	1056.00	1						
007 (0904)	7.86	0.73	23.75	603.25	47.7	1211.00	1						
008 (1004)	8.87	0.82	23.75	603.25	53.8	1366.00	1						
009 (1104)	9.88	0.92	23.75	603.25	59.9	1521.00	1						
010 (0806)	10.10	0.94	35.00	889.00	41.6	1056.00	1		2" BSPT(DN50), (Cu. 2 1/8" OD)	2" BSPT(DN50), (Cu. 2 1/8" OD)	2" BSPT(DN50), (Cu. 2 1/8" OD)	2" BSPT(DN50), (Cu. 2 1/8" OD)	
011 (0906)	11.59	1.08	35.00	889.00	47.7	1211.00	1						
012 (1006)	13.07	1.21	35.00	889.00	53.8	1366.00	1						
013 (1106)	14.55	1.35	35.00	889.00	59.9	1521.00	1						
014 (1206)	16.04	1.49	35.00	889.00	66.0	1676.00	1						
015 (1107)	17.13	1.59	41.25	1047.75	59.8	1519.00	1				2.5" BSPT(DN65), (Cu. 2 5/8" OD)	2.5" BSPT(DN65), (Cu. 2 5/8" OD)	
016 (1008)	17.71	1.65	47.50	1206.50	53.7	1364.00	1						
018 (1108)	19.73	1.83	47.50	1206.50	59.8	1519.00	1						
020 (1208)	21.74	2.02	47.50	1206.50	65.9	1674.00	1						
022 (1209)	24.60	2.29	53.75	1365.25	65.9	1674.00	1						
025 (1210)	27.46	2.55	60.00	1524.00	65.9	1674.00	1						
028 (1310)	30.00	2.79	60.00	1524.00	72.0	1829.00	1						
030 (1212)	32.04	2.98	35.00 35.00	889.00 889.00	65.9	1674.00	2			2" BSPT(DN50), (Cu. 2 1/8" OD)	2" BSPT(DN50), (Cu. 2 1/8" OD)	2" BSPT(DN50), (Cu. 2 1/8" OD)	
032 (1312)	35.00	3.25	35.00 35.00	889.00 889.00	72.0	1829.00	2						
035 (1412)	37.43	3.48	35.00 35.00	889.00 889.00	77.0	1955.80	2						
038 (1512)	40.35	3.75	35.00 35.00	889.00 889.00	83.0	2108.20	2						
040 (1612)	43.26	4.02	35.00 35.00	889.00 889.00	89.0	2260.60	2						
042 (1712)	46.18	4.29	35.00 35.00	889.00 889.00	95.0	2413.00	2						
045 (1812)	49.10	4.56	35.00 35.00	889.00 889.00	101.0	2565.40	2						
048 (1912)	52.01	4.83	35.00 35.00	889.00 889.00	107.0	2717.80	2						
050 (2012)	54.93	5.10	35.00 35.00	889.00 889.00	113.0	2870.20	2						
055 (2013)	58.85	5.47	37.50 37.50	952.50 952.50	113.0	2870.20	3				2.5" BSPT(DN65), (Cu. 2 5/8" OD)	2.5" BSPT(DN65), (Cu. 2 5/8" OD)	
060 (2014)	63.76	5.92	40.00 41.25	1016.00 1047.75	113.0	2870.20	3						
062 (2114)	67.14	6.24	40.00 41.25	1016.00 1047.75	119.0	3022.60	3						
065 (2214)	70.53	6.55	40.00 41.25	1016.00 1047.75	125.0	3175.00	3						
070 (2414)	77.30	7.18	40.00 41.25	1016.00 1047.75	137.0	3479.80	3						
080 (2614)	84.07	7.81	40.00 41.25	1016.00 1047.75	149.0	3784.60	3						
085 (2814)	90.84	8.44	40.00 41.25	1016.00 1047.75	161.0	4089.40	3						
090 (3014)	97.61	9.07	40.00 41.25	1016.00 1047.75	173.0	4394.20	3						
095 (3214)	104.38	9.70	40.00 41.25	1016.00 1047.75	185.0	4699.00	3						
100 (3216)	118.84	11.04	46.25 46.25	1174.75 1174.75	185.0	4699.00	3						
110 (3217)	125.26	11.64	46.25 51.25	1174.75 1301.75	185.0	4699.00	3						
120 (3218)	131.68	12.23	51.25 51.25	1301.75 1301.75	185.0	4699.00	3						

* Coil section arrangement types diagram can refer to coil connection dimension pages for more detail illustration.

CLCP Coil Dimensional

Steam Coil (Type “A” & “AA”)

MODEL Unit Size	Coil Face Area		Actual Fin Height		Coil Face Length	
	ft^2	m^2	in	mm	in	mm
003 (0404)	2.08	0.19	20.00	508	15	381
03A (0504)	2.92	0.27	20.00	508	21	533
004 (0604)	3.75	0.35	20.00	508	27	686
005 (0704)	4.58	0.43	20.00	508	33	838
006 (0804)	5.42	0.50	20.00	508	39	991
007 (0904)	6.25	0.58	20.00	508	45	1143
008 (1004)	7.08	0.66	20.00	508	51	1295
009 (1104)	7.92	0.74	20.00	508	57	1448
010 (0806)	8.80	0.82	32.50	826	39	991
011 (0906)	10.16	0.94	32.50	826	45	1143
012 (1006)	11.51	1.07	32.50	826	51	1295
013 (1106)	12.86	1.20	32.50	826	57	1448
014 (1206)	14.22	1.32	32.50	826	63	1600
015 (1107)	12.86	1.20	32.50	826	57	1448
016 (1008)	14.17	1.32	20.00 20.00	508 508	51	1295
018 (1108)	15.83	1.47	20.00 20.00	508 508	57	1448
020 (1208)	17.50	1.63	20.00 20.00	508 508	63	1600
022 (1209)	17.50	1.63	20.00 20.00	508 508	63	1600
025 (1210)	22.97	2.13	20.00 20.00	508 508	63	1600
028 (1310)	25.16	2.34	20.00 20.00	508 508	69	1753
030 (1212)	28.44	2.64	32.50 32.50	826 826	63	1600
032 (1312)	31.15	2.89	32.50 32.50	826 826	69	1753
035 (1412)	33.85	3.15	32.50 32.50	826 826	75	1905
038 (1512)	33.85	3.15	32.50 32.50	826 826	81	2057
040 (1612)	39.27	3.65	32.50 32.50	826 826	87	2210
042 (1712)	39.27	3.65	32.50 32.50	826 826	93	2362
045 (1812)	44.69	4.15	32.50 32.50	826 826	99	2515
048 (1912)	47.40	4.40	32.50 32.50	826 826	105	2667
050 (2012)	50.10	4.65	32.50 32.50	826 826	111	2819
055 (2013)	50.10	4.65	32.50 32.50	826 826	111	2819
060 (2014)	57.81	5.37	20.00 20.00 35.00	508 508 889	111	2819
062 (2114)	60.94	5.66	20.00 20.00 35.00	508 508 889	117	2972
065 (2214)	64.06	5.95	20.00 20.00 35.00	508 508 889	123	3124
070 (2414)	70.31	6.53	20.00 20.00 35.00	508 508 889	135	3429
080 (2614)	76.56	7.11	20.00 20.00 35.00	508 508 889	147	3734
085 (2814)	82.81	7.69	20.00 20.00 35.00	508 508 889	159	4039
090 (3014)	89.06	8.27	20.00 20.00 35.00	508 508 889	171	4343
095 (3214)	95.31	8.85	20.00 20.00 35.00	508 508 889	183	4648
100 (3216)	95.31	8.85	20.00 20.00 35.00	508 508 889	183	4648
110 (3217)	95.31	8.85	20.00 20.00 35.00	508 508 889	183	4648
120 (3218)	95.31	8.85	20.00 20.00 35.00	508 508 889	183	4648

* All Unit Sizes, STEAM INLET Connection Pipe Size : 2-1/2" BSPT
* All Unit Sizes, CONDENSATE OUTLET Connection Pipe Size : 1-1/2" BSPT

CLCP Coil Dimensional Data Sheet

Refrigerant DX Coil: STANDARD Circuiting Type

MODEL Unit Size	STANDARD Circuiting Type							Number Unit of Distributor		Connection Piping Size Ø		
	Coil Face Area		Actual Fin Height		Coil Face Length		Number	Manifold		Liquid OD		Suction OD
	ft^2	m^2	in	mm	in	mm	of Rows	No	Yes	1/4" Dist.Tube	3/16" Dist.Tube	
003 (0404)	2.83	0.26	23.75	603	17.2	436	4 / 6	1	-	1-1/8"	7/8"	1-5/8"
03A (0504)	3.84	0.36	23.75	603	23.3	591	4 / 6	1	-			
004 (0604)	4.84	0.45	23.75	603	29.4	746	4 / 6	1	-			
005 (0704)	5.85	0.54	23.75	603	35.5	901	4 / 6	1	-			
006 (0804)	6.86	0.64	23.75	603	41.6	1056	4 / 6	1	-			
007 (0904)	7.86	0.73	23.75	603	47.7	1211	4 / 6	1	-			
008 (1004)	8.87	0.82	23.75	603	53.8	1366	4 / 6	1	-			
009 (1104)	9.88	0.92	23.75	603	59.9	1521	4 / 6	1	-			
010 (0806)	10.10	0.94	35.00	889	41.6	1056	4 / 6	1	-	1-3/8"	1-1/8"	
011 (0906)	11.59	1.08	35.00	889	47.7	1211	4 / 6	1	-			
012 (1006)	13.07	1.21	35.00	889	53.8	1366	4 / 6	1	-			
013 (1106)	14.55	1.35	35.00	889	59.9	1521	4 / 6	1	-			
014 (1206)	16.04	1.49	35.00	889	66.0	1676	4 / 6	1	-			
015 (1107)	17.13	1.59	41.25	1048	59.8	1519	4 / 6	1	-			
016 (1008)	17.71	1.65	47.50	1207	53.7	1364	-	-	-	-	-	-
018 (1108)	19.73	1.83	47.50	1207	59.8	1519	-	-	-	-	-	-
020 (1208)	21.74	2.02	47.50	1207	65.9	1674	-	-	-	-	-	-
022 (1209)	24.60	2.29	53.75	1365	65.9	1674	-	-	-	-	-	-
025 (1210)	27.46	2.55	60.00	1524	65.9	1674	-	-	-	-	-	-
028 (1310)	30.00	2.79	60.00	1524	72.0	1829	-	-	-	-	-	-
030 (1212)	32.04	2.98	70.00	1778	65.9	1674	4 / 6	1 / 1	1	1-3/8"	1-1/8"	1-5/8"
032 (1312)	35.00	3.25	70.00	1778	72.0	1829	4 / 6	1 / 1	1			
035 (1412)	37.43	3.48	70.00	1778	77.0	1956	4 / 6	1 / 1	1			
038 (1512)	40.35	3.75	70.00	1778	83.0	2108	4 / 6	1 / 1	1			
040 (1612)	43.26	4.02	70.00	1778	89.0	2261	4 / 6	1 / 1	1			
042 (1712)	46.18	4.29	70.00	1778	95.0	2413	4 / 6	1 / 1	1			
045 (1812)	49.10	4.29	70.00	1778	101.0	2565.4	4 / 6	1 / 1	1			
048 (1912)	52.01	4.83	70.00	1778	107.0	2718	4 / 6	1 / 1	1			
050 (2012)	54.93	5.10	70.00	1778	113.0	2870	4 / 6	1 / 1	1			

* 1 number equal to to 1 unit of distributor and TXV on indoor evaporator DX coils circuiting number for connection with each number outdoor condensing unit circuiting.

CLCP Coil Dimensional Data Sheet

Refrigerant DX Coil: INTERWINED Circuiting Type

MODEL Unit Size	INTERTWINED Circuiting Type							Number Unit of Distributor		Connection Piping Size Ø		
	Coil Face Area		Actual Fin Height		Coil Face Length		Number	Manifold		Liquid OD		Suction OD
	ft^2	m^2	in	mm	in	mm	of Rows	No	Yes	1/4" Dist.Tube	3/16" Dist.Tube	
003 (0404)	2.83	0.26	23.75	603	17.2	436	4 / 6	1 / 1	1	1-1/8"	7/8"	1-5/8"
03A (0504)	3.84	0.36	23.75	603	23.3	591	4 / 6	1 / 1	1			
004 (0604)	4.84	0.45	23.75	603	29.4	746	4 / 6	1 / 1	1			
005 (0704)	5.85	0.54	23.75	603	35.5	901	4 / 6	1 / 1	1			
006 (0804)	6.86	0.64	23.75	603	41.6	1056	4 / 6	1 / 1	1			
007 (0904)	7.86	0.73	23.75	603	47.7	1211	4 / 6	1 / 1	1			
008 (1004)	8.87	0.82	23.75	603	53.8	1366	4 / 6	1 / 1	1			
009 (1104)	9.88	0.92	23.75	603	59.9	1521	4 / 6	1 / 1	1			
010 (0806)	10.10	0.94	35.00	889	41.6	1056	4 / 6	1 / 1	1	1-3/8"	1-1/8"	1-5/8"
011 (0906)	11.59	1.08	35.00	889	47.7	1211	4 / 6	1 / 1	1			
012 (1006)	13.07	1.21	35.00	889	53.8	1366	4 / 6	1 / 1	1			
013 (1106)	14.55	1.35	35.00	889	59.9	1521	4 / 6	1 / 1	1			
014 (1206)	16.04	1.49	35.00	889	66.0	1676	4 / 6	1 / 1	1			
015 (1107)	17.13	1.59	41.25	1048	59.8	1519	4 / 6	1 / 1	1			
016 (1008)	17.71	1.65	47.50	1207	53.7	1364	4 / 6	1 / 1 / 1 / 1	1 / 1	1-1/8"	7/8"	1-5/8"
018 (1108)	19.73	1.83	47.50	1207	59.8	1519	4 / 6	1 / 1 / 1 / 1	1 / 1			
020 (1208)	21.74	2.02	47.50	1207	65.9	1674	4 / 6	1 / 1 / 1 / 1	1 / 1			
022 (1209)	24.60	2.29	53.75	1365	65.9	1674	4 / 6	1 / 1 / 1 / 1	1 / 1	1-3/8"	1-1/8"	1-5/8"
025 (1210)	27.46	2.55	60.00	1524	65.9	1674	4 / 6	1 / 1 / 1 / 1	1 / 1			
028 (1310)	30.00	2.79	60.00	1524	72.0	1829	4 / 6	1 / 1 / 1 / 1	1 / 1			
030 (1212)	32.04	2.98	70.00	1778	65.9	1674	4 / 6	1 / 1 / 1 / 1	1 / 1			
032 (1312)	35.00	3.25	70.00	1778	72.0	1829	4 / 6	1 / 1 / 1 / 1	1 / 1			
035 (1412)	37.43	3.48	70.00	1778	77.0	1956	4 / 6	1 / 1 / 1 / 1	1 / 1			
038 (1512)	40.35	3.75	70.00	1778	83.0	2108	4 / 6	1 / 1 / 1 / 1	1 / 1			
040 (1612)	43.26	4.02	70.00	1778	89.0	2261	4 / 6	1 / 1 / 1 / 1	1 / 1			
042 (1712)	46.18	4.29	70.00	1778	95.0	2413	4 / 6	1 / 1 / 1 / 1	1 / 1			
045 (1812)	49.10	4.56	70.00	1778	101.0	2565	4 / 6	1 / 1 / 1 / 1	1 / 1			
048 (1912)	52.01	4.83	70.00	1778	107.0	2718	4 / 6	1 / 1 / 1 / 1	1 / 1			
050 (2012)	54.93	5.10	70.00	1778	113.0	2870	4 / 6	1 / 1 / 1 / 1	1 / 1			
055 (2013)	58.85	5.47	37.50	953	113.0	2870	4 / 6	1 / 1 / 1 / 1	1 / 1	1-1/8"	7/8"	1-5/8"
			37.50	953				1 / 1 / 1 / 1	1 / 1			
060 (2014)	63.76	5.92	40	1016	113.0	2870	4 / 6	1 / 1 / 1 / 1	1 / 1			
			41.25	1048				1 / 1 / 1 / 1	1 / 1			
062 (2114)	67.14	6.24	40	1016	119.0	3023	4 / 6	1 / 1 / 1 / 1	1 / 1			
			41.25	1048				1 / 1 / 1 / 1	1 / 1			
065 (2214)	70.53	6.55	40	1016	125.0	3175	4 / 6	1 / 1 / 1 / 1	1 / 1			
			41.25	1048				1 / 1 / 1 / 1	1 / 1			
070 (2414)	77.30	7.18	40	1016	137.0	3480	4 / 6	1 / 1 / 1 / 1	1 / 1			
			41.25	1048				1 / 1 / 1 / 1	1 / 1			
080 (2614)	84.07	7.81	40	1016	149.0	3785	4 / 6	1 / 1 / 1 / 1	1 / 1			
			41.25	1048				1 / 1 / 1 / 1	1 / 1			
085 (2814)	90.84	8.44	40	1016	161.0	4089	4 / 6	1 / 1 / 1 / 1	1 / 1			
			41.25	1048				1 / 1 / 1 / 1	1 / 1			
090 (3014)	97.61	9.07	40	1016	173.0	4394	4 / 6	1 / 1 / 1 / 1	1 / 1			
			41.25	1048				1 / 1 / 1 / 1	1 / 1			
095 (3214)	104.38	9.70	40	1016	185.0	4699	4 / 6	1 / 1 / 1 / 1	1 / 1			
			41.25	1048				1 / 1 / 1 / 1	1 / 1			
100 (3216)	118.84	11.04	46.25	1175	185.0	4699	4 / 6	1 / 1 / 1 / 1	1 / 1			
			46.25	1175				1 / 1 / 1 / 1	1 / 1			
110 (3217)	125.26	11.64	46.25	1175	185.0	4699	4 / 6	1 / 1 / 1 / 1	1 / 1			
			51.25	1302				1 / 1 / 1 / 1	1 / 1			
120 (3218)	131.68	12.23	51.25	1302	185.0	4699	4 / 6	1 / 1 / 1 / 1	1 / 1			
			51.25	1302				1 / 1 / 1 / 1	1 / 1			

* 1 number equal to to 1 unit of distributor and TXV on indoor evaporator DX coils circuiting number for connection with each number outdoor condensing unit circuiting.

Filters

General

CLCP air handling unit offers wide range of filters to meet are filtration requirement in various types of commercial and industrial air conditioning applications. Filter type offered are:

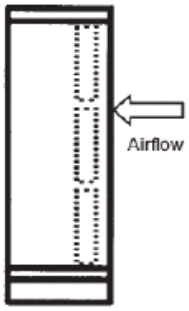
a. Washable and throwaway type flat filters.

b. Bag and cartridge type filters

c. Hepa filters

d. Carbon or gas filters, etc

Flat Filter



Flat Filter Section

a) Washable Filter

The filter media consist of selected synthetic fibers. An exclusive bonding technology provides the media withhigh numbers of fibers per square meter for a given weight. Its characteristics are relatively low resistance to airflow and high dust holding capacity. The media can be cleaned.

- In warm water (30^0 - 40^0C) with addition of a household detergent if necessary. Drying should be done on a flat surface.
- by blowing with compressed air in the opposite direction of filter airflow.

Washable Filter - Product Information		
Normal Sizes (inch)	:	12 x 24 20 x 24, 24 x 24
Filter Depth (mm)	:	50
Average Arrestance	:	80 - 85%

b) Throwaway Filter

Unique “pleat” design assures total usage of the filter media, maximum dust holding capacity and extended service life. Its greater dust holding capacity not only extends replacement intervals, but considerably lengthens the service life of any other secondary filters in the systems.

The media used is a lofted, high performance, non-woven, reinforced cotton and synthetic fabric. Filter media shall be of high density glass mirco fibers laminated to all glass woven mesh backing. The filter media shall have an average arrestance of 90 - 92%. The filter is categorized as a 30% efficiency filter.

Throwaway Filter - Product Information		
Normal Sizes (inch)	:	12 x 24 20 x 24, 24 x 24
Filter Depth (mm)	:	50
Average Arrestance	:	90 - 92%
Average Efficiency	:	25 - 30%

Flexible and Varied Filter Offering for IAQ and process filteration

High Efficiency Filter Section

a. Big Filter

The filter is an extended surface non supported pocket filter which offers high efficiency, low resistance, compactness and unusual dust-holding capacity. When placed in ventilating system, the pockets of the filtering media inflate for maximum efficiency and dust holding capacity.

Filter efficiency is determined by the size and quality of fibers per square inch in each efficiency category. The media is manufactured to rigid specifications that assure an extremely large amount of dirt-catching surface area to catch mircoscopic contaminants.

The exclusive pocket design allows every channel to fully inflate while maintaining the amount of space between pockets. Clean air can freely exit from front to back. Some manufacturer's design permit adjacent pockets to touch when inflated which significantly reduces dust holding capacity.

Each filter pocket is attached to a support frame that fits into a U-channel header. Each pocket support frame is then mechanically fastened to the adjacent frame forming a rigid construction. The positive locking arrangement forms an air tight seal and also virtually eliminates the possibility of pocket separation from the header as resistance increase.

Bag Filter - Product Information		
Normal Sizes (inch)	:	12 x 24
		20 x 24, 24 x 24
Filter Depth (mm)	:	10 in, 21 in
Average Efficiency	:	60 - 62%
	:	80 - 85%
	:	90 - 95%

b. Cartridge Filter

The filters are ideally suited to variable volume systems. Being totally rigid, performance is not affected by changes in air velocity or fan shutdown, and their configuration is not altered by accumulation of dirt. High loft glass fiber media is laminated to which provides positive support, optimizes dust holding capacity, and precludes fiber emission, as compared to flat glass media.

All double wall fiber board contour stabilizers, diagonal support provide rigidity, durability, consistent integrity and performance reliability throughout the filter's life.

The lofted media and exclusive radial pleats provide a high dust holding capacity, extending the life of the filter. The filter will operate at air volumes considerably below rates velocity and capacity. Initial resistance is reduced, performance is improved and service life is extended

Cartridge Filter - Product Information		
Normal Sizes (inch)	:	12 x 24
		20 x 24, 24 x 24
Filter Depth (mm)	:	100
Average Efficiency	:	60 - 65%
	:	80 - 85%
	:	90 - 95%

Mechanical Specifications

General

The units must be rigged and lifted in strict accordance with the installation, Operation and Maintenance manual.The units are to be installed in strict accordance with the specifications.

Unit may be shipped fully assembled or disassembled to the minimum module size in accordance with shipping or job site requirements. Units shall have break point if manufacturer found appropriate for easy handling and transportation. Break points shall have full independent frames, for rigid frame to frame connections.

Unit Construction

The casing shall have a perimeter thermal break frame with a modular system, based on standardized double wall panels. Removal of side panels must not effect the structural integrity of the unit. Casing strength shall be designed to meet European Standard EN 1886: 1998, Class D1

The framework shall be made from non-corrosive recyclable extruded aluminum channels fitted together non metal corner pieces. A Thermal break construction is mandatory ($CLCP_{Euro}$ XP)

The casing panel shall be attached to the frame through a wedge and frame, exerting pressure evenly onto the panel and seal attached to the frame, and hence a better air tight cabinet construction. The casing shall be engineered to meet Eurovent air leakage requirement, (50mm models) per table

The casing shall be able to with stand up to 8 inches of total static pressure. Closed-cell foam gasketing shall be provided where modules where modules are joined, for $CLCP_{Euro}$ 25/50mm models. TB1 Certified Thermal Break Breakpoints shall be used for $CLCP_{Euro}$ XP AHUs.

The floor panels shall have double wall construction to allow maintenance personnel access without damage to the isolation.

The whole unit shall be mounted on a galvanized sheet steel base frame for shipment and handling. The minimum height of the floor-mounting base shall be 120mm and designed to ensure air circulation and avoid entrapment of moisture below the unit. The base frame is to be used in lieu of concrete plinths or other additional bases that are used on site. However for high static pressure application additional concrete plinths or other additional bases is required at site to raise the AHU for drain pan’s U-trap.

Double-Wall Panel

The outer panel wall shall be whether resistant polyester powder painted and shall allow for easy cleaning. The inner wall shall be galvanized steel. The paint shall be ultra violet resistant, weather resistant for outdoor application, offering excellent weather resistance properties.

The panels shall be either 25mm or 50mm thick double wall type with injected polyurethane foam insulation for a rigid non-vibration construction. The panel insulation shall not absorb moisture and must be not resistant. The insulation material shall be totally enclosed in the AHU to avoid any possibility of insulation being exposed to air stream. The panel insulation shall have a heat transfer “K” value of 0.02 w/mK. Exposed Insulation system shall meet UL 94, standard for safety and flame-ability of plastic material for parts in devices and appliances. PU foam, panels shall be flush mounted, leaving no exposed gaps between panels and frame to minimize potential air leaks.

Drain Pans

Coil, moisture eliminator and humidifier shall be provided with an insulated, galvanized or stainless steel (option), dual pitch sloping drain pan to allow for proper condensate removal. The galvanized drain pan shall be painted with mastic compound (bitumen) for corrosion protection.

Access and Inspection Doors

Access doors shall be constructed with a double-wall panel that compresses evenly a durable seal onto a rigid frame. The seal around the full perimeter of the access door’s frame shall be used to prevent air leakage. The doors shall be hinged or latched.

View Window

A view window shall be made of 5mm thick transparent Plexiglas's type on inner and outer wall panel with a rubber grommet seal and fitted on double wall panel. The mounting location shall be flexible and upon customer's requirement.

Service Light

A factory-mounted, weather-resistant (enclosed and gasketed), vapor-tight, light fixture shall be provided, fixture shall be equipped with plastic switch box, single phase wiring, PL lamp comes with ballast and reflector. External light switches shall be IP55

Fan Module

The fan assembly shall be checked and dynamically balanced to ISO 1940 or equivalent. Fan shaft shall be properly sized and protectively coated. Fan wheels shall be keyed to fan shaft shall be solid and designed so that fan shaft does not pass through its first critical speed as the unit comes up to its rated rpm. Fan modules shall be provided with an access door. Access side for both side of fan shall be an option.Fc, BC, AF fans of varied diameters and bearing construction shall be available for varied application choices.

FC Fan Modules

Fan shall be double-width, double-inlet and multi-blade type as produced by the unit manufacturer. Fan shall be forward curved (FC) as required for stable operation, low noise and optimum energy efficiency. Fan shall be equipped with bearing with an L-50 life (average life) of up to 200,000 hours. The multi blade shall be made of galvanized steel and the solid shaft shall be made of carbon steel: C45, machined and polished to tolerance of standard ISO 286-2-Grade G6. Protective coat of anti rusting shall be applied to all bare surfaces of shafts at the factory. The fans shall be licensed to bear the AMCA Air and Sound Certified Ratings seal. The test standard used shall be ANSI/AMCA 210. ANSI/ASHRAE Standard 51 "Laboratory Method of Testing Fans for Rating" and AMCA 300 "Reverberant Room method for Sound Testing of fans".

BC Fan Modules

Non Overloading, Fan shall be double-width, double-inlet, manufacturer. Fan shall be backward curve (BC) as required for stable operation, high static pressure and optimum energy efficiency. Fan shall be equipped with bearing with an L-50 life (average life) of up to 200,000 hours. The multiple blades shall be made of treated steel with paint for corrosion resistant. the solid shaft shall be made of carbon steel: C45, machined and polished to tolerance of standard ISO 286-2-Grade G6. Protective coat of anti rusting shall be applied to all bare surfaces of shafts at the factory. The fans shall be licensed to bear the AMCA Air and Sound Certified Ratings seal. The test standard used shall be ANSI/AMCA 210, ANSI/ASHRAE Standard 51 "Laboratory Method of Testing Fans for Rating" and AMCA 300 "Reverberant Room Method for Sound Testing of Fans".

AF Fan Modules

The fan shall be double-width, double-inlet, multiple blade type as produced by the unit manufacturer. Fan shall be backward inclined airfoil (AF).

Fan Modulation

Variable Frequency Drive (Option) For variable air volume applications, airflow shall be modulated by a variable frequency drive controlling fan speed.

Plug Fans Modules

Direct Drive Plug Fans shall be available with factory installed VFDs. Fans shall be available in various diameters to meet desired airflow, static, efficiency and noise criteria.

Fan Isolation

Fan connection shall be from unit casing by a flexible canvas duct mounted at the fan discharge outlet.

a) One-Inch Spring Isolators (Option) Fan and motor assembly shall be internally isolated from the unit casing with 1-inch deflection spring isolators, furnished and installed by the unit manufacturer.

b) Two-inch Spring Isolators (Option) Fan and motor assembly shall be internally isolated from the unit casing. The isolated. The isolation system shall be designed to take higher isolation efficiency than 1” spring isolator.

Drive

The drive assembly shall consist of V-belt taper-lock pulley and electric motor. The V-belt type shall be SPZ. SPA, SPB or SPC grades, oil and heat resistant, anti static and avoiding electric discharges. The pulley and shaft assembly shall be using taper-lock bush with Allen set screws for easy and quick assemble and dis-assemble process. Drive shall be selected at 1.5 service factor.

Fixed Pitch

Drives shall be constant speed with fixed pitch sheaves.

Motors

Motor shall be mounted integral to an isolated fan assembly furnished by the unit manufacturer. Motor shall be mounted inside the unit casing on a sliding base to permit adjustment of drive belt tension.

Standard motor shall be horizontal foot mounting, induction motor squirrel cage, totally enclosed fan-cooled with IP55 protection with class F insulation and suitable for operation at ambient temperature of 40 degree C. IE1, IE2, IE3 efficiency classes shall be available.

Motor Options

a) 380-415 Volt/3 pH/50 Hz (Standard)

b) 200 Volt/3 pH/50 Hz

c) 200 Volt/3 pH/ 60 Hz

d) 230 Volt/3 pH/60 Hz

e) 380 Volt/3 pH/60 Hz

f) 440 Volt/3 pH/60 Hz

g) 460 Volt/3 pH/60 Hz

h) High Efficiency Motors

i) Premium Efficiency Motor

j) Customer Selected Motor Sources

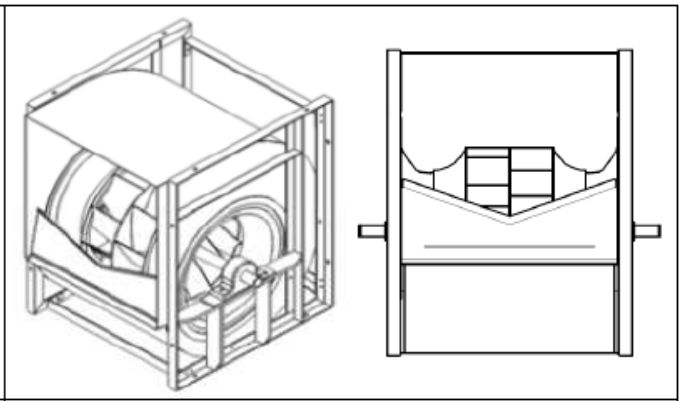
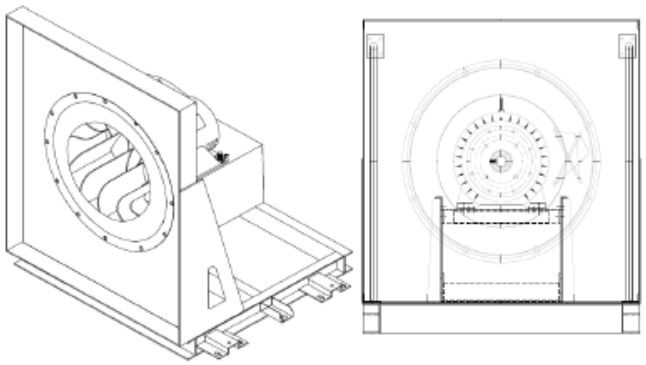
k) Explosion Proof Motor

l) Dual Speed Motor

Fan Series

The fan type shall be provided as required for stable operation and optimum energy efficiency. The fan wheel shall be statically and dynamically balanced tested at the factory as a complete fan section assembly (fan wheel, motor, drive and pulley & belts). Fan wheels shall be keyed to the shaft to prevent slipping. The fan shaft to prevent slipping. the fan shafts shall be solid carbon steel with anti-rusty protection painted. The fan section shall be provided with an access door on the drive side of the fan for services. All fans series are suitable for supply, return and exhaust application in commercial, industrials process and any HVAC systems requirement as shown in Figure 1.

Figure 1

House Fan House fan contains a scroll or housing with centrifugal fan wheel that directs the air leaving the fan in one discharge direction. Possibilities of mounting in 12 different fan orientation or arrangement. Advantage for better energy efficiency performance application system.	
Plenum Fan Plenum fan consists of a single centrifugal fan wheel only, typically with backward or airfoil blades curved, without the surrounding housing, transition and diffusers. The fan wheel pressurizes the surrounding plenum, allowing air to discharge in multiple and flexible directions. Advantage for better acoustic noise levels performance and quieter operation application system.	

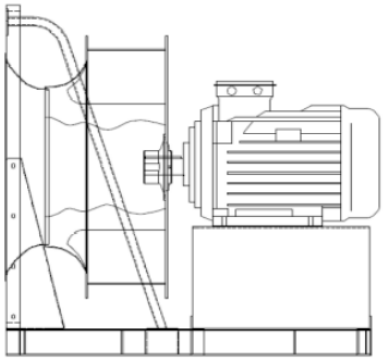
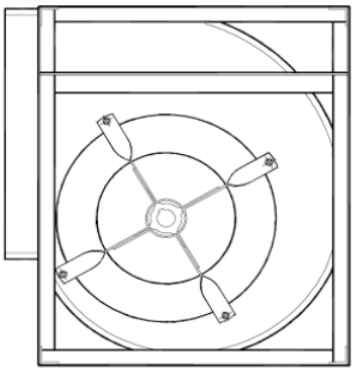
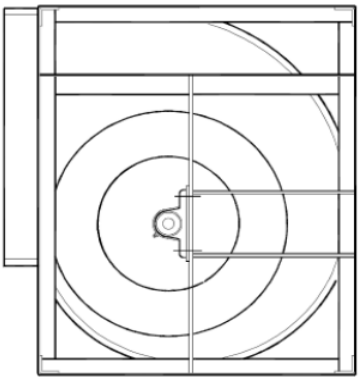
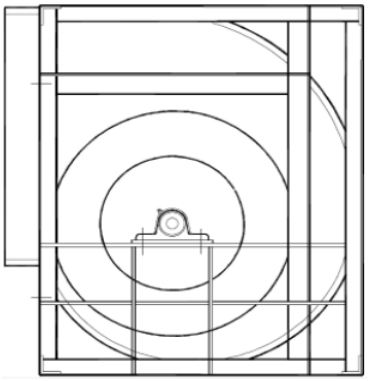
FC & BC AF House Fan Series - Double Inlet Double Width (DIDW) Centrifugal Fans

The house fan shall be a double inlet double width (DIDW), multiple blade impeller of forward curved (FC), backward curved (BC) and backward inclined airfoil (AF) centrifugals types. The fan shall be equipped with self-aligning, antifriction bearings with an L-50 life of 200,000 hours as calculated as per ANSI/AFBMA Standard 9. Fan performance shall be certified as complying with AMCA Standard 210. The house fan shall be standard belt driven and direct driven upon request only. The house fan series available in few structure frame types as shown in Figure 2.

BC & AF Plenum Fan Series - Single Inlet Single Width (SISW) Centrifugal Fans

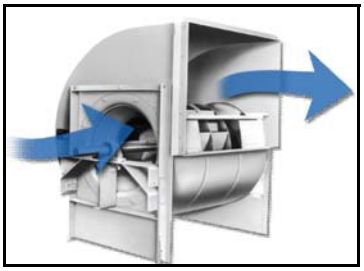
The plenum fan shall be a single inlet single width (SISW), multiple blade impeller centrifugals fan. The fan blades shall be backward curved (BC) or inclined airfoil (AF) upon request only. Plenum fan with direct driven compulsory need with VFD as motor starter. Generally designed with motor and drive contained in the discharge plenum area. Plenum fan sections containing multiple fans array system shall be controlled using a common control signal, such as the duct static pressure transducer control signal to modulate each fan speed. The plenum fan shall be standard direct driven and belt driven upon request only. The plenum fan series available in few structure frame types as shown in Figure 2.

Figure 2

Plenum Fan Type R / P / Q	House Fan Type C / R
	
There are 3 types of BNB series plenum fan frame like R for regular from light to medium duty application, P for higher static pressure ratio and Q for higher air volume ratio from medium to heavy duty application.	This type has a house frame on both side of the fans which gives better strength and rigidity. For light to medium duty application.
House Fan Type T / K	**House Fan Type X / K1 & K2 / Z**
	
This type has a welded cast iron house frame giving increased stiffines and rigidity required for medium to heavy duty application and higher operating performance.	This structure is similar to type 'T' / K but utilizes enchanced specification bearings to support higher dynamic load necessary for extra heavy duty application and increased to higher performance.

House Fan Size Option Table

Model Size	Optimized 1	Standard Fan	Oversize 1
003 (0404)	FC/BC 180	FC/BC 200	FC/BC 225
004 (0604)	FC/BC 200	FC/BC 225	FC/BC 250
005 (0704)	FC/BC 225	FC/BC 250	FC/BC 280
006 (0604)	FC/BC 225	FC/BC 250	FC/BC 280
008 (0804)	FC/BC 250	FC/BC 280	FC/BC/AF 315
010 (0806)	FC/BC 280	FC/BC/AF 315	FC/BC/AF 355
012 (1006)	FC/BC/AF 315	FC/BC/AF 355	FC/BC/AF 400
013 (1106)	FC/BC/AF 315	FC/BC/AF 355	FC/BC/AF 400
014 (1206)	FC/BC/AF 355	FC/BC/AF 400	FC/BC/AF 450
016 (1008)	FC/BC/AF 400	FC/BC/AF 450	FC/BC/AF 500
020 (1208)	FC/BC/AF 450	FC/BC/AF 500	FC/BC/AF 560
022 (1209)	FC/BC/AF 450	FC/BC/AF 500	FC/BC/AF 560
025 (1210)	FC/BC/AF 500	FC/BC/AF 560	FC/BC/AF 630
028 (1310)	FC/BC/AF 500	FC/BC/AF 560	FC/BC/AF 630
030 (1212)	FC/BC/AF 500	FC/BC/AF 560	FC/BC/AF 630
032 (1312)	FC/BC/AF 500	FC/BC/AF 560	FC/BC/AF 630
035 (1412)	FC/BC/AF 560	FC/BC/AF 630	FC/BC/AF 710
040 (1612)	FC/BC/AF 630	FC/BC/AF 710	FC/BC/AF 800
045 (1812)	FC/BC/AF 630	FC/BC/AF 710	FC/BC/AF 800
048 (1912)	FC/BC/AF 630	FC/BC/AF 710	FC/BC/AF 800
050 (2012)	FC/BC/AF 710	FC/BC/AF 800	FC/BC/AF 900
055 (2013)	FC/BC/AF 710	FC/BC/AF 800	FC/BC/AF 900
060 (2014)	FC/BC/AF 710	FC/BC/AF 800	FC/BC/AF 900
062 (2114)	FC/BC/AF 710	FC/BC/AF 800	FC/BC/AF 900
065 (2214)	FC/BC/AF 800	FC/BC/AF 900	FC/BC/AF 1000
070 (2414)	FC/BC/AF 800	FC/BC/AF 900	FC/BC/AF 1000
080 (2614)	FC/BC/AF 900	FC/BC/AF 1000	-
085 (2814)	FC/BC/AF 900	FC/BC/AF 1000	-
090 (3014)	FC/BC/AF 900	FC/BC/AF1000	-
095 (3214)	FC/BC/AF 900	FC/BC/AF 1000	-
100 (3216)	FC/BC/AF 1000	FC/BC/AF 1120	-
110 (3217)	FC/BC/AF 1120	BC/AF 1250	-
120 (3218)	FC/BC/AF 1120	BC/AF 1250	-

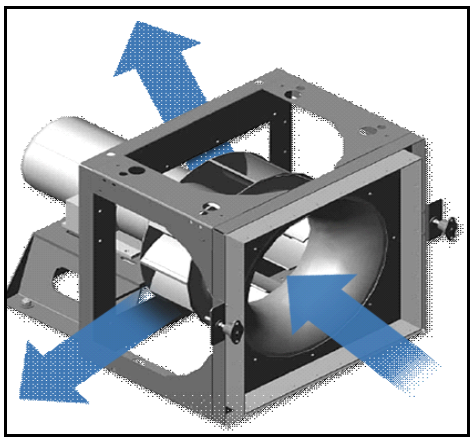


The house fan rotation and discharge arrangement are in accordance with AMCA standard 99-2406-83.

Plenum Fan Size Option Table

Model Size	Optimized 2	Optimized 1	Standard Fan	Oversize 1	Oversize 2
010 (0806)	-	BNB 315	BNB 355	BNB 400	-
012 (1006)					
013 (1106)	-	BNB 355	BNB 400	-	-
014 (1206)					
016 (1008)	-	BNB 450	BNB 500	BNB 560	-
020 (1208)		BNB 500	BNB 560	BNB 630	-
022 (1209)	-	BNB 560	BNB 630	BNB 710	-
025 (1210)	-	BNB 630	BNB 710	BNB 800	-
028 (1310)					
030 (1212)					
032 (1312)					
035 (1412)	BNB 710	BNB 800	BNB 900	BNB 1000	-
040 (1612)	-	BNB 800	BNB 900	BNB 1000	-
045 (1812)					
048 (1912)					
050 (2012)	-	BNB 800	BNB 900	BNB 1000	BNB 1120
055 (2013)					
060 (2014)	BNB 800	BNB 900	BNB 1000	BNB 1120	BNB 1250
062 (2114)					
065 (2214)	-	BNB 900	BNB 1000	BNB 1120	BNB 1250
070 (2414)					
080 (2614)					
085 (2814)					
090 (3014)					
095 (3214)					
100 (3216)	-	BNB 1000	BNB 1120	BNB 1250	-
110 (3217)					
120 (3218)					

The operating limit size of BNB series is set according with the requirement of class I and II limit as defined in AMCA standard 99-2408-69



Coil Module

Coils shall be installed such that unit casing enclose headers and return bends. Coil shall be designed to maximize the utilization of the available unit cross-section area. Coil connections shall be clearly labeled on outside of units. Coil shall be cartridge type mounted on steel channel for easy removability. Coils shall have aluminum fins and seamless copper tubes. Coated aluminum (for corrosion protection used near the sea) and copper fins shall be an option. The fins shall be sine-wave design with slits for better heat transfer efficiency and moisture carry-over limit performance. Fins shall have collars drawn, belled and firmly bonded to tubes by mechanical expansion of the tubes. Capacities, pressure drops and selection procedure shall be designed in accordance with ARI Standard 410. The copper tube shall be 0.5 inch OD. Coil casing shall be 1.5mm thick galvanized steel (standard) or stainless) steel (option) or with formed end supports and top and bottom channels. Coil casing shall be a series of drain holes at the bottom channels to insure condensate drainage.

If stacked coil are installed in the unit, intermediate drainpan shall be installed between coils to drain condensate to the main drain pans without flooding the lower coils or passing condensate through the air stream of the lower coil. The coil working pressure at site shall not exceed the leak test value on each coil type given below.

Water Coils

Supply and return headers shall be clearly labeled on the outside of the unit to ensure that direction of coil water flow is counter to direction of unit airflow. Coils shall be tested to 375 psig. Fin spacing density shall be optimized to meet heat transfer requirements through a variable fin spacing density coil and tabulators.

The headers shall be constructed of round steel pipe with BSPT external threaded. All headers shall be fitted with air venting and water draining plug.

Header connection option:

- Unthreaded copper header connection Copper header with BSPT external threaded brass adapter for quick job site connection.
- Steel header with steel flanges for quick job site connection.

Refrigerant Cooling Coils

Suction and liquid line connections plate fins and seamless copper tubes shall be clearly labeled on the outside of the unit. Coils shall be leak tested to 450 psig (17 bar) air pressure under water. After testing, insides of coils are to be dried: all connections are to be sealed and coils shall be shipped with a charge of dry nitrogen. Suction headers shall be constructed of cooper tubing. Suction connections shall penetrate unit casings to allow for external connections to refrigerant lines. Coils shall have equalizing vertical distributors sized according to the capacities of the coils. TXVs shall be optional for internal installation. R410a, R22 and R407c Refrigerant types shall be available.

Steam Heating Coils

Steam coils shall be pitched in the unit for proper drainage of steam condensate from coils. Coils shall be leak tested to 375 psig air pressure under water. Steam header and condensate header connections are to be constructed of round steel. Steam header connection shall be located opposite with condensate header.

Filter Modules

Filter sections shall have filter racks, an access door for filter removal and block-offs as required to prevent air by pass around filters. Modules shall be supplied with 2-inch or 4-inch angled or high capacity, cartridge, bag and final filters. Filter shall be sized so as not to exceed scheduled face velocities.

Pleated Filter Media Throwaway

Filters shall be 2-inch or 4-inch thick non-woven fabric, treated with adhesive and continuously laminated to a supported steel wire grid. Filters shall have a rated average dust spot efficiency of not less than 25 to 30 percent when tested in accordance with ASHREA 52-1-1992 atmospheric dust spot method. Filter access shall be accessed from either right or left hand side as standard. Back access shall be an option.

Washable or Permanent Filters

Filters shall be 2-inch synthetic fibers capable of operating up to 600 fpm face velocity. Filter media shall be layers of cleanable wire maze. Filter frame shall be constructed of galvanized steel. Filter access shall be accessed from either right or left hand side as standard. Back access shall be an option.

Hi-Capacity Filters

Filter shall be 2-inch throwaway as standard. Option for pleated media and washable. The filter shall be fixed in angular (Zig-zag) form for higher duct holding capacity. Filter frame shall be constructed of galvanized steel. Filter accessed from either right or left hand side a standard.

Cartridge Filters

Filter shall be constructed by pleating a continuous sheet of fine-fiber glass media into closely spaced pleats with safe-edged separators. This filter shall be sealed into a fiber boards frame assembled in a rigid manner to prevent air leakage. All cartridge filters shall be furnished with a 2-inch prefilter to provide extended cartridge life. Filters shall have a rated average dust spot efficiency of not less than 60 percent when tested in accordance with ASHREA 52-1-1002 atmospheric dust spot method Manufacture shall supply back access filter rack support and holding clips that capable of holding cartridge filters and prefilters.

Bag Filters

Filters shall be synthetic fiber media with spun backing to keep synthetic fibers from eroding downstream. Stitching method shall permit bag to retain pleat shape and air pocket when in operation without the use of wire basket support. Filters shall have a rated average dust spot efficiency of not less than 60 percent when tested in accordance with ASHRAE 52-1-1992 atmospheric dust spot method.

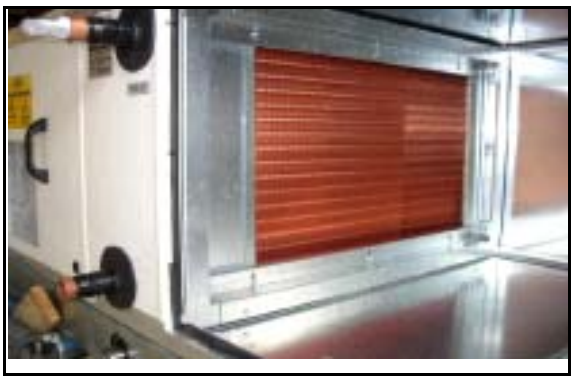
Access

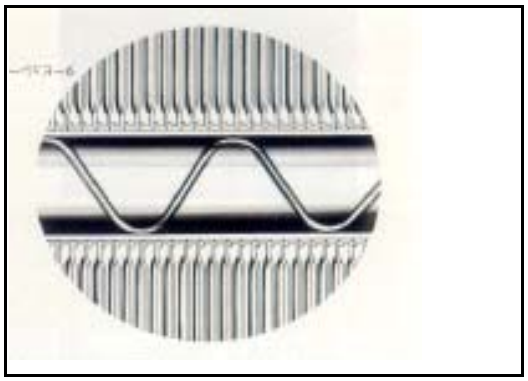
With the exception of final filters, all filter access shall be from the back to minimize casing air leakage, accessible through hinged doors. Side access filters through latched doors are available where section lengths need reduction.

Mechanical Specifications Graphic Appendix

Aluminum Airfoil Damper Options

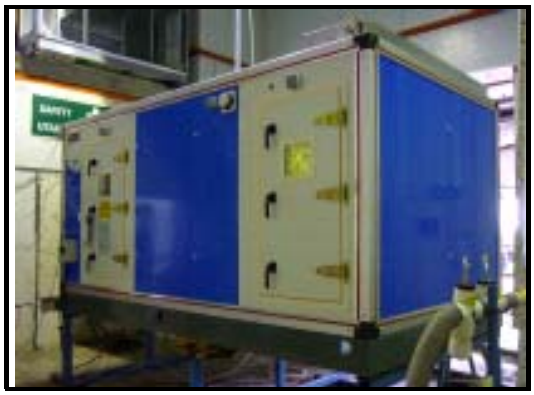
Note: *Specification related to casing performances, reference the $CLCP_{Euro}$ XP. For $CLCP_{Euro}$ XP 25mm & $CLCP_{Euro}$ XP 50mm casing performances, please cross reference the Eurovent Summary Table, Page...*





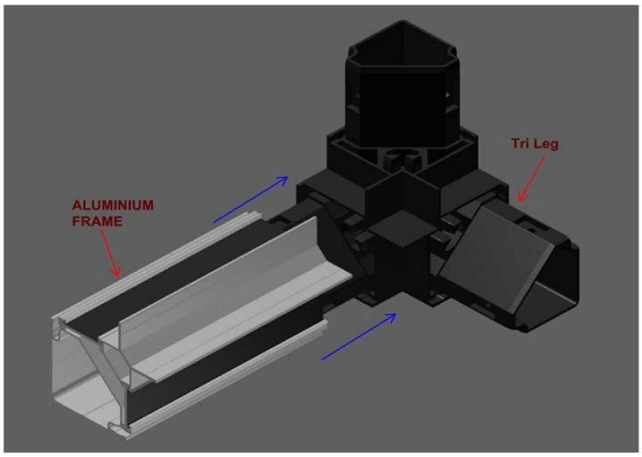
Varied Coil Types and Material

Coil Types



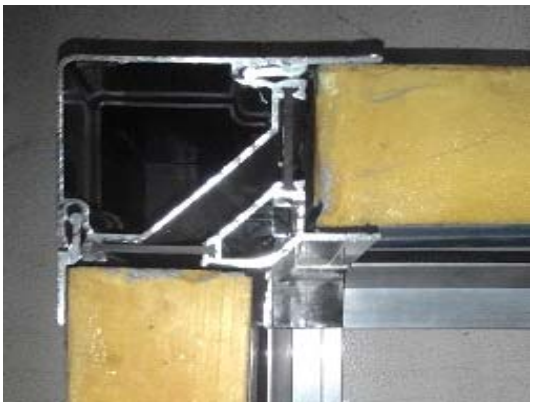
Factory Acceptance Testing Facility

UV Lighting Packages

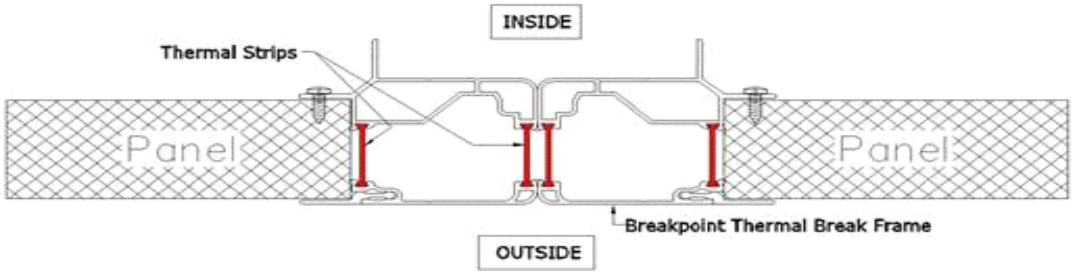


3 Legs Corner TB1 Profile Assembly

3 Legs Corner Units Casing Frame



TB1 Frame Profile Cross Section



TRANE Patented™ ® TB1 Breakpoints Joint Frame Profile Cross Section

Factory Mounted Control General Specification

Electro-Mechanical Motor Starter

Each Starter shall be properly sized, factory mounted in a full metal enclosure, and wired to the fan motor to facilitate heating, ventilation, and/or timely completion of the project.

The starter package shall include:

- hand-off-Auto (H-O-A) selector switch
- Manual reset overloads
- Starter Status, Overload Status, HOA Auto Status, Remote Start, EM Stop, External Protection Input.
- Thermistor Relay (option)
- Isolator, through-the-door- interlocking (option)
- ELCB, only available for 4-wire system (option)

Unit with Factory-Mounted Controls shall include start-stop wiring from controller start-stop relay to the starter.

Advantages:

Factory-mounted starter shall be engineered, mounted, wired, and tested by factory to reduce costs, improve reliability, and save time at unit start-up.

Variable Frequency Drive (VFD) : TR200-IP55, TR150-IP20

Each VFD shall be properly sized, factory mounted, wired to the fan motor to facilitate heating, ventilation, and/or timely completion of the project.

The VFD package shall include:

- Electronic manual speed control
- Hand-off-Auto (H-O-A) selector switch
- Inlet fuses to provide maximum protection against inlet short circuit
- Overload protection
- Phase to phase short circuit protection
- Ground fault protection.
- Thermistor wiring - only for motor c/w thermistor option
- External Enclosure (option)
- TR150 (IP20) + external enclosure : for indoor or outdoor with shelter protection only

Unit with Factory-Mounted Controls shall include binary output on/off wiring, analogue status and trip status wiring, between the VFD and controller.

Advantages:

Factory-mounted starter shall be mounted, wired, and tested by factory, to reduce costs, improve reliability, and save time at unit start-up.

Trane TR-150 & TR200 uses the latest technological advancements in power electronics and is the most compact drive in its class to ensure optimized energy use in our AHUs.

Energy Savings

Installed & maintenance Cost Savings

Trouble Free Operation

Easy To Install

Easy to Use

BMS Compatible

Energy Logging

Harmonics Control

Electric Heater & Starter

UL listed heating element

An electrical heat coil is a relatively inexpensive first cost heating option compared to central plant boiler systems. Heating elements are factory-installed, UL-listed.

Options available

1. Heater system c/w Termination Only
2. Heater system c/w Heater Starter with standalone temperature controller
3. Heater system c/w Heater Starter without standalone temperature controller

Advantages:

Both heaters and the auxiliary safeties are pre-installed, saving the installer much work and costs. The fully factory fety.

Ultraviolet (UVC) Lamp

Adopting Ultraviolet Germicidal Irradiation for the Greening of HVAC Systems.

The CLCPs come with 3 EAQ Options to choose from when considering supply air decontamination:

- Coil and Drain-pan disinfection. Low intensity UVC.
- Coil, Drain-pan and airstream disinfection. High intensity UVC.
- Trane Photo Catalytic Oxidation system for clean, odor free indoor air.

Advantages:

- **Option 1** "Cooling Coil & Drain Pan Disinfection". In the application UV-C lamps are positioned inside the AHU to keep interior components (primarily cooling coils and drain pans) clean, and thereby reduce both routine AHU system maintenance and the energy costs of operating the AHU system. LOWEST COST ALTERNATIVE to DISINFECTING COIL & DRAIN PAN.
- **Option 2** "Air & Drain Pan/Coil Disinfection". UV-C lamps are sized and positioned in the air stream within the AHU to expose and "kill" susceptible microbial particles flowing through the building's air distribution system, while disinfecting the coil and drain pan.

Factory-Mounted DDC System

Field Programmable Controller

A dedicated, programmable, direct digital-controller with the appropriate point capabilities shall be unit-mounted on each air handling unit.

An operator display shall be optional to facilitate local monitoring, troubleshooting, and changing of setpoints.

Advantages:

Factory-mounted direct digital control (DDC) system shall be engineered, mounted, wired and tested by factory, to reduce costs, improve reliability, and save time at unit start-up.

All factory-mounted controls shall be covered by the air handling manufacturer's standard warranty.

Factory-Mounted Control Options (Electronic End Devices)

All factory-mounted control devices shall be provided to accommodate integration into existing building systems.

Devices provided shall be wired to standard point locations of a unit-mounted direct digital controller, or shall be wired to terminal blocks for a remote controller for unit without unit-mounted controller.

Advantages:

Factory-mounted control devices shall be wired and tested by factory, to reduce costs, improve reliability, and save time at unit start-up.

Control devices enable equipment ready for monitoring and control by unit-mounted controller, or remote controller/ BAS:

Mixing Section Damper Actuators

Spring return actuators shall be mounted with the outdoor air damper linked as normally closed and return air damper linked as normally opened.

Air Flow Measuring Stations (Traq Damper)

Airflow monitoring stations shall provide a 2-10Vdc signal, which is corresponds to cfm.

Fan Discharge Temperature Sensors

A probe temperature sensor shall mounted in the fan discharge.

Averaging Temperature Sensors

An averaging temperature sensor shall be serpentine across the functional section. Bends of the capillaries shall be curved with capillary clips to prevent crimping and minimize wear.

Low Limit Switches

A low temperature limit switch with manual reset shall be wired to monitor low temperature condition to avoid overcooling, or icing of cooling coil. Capillaries are serpentine across the coil, bends of the capillaries shall be curved with capillary clips to prevent crimping and minimize wear.

Airflow Switches

A differential pressure switch piped to the discharge and suction sides of the fan shall indicate fan status.

Dirty Filter Switches

A differential pressure switch piped to both sides of filter shall indicate filter status

Humidity & Temperature Sensors, CO2 Sensors, Smoke Detector

A probe sensor shall be mounted at the return damper to monitor RH%, Temperature, CO2 level, and smoke particles of return air.

Trane Catalytic Air Cleaning System (TCACS)-Photo Catalytic Oxidation (PCO) + Ultraviolet Germicidal Irradiation (UVGI)

The presence of various undesirable gases and vapour's (particularly formaldehyde, radon, oxidants, and volitile organic compounds, or VOCs) indoors can be detrimental to building occupants, materials, and contents. Controlling VOC concentrations is particularly challenging - hundreds of them are present, few are unique to any one source, and there are many potential sources, some of which emit several VOCs.

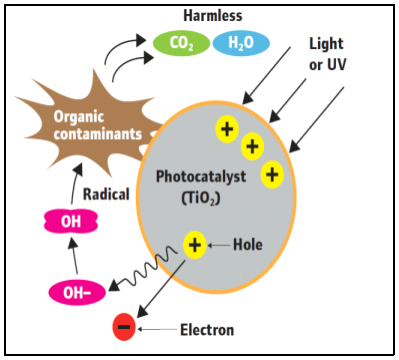
One approach to neutralize the contaminants in the air can be done through air cleaning mechanisms UVC/PCO technology to reduce volatile organic compounds (VOC's) through photo catalytic oxidation without the creation of ozone or by-products.

Advantages:

The Trane Catalytic Air Cleaning System combines three proven technologies to address all types of indoor air contaminants - particles, gases and bio aerosols High-efficiency particle filtration, ultraviolet germicidal irradiation (UVG) and photo catalysis (PCO) merge to improve IAQ in spaces with low level odors and areas with a threat of, or concern for, the airborne spread of disease

This unique air cleaning process employed by this system involves three technologies that holistically control the broad range of airborne contaminants commonly found in commercial buildings:

- High-efficiency particle capture
- Ultraviolet germicidal irradiation (UVGI)
- Photo-catalytic oxidation (PCO)

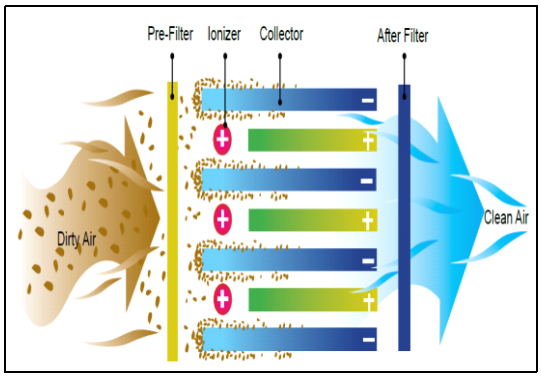


Electrostatic Air Cleaner (Electronic Filter)

Contaminated air is drawn by the motor/blower through a washable metal mesh pre-filter which traps large dust particles. The remaining particles, some as small as 0.01 micron, pass into a strong electrical field (ionizing section) where the particulates receive an electrical charge. The charged particles then pass into a collector plate section made up of a series of equally spaced parallel plates. Each alternate plate is charged with same polarity as the particles, which repel, while the interleaving plates are grounded, which attract and collect the contaminants. The contaminants are held in these plates until they are washed away. Air cleaners trap dry particulates like dust, dirt, lint pollens, haze particles etc.

Advantages:

- Pre-filter screen collect larger contaminants.
- Collects particles from 0.01 micron and above.
- State of art power supply ensures peak operating efficiency.
- Power supply incorporates arc suppression features.
- Dual ionizing and collecting voltages for better efficiency.
- On/Wash/Check indicators
  - BMS relay contacts for connection to building management systems.
- Collection cells are “front loaded” making it easier for maintenance.
- Superior performance compared to conventional media filters.
- Low pressure drop
  - Reduces HVAC operating costs.
  - Easy maintenance.
- Unlike disposable media filters, cells are made of aluminum and washable.
- Improves overall indoor air quality in the building.

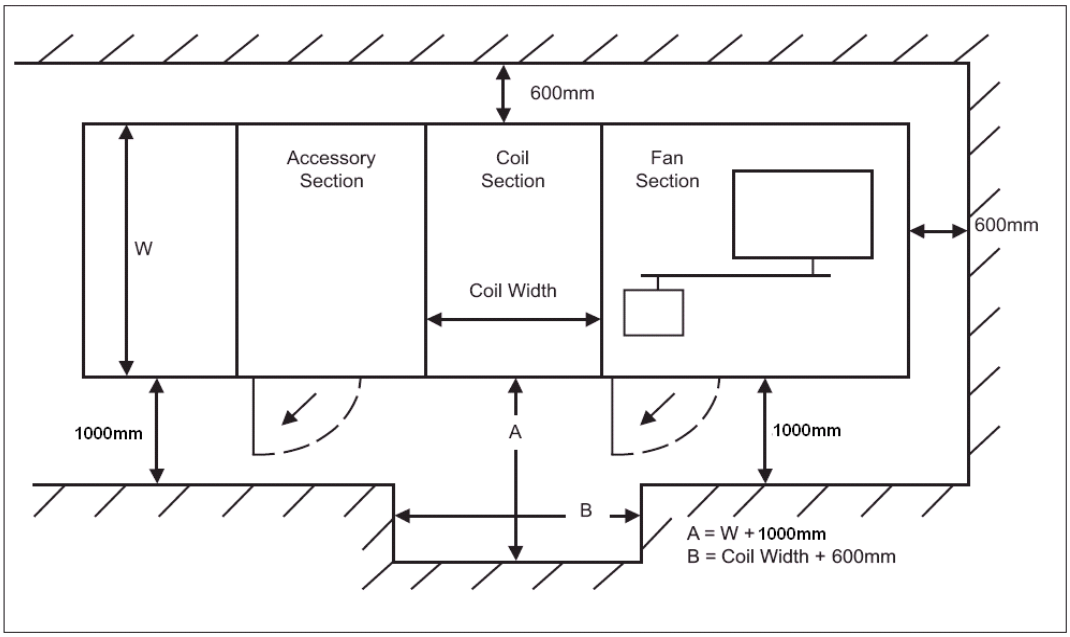

Pre-Filter
Ionizer
Collector
After Filter
Dirty Air
Clean Air

Installation Consideration

Service Clearance

The purpose of this section is to provide the Quantum XP site installation consideration. Refer to installation, Operation and Maintenance manual for detailed installation information. When selecting and preparing the unit site, follow these guidelines:

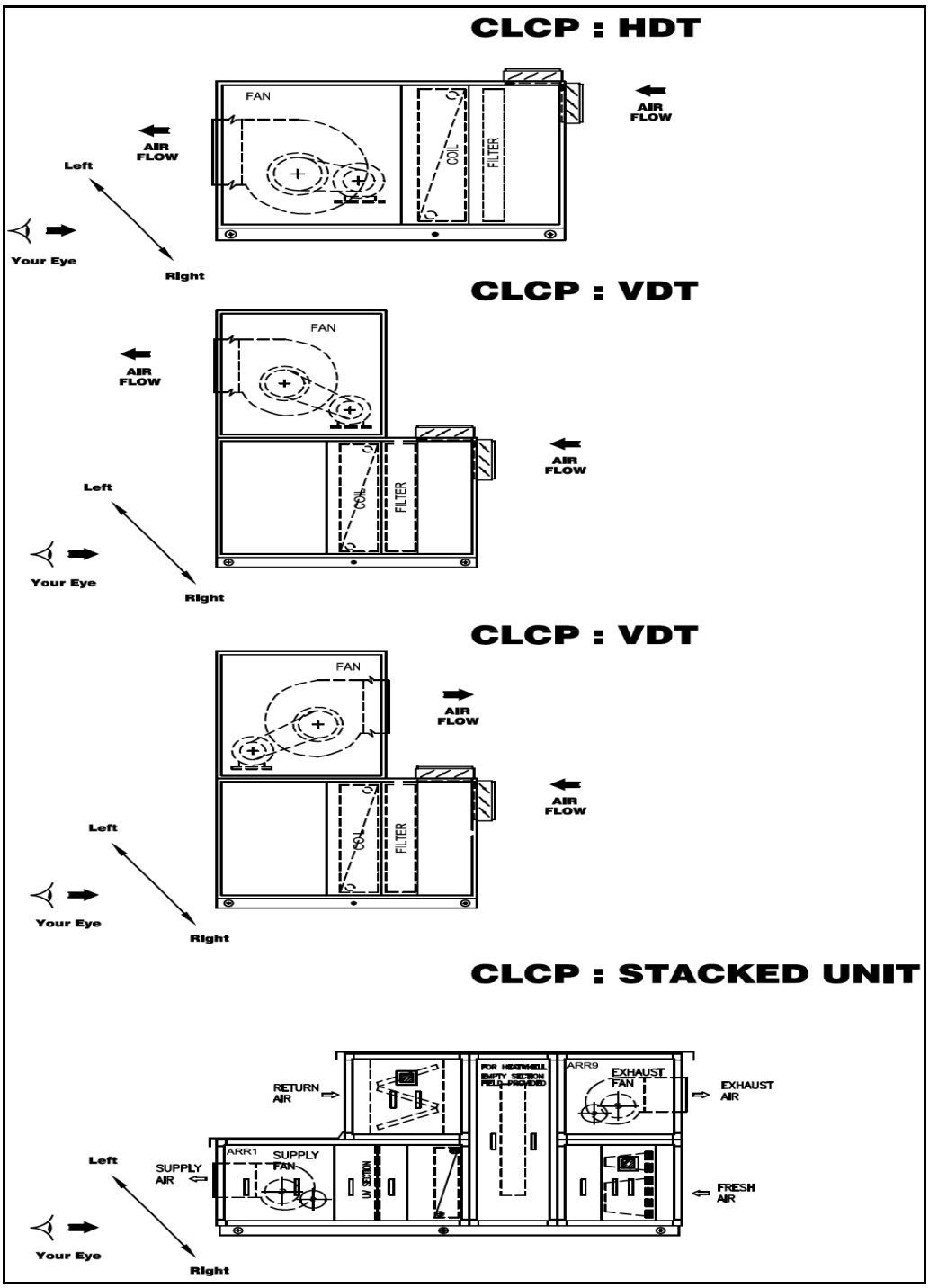
1. Ensure that the site can support the total weight of the unit.
2. Allow sufficient space for service access. The below figure give the recommended space allowances for filters, coil removal, fan shaft removal and motor started maintenance. As unit configurations will vary, refer to unit submittals for specific location of access doors, accessories, motor starter, etc.
3. Confirm that the foundation of the mounting platform is large enough to include the unit dimensions plus services access. Refer to unit submittals for specific dimension. Certain unit maybe suspended from the ceiling. The recommended method for ceiling suspending air handler is with structural channels that run the full length of the unit. The factory shall provide the support with an external support at the base. Do not suspend air handler from the top of the unit. Serious safety risks exist if the unit is not suspended in the proper manner.
4. The floor or foundation must be level for proper coil drainage and condensate flow.
5. Allow the proper height for coil piping and condensate drain requirements. It may be necessary to elevate the unit when piping the condensate drain. Insufficient height could inhibit condensate drainage and result in flooding the unit or equipment room.
6. Provide adequate lighting for maintenance personnel to perform maintenance duties.



Access Side Clearances

Define Unit Handling Left Or Right

Unit handling, LEFT (LH) or RIGHT (RH) for coil connectors, drain, door location & etc. is expressed when facing the airflow through the coil.



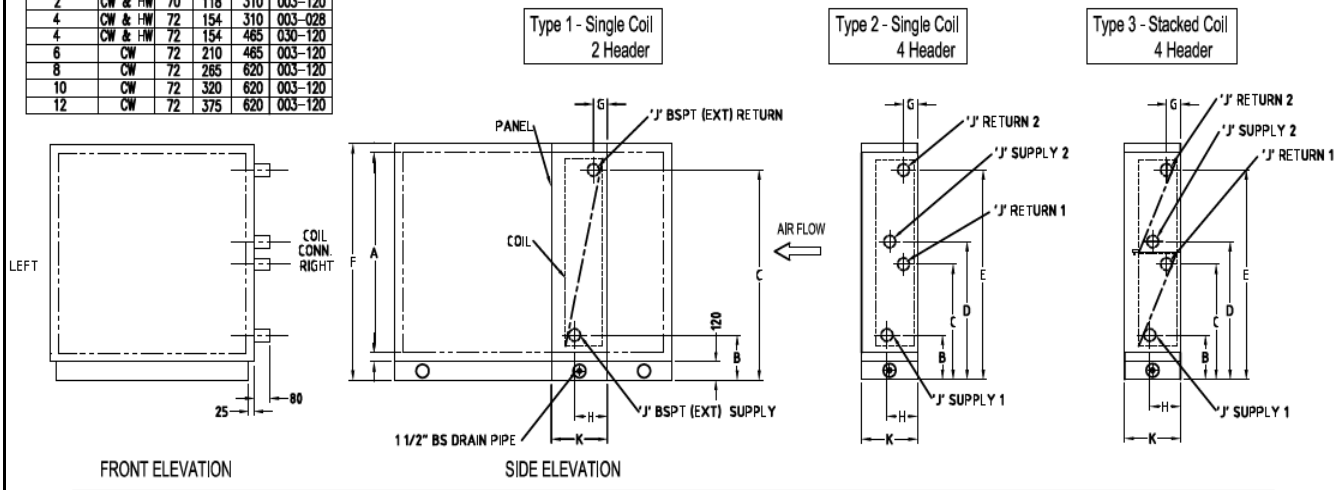
Coil Connection Dimension

25MM CASING CONSTRUCTION

Horizontal / Vertical draw through - Chilled and Hot water coil comnnection Dimension

NOTE :
1. ALL DIMENSION IN MM.

COIL ROW	TYPE	G	H	K	MODEL
1	HW	72	120	310	003-120
2	CW & HW	70	118	310	003-120
4	CW & HW	72	154	310	003-028
4	CW & HW	72	154	465	030-120
6	CW	72	210	465	003-120
8	CW	72	265	620	003-120
10	CW	72	320	620	003-120
12	CW	72	375	620	003-120



								STEEL PIPE EXTERNAL THREADED CONNECTION DIAMETER (ID)				COPPER NON THREADED HEADER DIAMETER (OD)				
								(2 & 3 ROW)	(4, 5, 6, 8, 10 & 12 ROW)			(1 ROW)	(2 & 3 ROW)	(4, 5, 6, 8, 10 & 12 ROW)		
MODEL	TYPE	A	B	C	D	E	F	WL & DL COIL 'J'	WL COIL 'J'	LL COIL 'J'	DL COIL 'J'	WL COIL 'J'	WL & DL COIL 'J'	WL COIL 'J'	LL COIL 'J'	DL COIL 'J'
003	1	620	240	702	–	–	818	40	40	65	40	41	41	41	67	41
004	1	620	240	702	–	–	818	40	40	65	40	41	41	41	67	41
005	1	620	240	702	–	–	818	40	40	65	40	41	41	41	67	41
006	1	620	240	702	–	–	818	40	40	65	40	41	41	41	67	41
008	1	620	240	702	–	–	818	40	40	65	40	41	41	41	67	41
010	1	930	240	1040	–	–	1128	50	50	65	50	41	54	54	67	54
012	1	930	240	1040	–	–	1128	50	50	65	50	41	54	54	67	54
013	1	930	240	1040	–	–	1128	50	50	65	50	41	54	54	67	54
014	1	930	240	1040	–	–	1128	50	50	65	50	41	54	54	67	54
016	1	1240	240	1324	–	–	1438	50	65	65	65	41	54	67	67	67
020	1	1240	240	1324	–	–	1438	50	65	65	65	41	54	67	67	67
022	1	1395	240	1445	–	–	1593	50	65	65	65	41	54	67	67	67
025	1	1550	240	1610	–	–	1748	50	65	65	65	41	54	67	67	67
028	1	1550	240	1610	–	–	1748	50	65	65	65	41	54	67	67	67
030	2	1860	240	1040	1145	1915	2058	50	50	65	50	41	54	54	67	54
032	2	1860	240	1040	1145	1915	2058	50	50	65	50	41	54	54	67	54
035	2	1860	240	1040	1145	1915	2058	50	50	65	50	41	54	54	67	54
040	2	1860	240	1040	1145	1915	2058	50	50	65	50	41	54	54	67	54
045	2	1860	240	1040	1145	1915	2058	50	50	65	50	41	54	54	67	54
048	2	1860	240	1040	1145	1915	2058	50	50	65	50	41	54	54	67	54
050	2	1860	240	1040	1145	1915	2058	50	50	65	50	41	54	54	67	54

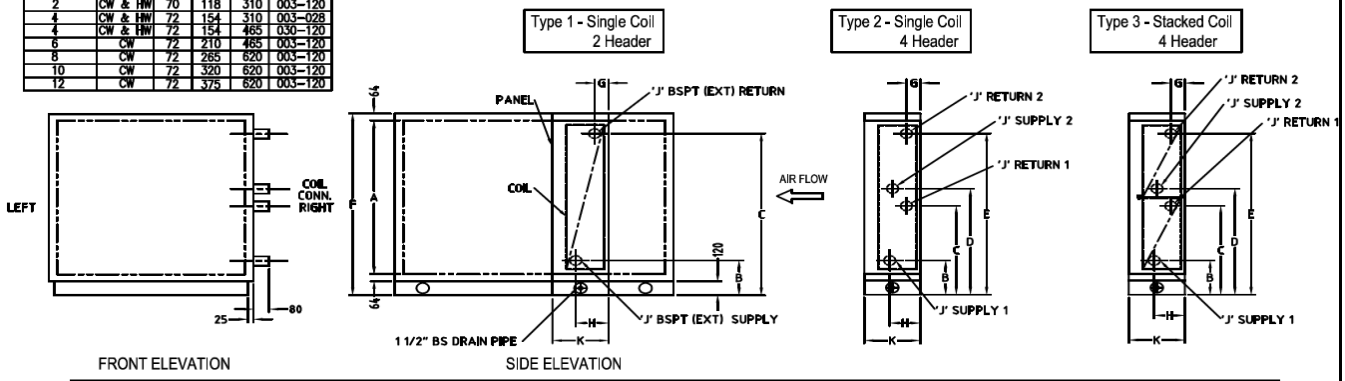
Coil Connection Dimension

50MM CASING CONSTRUCTION

Horizontal / Vertical draw through - Chilled and Hot water coil comnnection Dimension

NOTE :
1. ALL DIMENSION IN MM.

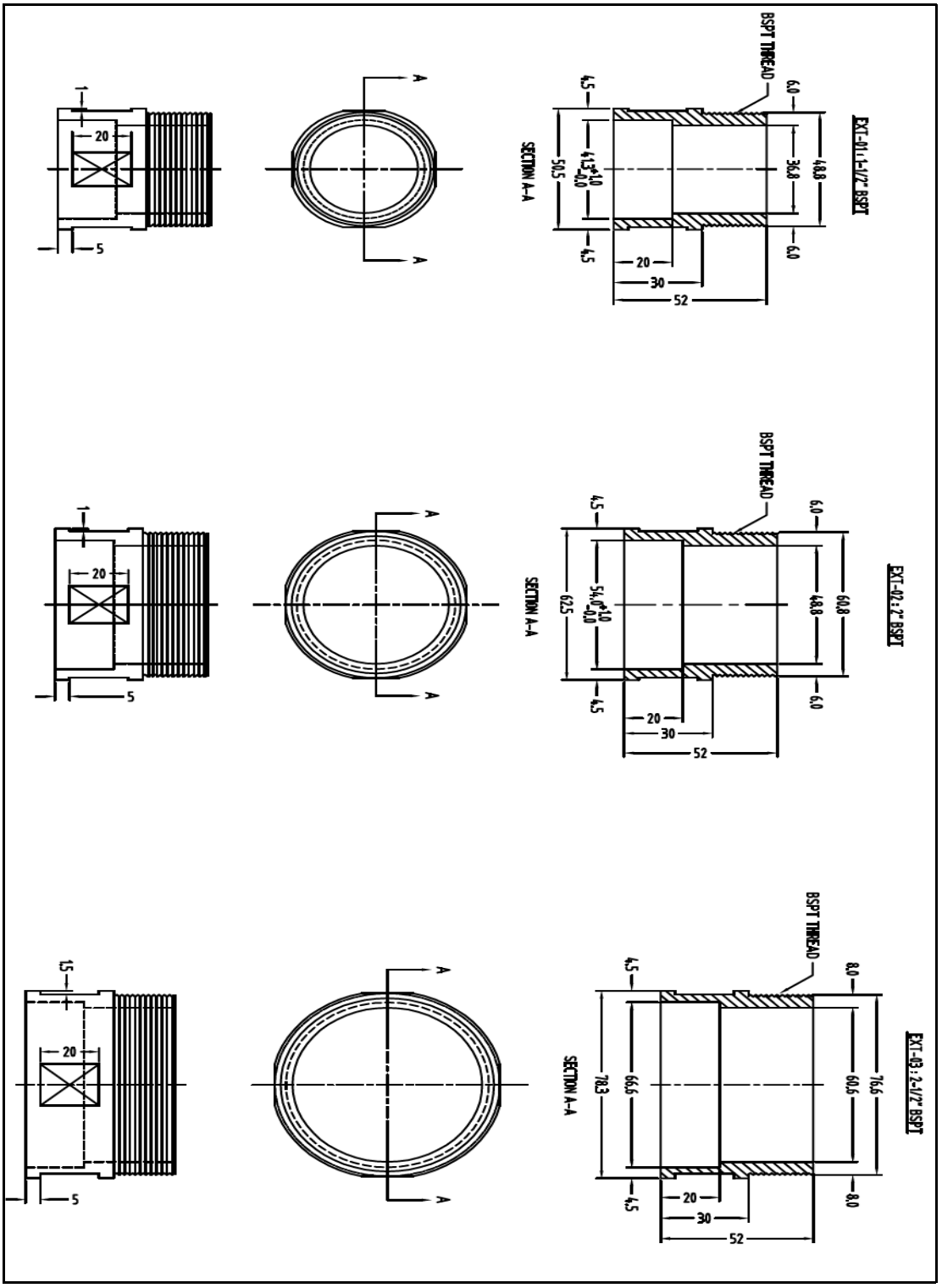
COIL ROW	TYPE	G	H	K	MODEL
1	HW	72	120	310	003~120
2	CW & HW	70	118	310	003~120
4	CW & HW	72	154	310	003~028
4	CW & HW	72	154	465	030~120
6	CW	72	210	465	003~120
8	CW	72	265	620	003~120
10	CW	72	320	620	003~120
12	CW	72	375	620	003~120



								STEEL PIPE EXTERNAL THREADED CONNECTION DIAMETER (ID)				COPPER NON THREADED HEADER DIAMETER (OD)				
								(2 & 3 ROW)	(4, 5, 6, 8, 10 & 12 ROW)			(1 ROW)	(2 & 3 ROW)	(4, 5, 6, 8, 10 & 12 ROW)		
MODEL	TYPE	A	B	C	D	E	F	WL & DL COIL 'J'	WL COIL 'J'	LL COIL 'J'	DL COIL 'J'	WL COIL 'J'	WL & DL COIL 'J'	WL COIL 'J'	LL COIL 'J'	DL COIL 'J'
003	1	620	265	727	–	–	868	40	40	65	40	41	41	41	67	41
004	1	620	265	727	–	–	868	40	40	65	40	41	41	41	67	41
005	1	620	265	727	–	–	868	40	40	65	40	41	41	41	67	41
006	1	620	265	727	–	–	868	40	40	65	40	41	41	41	67	41
008	1	620	265	727	–	–	868	40	40	65	40	41	41	41	67	41
010	1	930	265	1065	–	–	1178	50	50	65	50	41	54	54	67	54
012	1	930	265	1065	–	–	1178	50	50	65	50	41	54	54	67	54
013	1	930	265	1065	–	–	1178	50	50	65	50	41	54	54	67	54
014	1	930	265	1065	–	–	1178	50	50	65	50	41	54	54	67	54
016	1	1240	265	1349	–	–	1488	50	65	65	65	41	54	67	67	67
020	1	1240	265	1349	–	–	1488	50	65	65	65	41	54	67	67	67
022	1	1395	265	1470	–	–	1643	50	65	65	65	41	54	67	67	67
025	1	1550	265	1635	–	–	1798	50	65	65	65	41	54	67	67	67
028	1	1550	265	1635	–	–	1798	50	65	65	65	41	54	67	67	67
030	2	1860	265	1065	1170	1940	2108	50	50	65	50	41	54	54	67	54
032	2	1860	265	1065	1170	1940	2108	50	50	65	50	41	54	54	67	54
035	2	1860	265	1065	1170	1940	2108	50	50	65	50	41	54	54	67	54
040	2	1860	265	1065	1170	1940	2108	50	50	65	50	41	54	54	67	54
045	2	1860	265	1065	1170	1940	2108	50	50	65	50	41	54	54	67	54
048	2	1860	265	1065	1170	1940	2108	50	50	65	50	41	54	54	67	54
050	2	1860	265	1065	1170	1940	2108	50	50	65	50	41	54	54	67	54
055	3	2015	265	1120	1226	2081	2263	50	65	65	65	41	54	67	67	67
								50	65	65	65	41	54	67	67	67
060	3	2170	265	1265	1370	2290	2418	50	65	65	65	41	54	67	67	67
								50	65	65	65	41	54	67	67	67
062	3	2170	265	1265	1370	2290	2418	50	65	65	65	41	54	67	67	67
								50	65	65	65	41	54	67	67	67
065	3	2170	265	1265	1370	2290	2418	50	65	65	65	41	54	67	67	67
								50	65	65	65	41	54	67	67	67
070	3	2170	265	1265	1370	2290	2418	50	65	65	65	41	54	67	67	67
								50	65	65	65	41	54	67	67	67
080	3	2170	265	1265	1370	2290	2418	50	65	65	65	41	54	67	67	67
								50	65	65	65	41	54	67	67	67
085	3	2170	265	1265	1370	2290	2418	50	65	65	65	41	54	67	67	67
								50	65	65	65	41	54	67	67	67
090	3	2170	265	1265	1370	2290	2418	50	65	65	65	41	54	67	67	67
								50	65	65	65	41	54	67	67	67
095	3	2170	265	1265	1370	2290	2418	50	65	65	65	41	54	67	67	67
								50	65	65	65	41	54	67	67	67
100	3	2480	270	1348	1454	2532	2733	50	65	65	65	41	54	67	67	67
								50	65	65	65	41	54	67	67	67
110	3	2635	270	1475	1581	2659	2888	50	65	65	65	41	54	67	67	67
								50	65	65	65	41	54	67	67	67
120	3	2790	270	1475	1581	2786	3043	50	65	65	65	41	54	67	67	67
								50	65	65	65	41	54	67	67	67

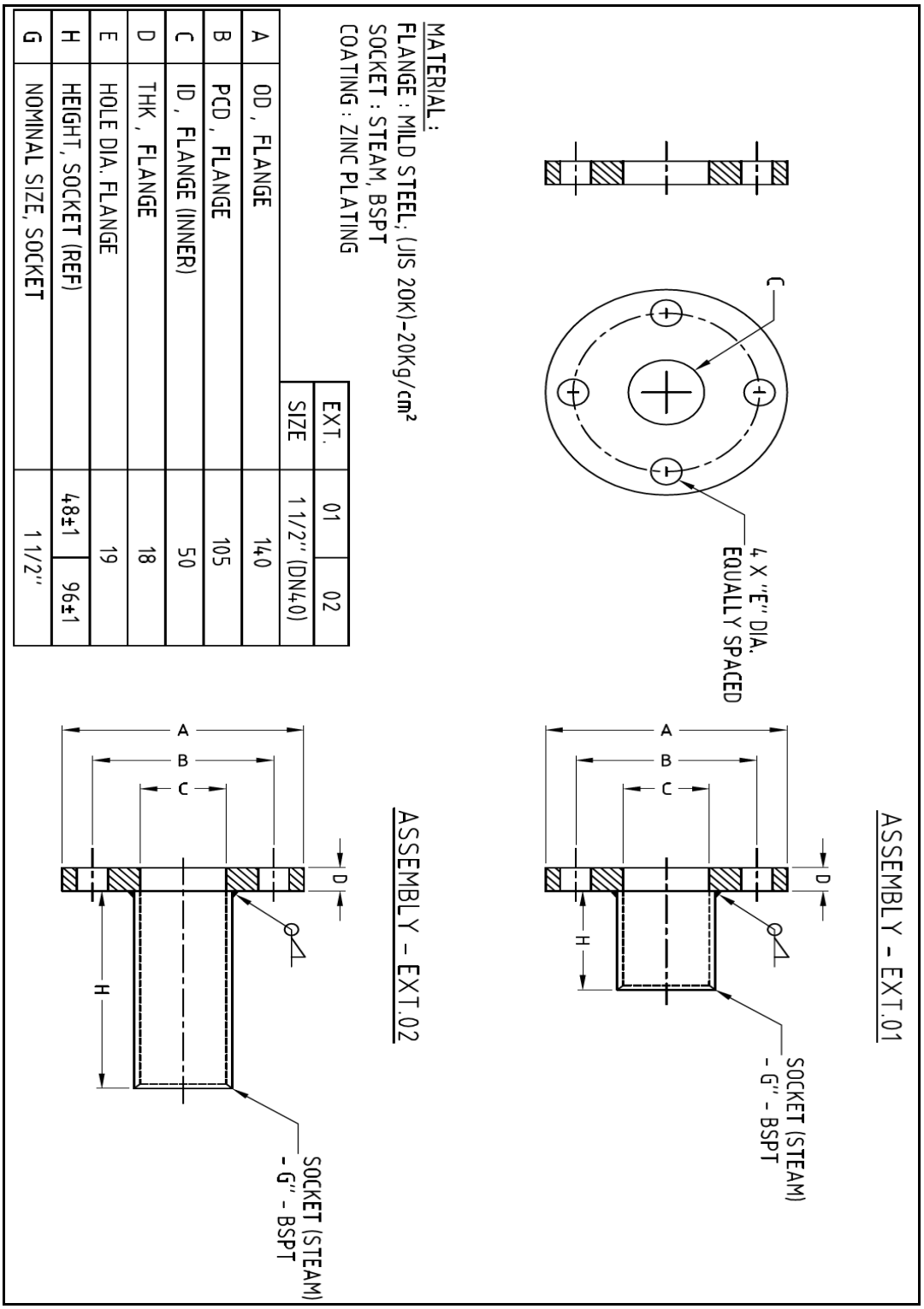
Coil Connection

Brass Adaptor (For Cu. Header)



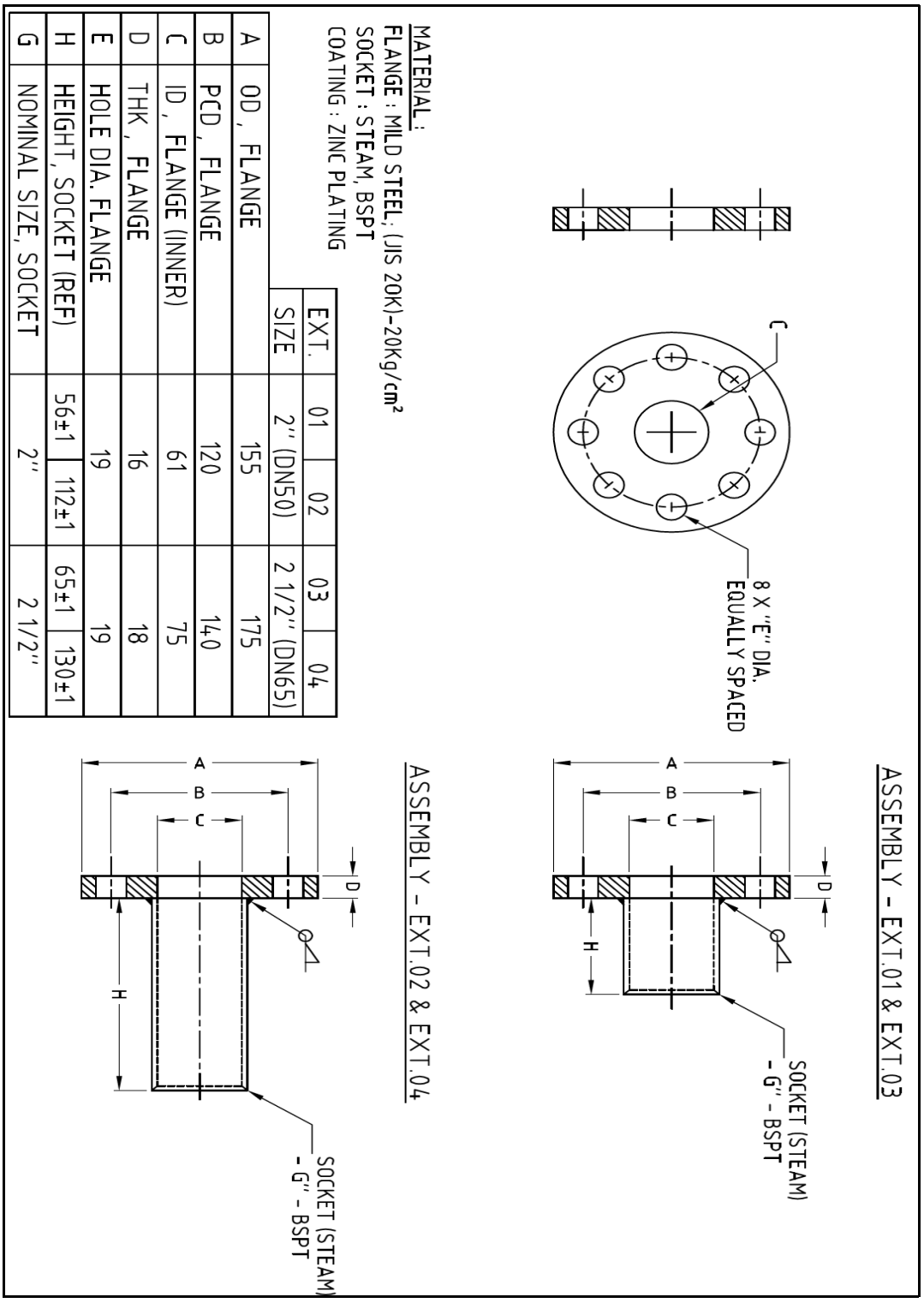
Coil Connection

Flange - Socket Weld (1 1/2” - BSPT)



Coil Connection

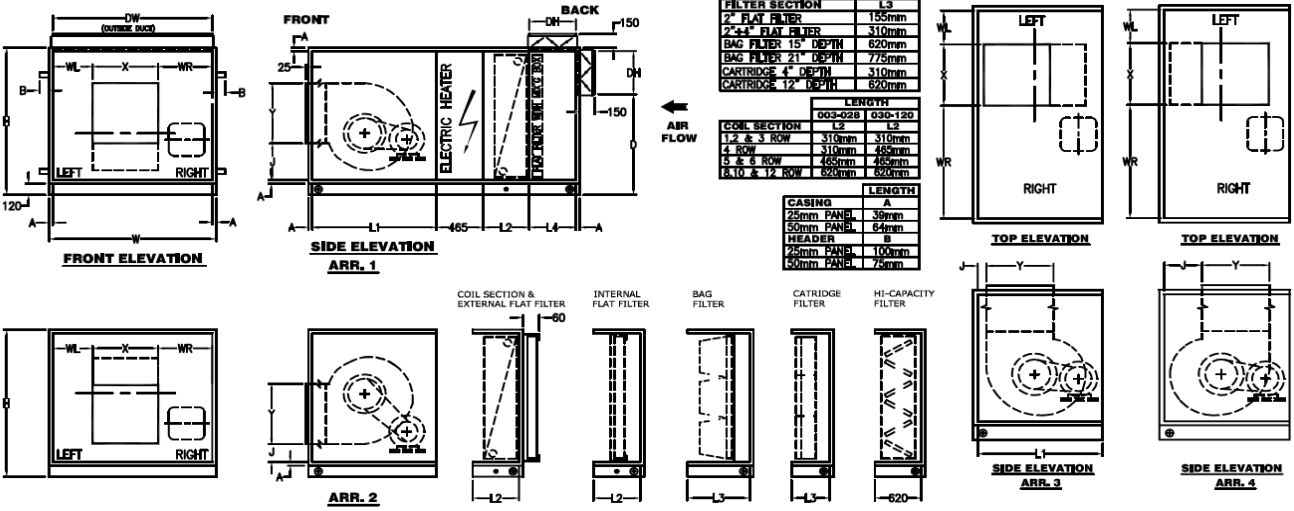
Flange - Socket Weld (2” & 2 1/2” - BSPT)



Appendix :

Dimensional Data HDT (Single Motor)

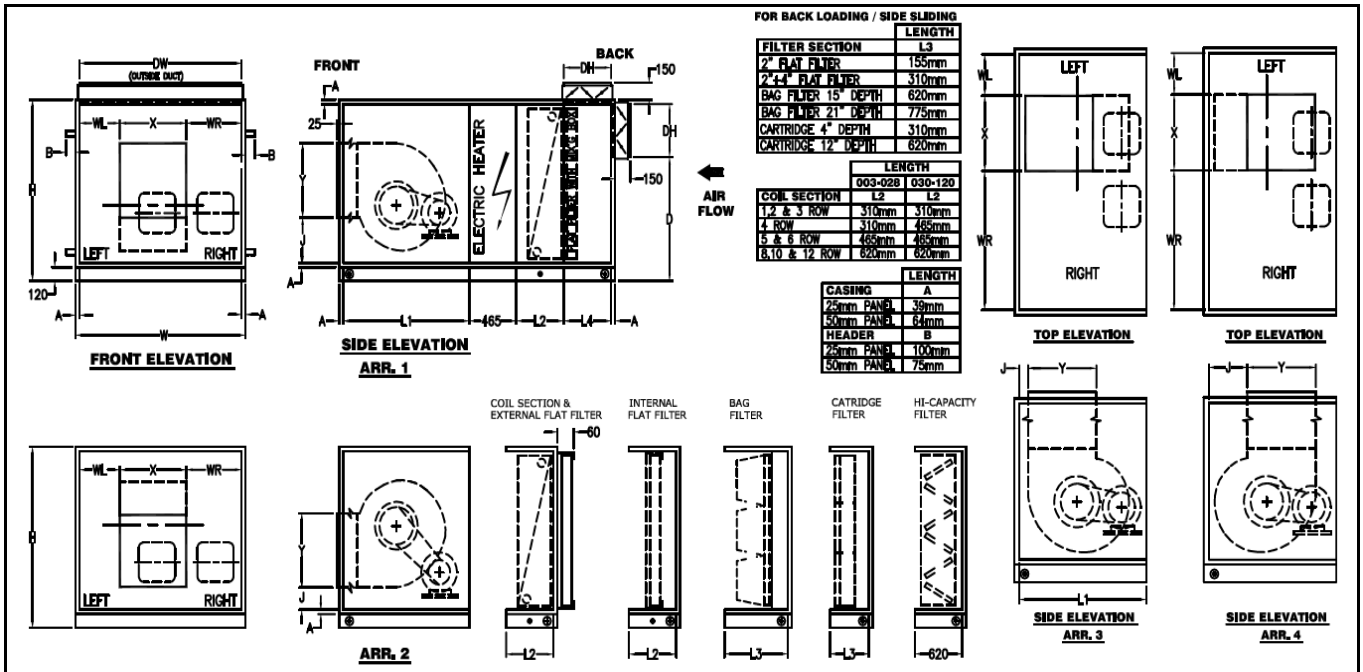
Unit Dimensions



MODEL	FAN	MOTOR	FAN ARR J				FAN SECTION L1		MOTOR ACCESS RH		MOTOR ACCESS LH		X	Y	FLAT FILTER W/ MIX. SECT.	25mm CASING			50mm CASING			DAMPER	
		KW	ARR 1	ARR 2	ARR 3	ARR 4	ARR 1,2	ARR 3,4	WL	WR	WL	WR			L4	H	W	D	H	W	D	DW	DH
003(0404)	F/BDB 200	0.18 - 3	237	131	100	185	775	775	175	175	175	175	270	270	310	818	698	469	868	748	494	620	310
004(0604)	F/BDB 225	0.37 - 3	250	129	99	217	775	775	155	468	468	155	307	307	310	818	1008	469	868	1058	494	930	310
005(0704)	F/BDB 250	0.55 - 7.5	246	125	97	227	775	930	159	586	586	159	340	340	310	818	1163	469	868	1213	494	1085	310
006(0804)	F/BDB 250	0.55 - 7.5	246	125	97	227	775	930	199	702	702	199	340	340	310	818	1318	469	868	1368	494	1240	310
008(1004)	F/BDB 280	0.75 - 7.5	201	53	98	247	775	930	336	837	837	336	378	378	310	818	1628	469	868	1678	494	1550	310
010(0806)	F/BDB 315	1.1 - 7.5	297	120	96	264	930	930	161	657	657	161	422	422	310	1128	1318	779	1178	1368	804	1240	310
		11					1085	1240	409	409	409	409											
012(1006)	F/BDB 355	1.1 - 7.5	336	145	97	290	930	1085	219	861	861	219	470	470	310	1128	1628	779	1178	1678	804	1550	310
		11 - 15					1085	1240															
013(1106)	F/BDB 355	1.1 - 7.5	336	145	97	290	930	1085	296	939	939	296	470	470	310	1128	1783	779	1178	1833	804	1705	310
		11 - 15					1085	1240															
014(1206)	F/BDB 400	1.5 - 7.5	346	125	97	318	930	1085	349	987	987	349	524	524	310	1128	1938	779	1178	1988	804	1860	310
		11 - 15					1085	1240															
016(1008)	F/BDB 450	1.5 - 7.5	389	141	99	345	930	1240	227	738	738	227	586	586	310	1438	1628	1089	1488	1678	1114	1550	310
		11 - 18.5					1395	1550															
020(1208)	F/BDB 500	2.2 - 7.5	411	141	100	368	930	1240	266	938	938	266	656	656	310	1438	1938	1089	1488	1988	1114	1860	310
		11 - 18.5					1085	1395															
022(1209)	F/BDB 500	2.2 - 7.5	411	141	100	368	930	1240	266	938	938	266	656	656	310	1593	1938	1244	1643	1988	1269	1860	310
		11 - 22					1085	1395															
025(1210)	F/BDB 560	2.2 - 7.5	445	144	100	401	1085	1240	276	852	852	276	732	732	465	1748	1938	1244	1798	1988	1269	1860	465
		11 - 15					1240	1395															
		18.5 - 30					1550	1705															
028(1310)	F/BDB 560	2.2 - 7.5	445	144	100	401	1085	1240	276	1007	1007	276	732	732	465	1748	2093	1244	1798	2143	1269	2015	465
		11 - 15					1240	1395															
		18.5 - 30					1395	1550															
030(1212)	F/BDB 560	2.2 - 7.5	445	144	100	401	1085	1240	276	852	852	276	732	732	465	2058	1938	1554	2108	1988	1579	1860	465
		11 - 15					1240	1395															
		18.5 - 30					1550	1705															
032(1312)	F/BDB 560	2.2 - 7.5	445	144	100	401	1085	1240	276	1007	1007	276	732	732	465	2058	2093	1554	2108	2143	1579	2015	465
		11 - 15					1240	1395															
		18.5 - 37					1395	1550															
035(1412)	F/BDB 630	4 - 22	545	201	100	443	1240	1395	294	1058	1058	294	818	818	465	2058	2248	1554	2108	2298	1579	2170	465
		30 - 45					1550	1705															
040(1612)	F/BDB 710	4 - 45	593	202	100	489	1395	1550	406	1158	1158	406	916	916	465	2058	2558	1554	2108	2608	1579	2480	465
045(1812)	F/BDB 710	4 - 45	593	202	100	489	1395	1550	561	1313	1313	561	916	916	465	2058	2868	1554	2108	2918	1579	2790	465
048(1912)	F/BDB 710	4 - 45	593	202	100	489	1395	1550	561	1468	1468	561	916	916	465	2058	3023	1554	2108	3073	1579	2790	465
050(2012)	F/BDB 800	5.5 - 45	649	202	100	547	1550	1705	602	1474	1474	602	1024	1024	465	2058	3178	1554	2108	3228	1579	2790	465
055(2013)	F/BDB 800	5.5 - 45	649	202	100	547	1550	1705	602	1474	1474	602	1024	1024	465	-	-	-	2263	3228	1734	2790	465
060(2014)	F/BDB 800	7.5 - 45	649	202	100	547	1550	1705	602	1474	1474	602	1024	1024	620	-	-	-	2418	3228	1734	2790	620
062(2114)	F/BDB 800	7.5 - 45	649	202	100	547	1550	1705	602	1629	1629	602	1024	1024	620	-	-	-	2418	3383	1734	2790	620
065(2214)	F/BDB 900	7.5 - 22	701	197	100	604	1550	1860	671	1591	1591	671	1148	1148	620	-	-	-	2418	3538	1734	2790	620
		30 - 75					1705	2015															
070(2414)	F/BDB 900	7.5 - 22	701	197	100	604	1550	1860	826	1746	1746	826	1148	1148	775	-	-	-	2418	3848	1579	2790	775
		30 - 75					1705	2015															
080(2614)	F/BDB 1000	7.5 - 75	727	202	102	627	1705	2015	831	1914	1914	831	1284	1284	775	-	-	-	2418	4158	1579	2790	775
085(2814)	F/BDB 1000	7.5 - 75	727	202	102	627	1705	2015	986	2069	2069	986	1284	1284	930	-	-	-	2418	4468	1424	2790	930
090(3014)	F/BDB 1000	11 - 75	727	202	102	627	1705	2015	1141	2224	2224	1141	1284	1284	930	-	-	-	2418	4778	1424	2790	930
095(3214)	F/BDB 1000	11 - 75	727	202	102	627	1705	2015	1296	2379	2379	1296	1284	1284	930	-	-	-	2418	5088	1424	2790	930
100(3216)	F/BDB 1120	15 - 150	816	213	102	745	2170	2635	1295	2225	2225	1295	1440	1440	1085	-	-	-	2733	5088	1739	2790	930
110(3217)	F/BDB 1250	15 - 150	990	248	102	895	2325	2790	1244	2174	2174	1244	1542	1542	1085	-	-	-	2888	5088	1894	2790	930
120(3218)	F/BDB 1250	15 - 150	990	248	102	895	2325	2790	1244	2174	2174	1244	1542	1542	1085	-	-	-	3043	5088	2049	2790	930

Dimensional Data HDT (Dual Motor)

Unit Dimensions



FILTER SECTION	LENGTH L3
2" FLAT FILTER	155mm
2"+4" FLAT FILTER	310mm
BAG FILTER 15" DEPTH	620mm
BAG FILTER 21" DEPTH	775mm
CARTRIDGE 4" DEPTH	310mm
CARTRIDGE 12" DEPTH	620mm

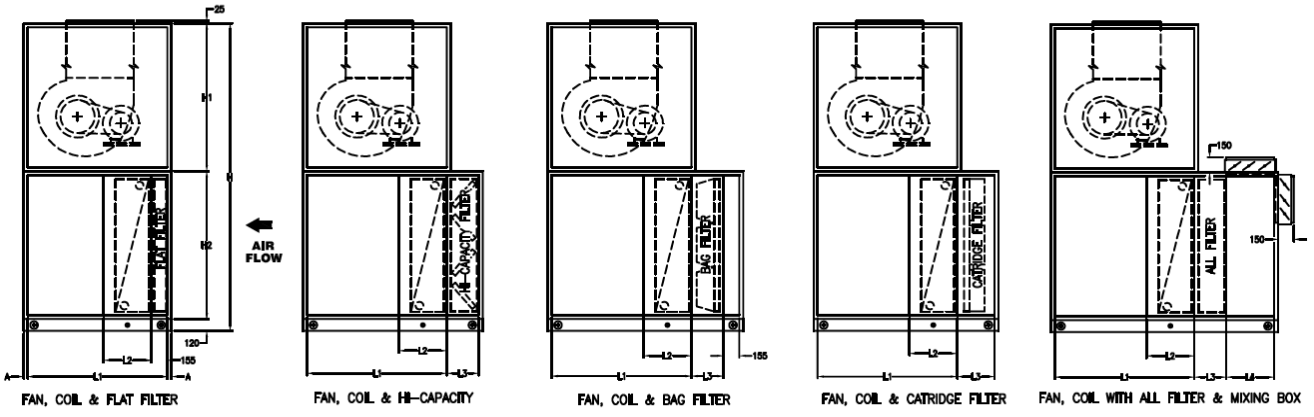
COIL SECTION	LENGTH 003-028 L2	LENGTH 030-120 L2
1,2 & 3 ROW	310mm	310mm
4 ROW	310mm	465mm
5 & 6 ROW	465mm	465mm
8,10 & 12 ROW	620mm	620mm

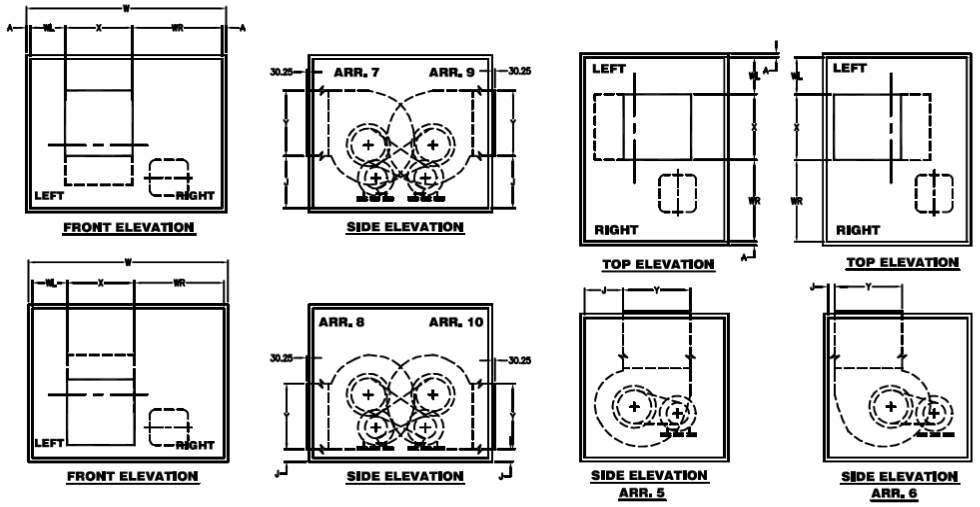
CASING	LENGTH A
25mm PANEL	39mm
50mm PANEL	64mm
HEADER	B
25mm PANEL	100mm
50mm PANEL	75mm

MODEL	FAN	MOTOR KW	FAN ARR J ARR 1	J ARR 2	J ARR 3	J ARR 4	FAN SECTION L1 ARR 1,2	L1 ARR 3,4	MOTOR ACCESS RH WL	RH WR	LH WL	LH WR	X	Y	FLAT FILTER W/ MIX. SEC. L4	25mm CASING H	25mm CASING W	25mm CASING D	50mm CASING H	50mm CASING W	50mm CASING D	DAMPER DW	DAMPER DH	FAN LOCATION
003(0404)	F/BDB 200	0.18 ~ 3	237	131	100	185	1240	1240	175	175	175	175	270	270	310	818	698	469	868	748	494	620	310	CENTER
004(0604)	F/BDB 225	0.37 ~ 3	250	129	99	217	930	930	155	468	468	155	307	307	310	818	1008	469	868	1058	494	930	310	OFFSET
005(0704)	F/BDB 250	0.55 ~ 7.5	220	90	97	227	930	930	159	586	159	586	340	340	310	818	1163	469	868	1213	494	1085	310	OFFSET
006(0804)	F/BDB 250	0.55 ~ 7.5	220	90	97	227	930	930	199	702	702	199	340	340	310	818	1318	469	868	1368	494	1240	310	OFFSET
008(1004)	F/BDB 280	0.75 ~ 7.5	201	53	98	247	930	930	586	586	586	586	378	378	310	818	1628	469	868	1678	494	1550	310	CENTER
010(0806)	F/BDB 315	1.1 ~ 7.5	297	120	96	264	1085	1085	161	657	657	161	422	422	310	1128	1318	779	1178	1368	804	1240	310	OFFSET
012(1006)	F/BDB 355	1.1 ~ 15	336	145	97	290	1240	1395	246	834	834	246	470	470	310	1128	1628	779	1178	1678	804	1550	310	OFFSET
013(1106)	F/BDB 355	1.1 ~ 15	336	145	97	290	1240	1395	321	912	912	321	470	470	310	1128	1783	779	1178	1833	804	1705	310	OFFSET
014(1206)	F/BDB 400	1.5 ~ 15	346	125	97	318	1240	1395	349	987	987	349	524	524	310	1128	1938	779	1178	1988	804	1860	310	OFFSET
016(1008)	F/BDB 450	1.5 ~ 7.5	389	141	99	345	1240	1395	227	738	738	227	586	586	310	1438	1628	1089	1488	1678	1114	1550	310	OFFSET
		11 ~ 18.5					1860	2015																
020(1208)	F/BDB 500	2.2 ~ 18.5	411	141	100	368	1395	1550	266	938	938	266	656	656	310	1438	1938	1089	1488	1988	1114	1860	310	OFFSET
022(1209)	F/BDB 500	2.2 ~ 18.5	411	141	100	368	1395	1550	266	938	938	266	656	656		1593	1938	1244	1643	1988	1269	1860	310	OFFSET
025(1210)	F/BDB 560	2.2 ~ 15	513	212	100	401	1550	1705	276	852	852	276	732	732	465	1748	1938	1244	1798	1988	1269	1860	465	OFFSET
		18.5 ~ 22					2170	2480																
028(1310)	F/BDB 560	2.2 ~ 15	513	212	100	401	1550	1705	276	1007	929	354	732	732	465	1748	2093	1244	1798	2143	1269	2015	465	OFFSET
		18.5 ~ 22					2170	2480																
030(1212)	F/BDB 560	3 ~ 15	513	212	100	401	1550	1705	276	852	852	276	732	732	465	2058	1938	1554	2108	1988	1579	1860	465	OFFSET
		18.5 ~ 30					2170	2480																
032(1312)	F/BDB 560	3 ~ 15	513	212	100	401	1550	1705	276	1007	929	354	732	732	465	2058	2093	1554	2108	2143	1579	2015	465	OFFSET
		18.5 ~ 30					2170	2480																
035(1412)	F/BDB 630	4 ~ 22	545	201	100	443	1550	1860	294	1058	1058	294	818	818	465	2058	2248	1554	2108	2298	1579	2170	465	OFFSET
		30 ~ 45					1705	2015																
040(1612)	F/BDB 710	4 ~ 22	593	202	100	489	1705	2015	406	1158	1158	406	916	916	465	2058	2558	1554	2108	2608	1579	2480	465	OFFSET
		30 ~ 45					1860	2170																
045(1812)	F/BDB 710	4 ~ 22	593	202	100	489	1705	2015	561	1313	1313	561	916	916	465	2058	2868	1554	2108	2918	1579	2790	465	OFFSET
		30 ~ 45					1860	2170																
048(1912)	F/BDB 710	4 ~ 22	593	202	100	489	1705	2015	561	1468	1468	561	916	916	465	2058	3023	1554	2108	3073	1579	2790	465	OFFSET
		30 ~ 45					1860	2170																
050(2012)	F/BDB 800	5.5 ~ 45	649	202	100	547	1550	1705	1038	1038	1038	1038	1024	1024	465	2058	3178	1554	2108	3228	1579	2790	465	CENTER
055(2013)	F/BDB 800	5.5 ~ 45	649	202	100	547	1550	1705	1038	1038	1038	1038	1024	1024	465	~	~	~	2263	3228	1734	2790	465	CENTER
060(2014)	F/BDB 800	7.5 ~ 45	649	202	100	547	1550	1705	1038	1038	1038	1038	1024	1024	620	~	~	~	2418	3228	1734	2790	620	CENTER
062(2114)	F/BDB 800	7.5 ~ 45	649	202	100	547	1550	1705	1038	1193	1193	1038	1024	1024	620	~	~	~	2418	3383	1734	2790	620	CENTER
065(2214)	F/BDB 900	7.5 ~ 22	701	197	100	604	1550	1860	1131	1131	1131	1131	1148	1148	620	~	~	~	2418	3538	1734	2790	620	CENTER
		30 ~ 75					1705	2015																
070(2414)	F/BDB 900	7.5 ~ 22	701	197	100	604	1550	1860	1286	1286	1286	1286	1148	1148	775	~	~	~	2418	3848	1579	2790	775	CENTER
		30 ~ 75					1705	2015																
080(2614)	F/BDB 1000	7.5 ~ 75	727	202	102	627	1705	2015	1373	1373	1373	1373	1284	1284	775	~	~	~	2418	4158	1579	2790	775	CENTER
085(2814)	F/BDB 1000	7.5 ~ 75	727	202	102	627	1705	2015	1528	1528	1528	1528	1284	1284	930	~	~	~	2418	4468	1424	2790	930	CENTER
090(3014)	F/BDB 1000	7.5 ~ 75	727	202	102	627	1705	2015	1373	1993	1993	1373	1284	1284	930	~	~	~	2418	4778	1424	2790	930	CENTER
095(3214)	F/BDB 1000	7.5 ~ 75	727	202	102	627	1705	2015	1373	2303	2303	1373	1284	1284	930	~	~	~	2418	5088	1424	2790	930	CENTER

Dimensional Data VDT (Single Motor)

Unit Dimensions





COIL SECTION	LENGTH 003-028 L2	LENGTH 030-045 L2
1,2 & 3 ROW	310mm	310mm
4 ROW	310mm	465mm
5 ROW & 6 ROW	465mm	465mm
8,10 & 12 ROW	620mm	620mm

FILTER SECTION	LENGTH L3
FLAT FILTER	155mm
BAG FILTER 15" DEPTH	465mm
BAG FILTER 21" DEPTH	620mm
HI-CAPACITY 12" DEPTH	620mm
CARTRIDGE 4" DEPTH	310mm
CARTRIDGE 12" DEPTH	620mm

CASING	LENGTH A
25mm PANEL	39mm
50mm PANEL	64mm

MODEL	FAN	MOTOR KW	FAN ARR J ARR 7,9	J ARR 8,10	J ARR 6	J ARR 5	FAN SECTION L1 ARR 5,6	L1 ARR 7,8,9,1	MOTOR ACCESS RH WL	RH WR	LH WL	LH WR	X	Y	FLAT FILTER W/ MIX. SEC L4	1" CASING H	1" CASING W	1" CASING H1	1" CASING H2	2" CASING H	2" CASING W	2" CASING H1	2" CASING H2
003(0404)	F/BDB 200	0.18 - 3	237	131	100	185	930	930	175	175	175	175	270	270	310	1516	698	698	698	1616	748	748	748
004(0604)	F/BDB 225	0.37 - 3	250	129	99	217	930	930	155	468	468	155	307	307	310	1516	1008	698	698	1616	1058	748	748
005(0704)	F/BDB 250	0.55 - 7.5	246	125	97	227	930	930	159	586	586	159	340	340	310	1516	1163	698	698	1616	1213	748	748
006(0804)	F/BDB 250	0.55 - 7.5	246	125	97	227	930	930	199	702	702	199	340	340	310	1516	1318	698	698	1616	1368	748	748
008(1004)	F/BDB 280	0.75 - 7.5	201	53	98	247	1085	1085	336	837	837	336	378	378	310	1516	1628	698	698	1616	1678	748	748
010(0806)	F/BDB 315	1.1 - 7.5	297	120	96	264	1085	1085	161	657	657	161	422	422	310	2136	1318	1008	1008	2236	1368	1058	1058
		11 - 15					1240	1085	409	409	409	409											
012(1006)	F/BDB 355	1.1 - 15	336	145	97	290	1240	1085	219	861	861	219	470	470	310	2136	1628	1008	1008	2236	1678	1058	1058
013(1106)	F/BDB 355	1.1 - 15	336	145	97	290	1240	1085	296	939	939	296	470	470	310	2136	1783	1008	1008	2236	1833	1058	1058
014(1206)	F/BDB 400	1.5 - 15	346	125	97	318	1240	1085	349	987	987	349	524	524	310	2136	1938	1008	1008	2236	1988	1058	1058
016(1008)	F/BDB 450	1.5 - 7.5	389	141	99	345	1240	1085	227	738	738	227	586	586	310	2756	1628	1318	1318	2856	1678	1368	1368
		11 - 18.5					1550	1395															
020(1208)	F/BDB 500	2.2 -18.5	411	141	100	368	1395	1240	266	938	938	266	656	656	310	2756	1938	1318	1318	2856	1988	1368	1368
022(1209)	F/BDB 500	2.2 - 22	411	141	100	368	1395	1240	266	938	938	266	656	656	310	3066	1938	1473	1473	3166	1988	1523	1523
025(1210)	F/BDB 560	2.2 -7.5	445	144	100	401	1395	1240	276	851	851	276	732	732	465	3376	1938	1628	1628	3476	1988	1678	1678
		11 - 15					1550	1395															
		18.5 - 30					1860	1550															
028(1310)	F/BDB 560	2.2 -7.5	445	144	100	401	1395	1240	276	1007	1007	276	732	732	465	3376	2093	1628	1628	3476	2143	1678	1678
		11 - 15					1550	1395															
		18.5 - 30					1860	1550															
030(1212)	F/BDB 560	2.2 -7.5	445	144	100	401	1395	1240	276	851	851	276	732	732	465	3996	1938	1938	1938	4096	1988	1988	1988
		11 - 15					1550	1395															
		18.5 - 30					1860	1550															
032(1312)	F/BDB 560	2.2 -7.5	445	144	100	401	1085	1240	276	1007	1007	276	732	732	465	3996	2093	1938	1938	4096	2143	1988	1988
		11 - 15					1240	1395															
		18.5 - 37					1395	1550															
035(1412)	F/BDB 630	4 - 22	545	201	100	443	1550	1395	294	1058	1058	294	818	818	465	3996	2248	1938	1938	4096	2298	1988	1988
		30 - 45					1860	1705															
040(1612)	F/BDB 710	4 - 45	593	202	100	489	1705	1550	406	1158	1158	406	916	916	465	3996	2558	1938	1938	4096	2608	1988	1988
045(1812)	F/BDB 710	4 - 45	593	202	100	489	1705	1550	561	1313	1313	561	916	916	465	3996	2868	1938	1938	4096	2918	1988	1988

Filter Dimension (Nominal) and Arrangement

High Capacity Angle Filter

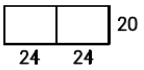
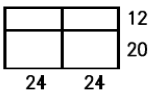
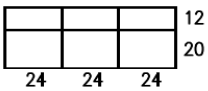
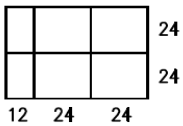
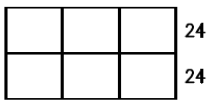
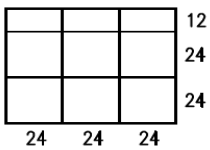
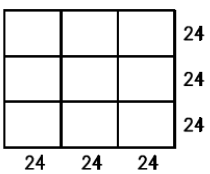
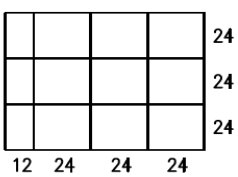
FILTER PLAN		
MODEL	DIMENSION	FILTER ARRANGEMENT
003	2 ROWS – 24" X 20"	24 20
004	2 ROWS – 24" X 20"	24 20
005	2 ROWS – 24" X 20"	24 20
006	2 ROWS – 48" X 20"	24 24 20
008	2 ROWS – 48" X 20"	24 24 20
010	4 ROWS – 48" X 20"	24 24 20
012	4 ROWS – 48" X 20"	24 24 20
013	4 ROWS – 48" X 20"	24 24 20
014	4 ROWS – 72" X 20"	24 24 24 20
016	5 ROWS – 48" X 20"	24 24 20
020	5 ROWS – 72" X 20"	24 24 24 20
022	5 ROWS – 72" X 20"	24 24 24 20
025	7 ROWS – 72" X 20"	24 24 24 20
028	7 ROWS – 72" X 20"	24 24 24 20
030	8 ROWS – 72" X 20"	24 24 24 20
032	8 ROWS – 72" X 20"	24 24 24 20
035	8 ROWS – 72" X 20"	24 24 24 20

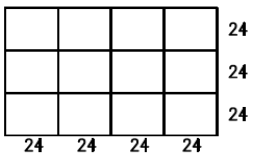
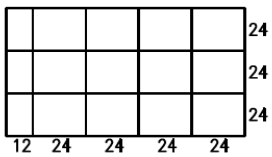
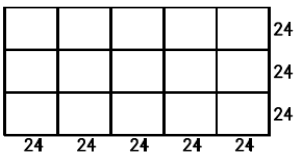
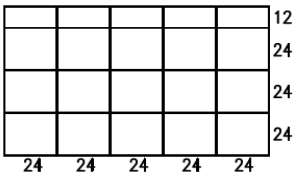
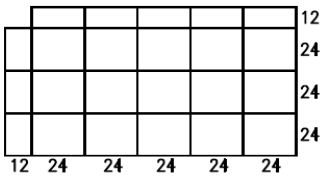
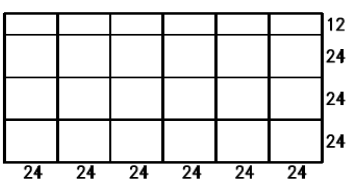
FILTER PLAN		
MODEL	DIMENSION	FILTER ARRANGEMENT
040	8 ROWS – 96" X 20"	24 24 24 24 20
045	8 ROWS – 96" X 20"	24 24 24 24 20
048	8 ROWS – 96" X 20"	24 24 24 24 20
050	8 ROWS – 120" X 20"	24 24 24 24 24 20
055	8 ROWS – 120" X 20"	24 24 24 24 24 20
060	9 ROWS – 120" X 20"	24 24 24 24 24 20
062	9 ROWS – 120" X 20"	24 24 24 24 24 20
065	9 ROWS – 120" X 20"	24 24 24 24 24 20
070	9 ROWS – 144" X 20"	24 24 24 24 24 24 20
080	9 ROWS – 144" X 20"	24 24 24 24 24 24 20
085	9 ROWS – 168" X 20"	24 24 24 24 24 24 24 20
090	9 ROWS – 168" X 20"	24 24 24 24 24 24 24 20
095	9 ROWS – 168" X 20"	24 24 24 24 24 24 24 20
100	10 ROWS – 168" X 20"	24 24 24 24 24 24 24 20
110	11 ROWS – 168" X 20"	24 24 24 24 24 24 24 20
120	12 ROWS – 168" X 20"	24 24 24 24 24 24 24 20

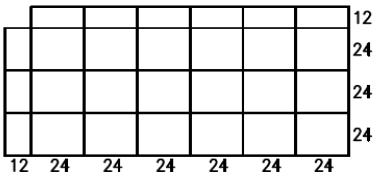
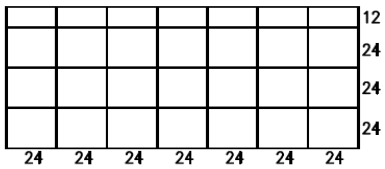
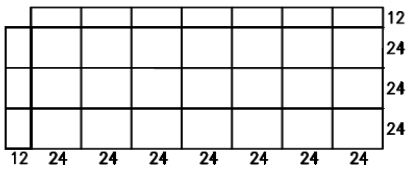
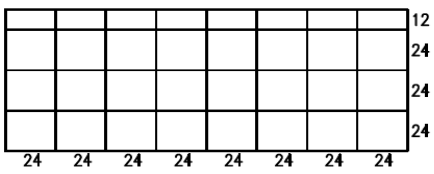
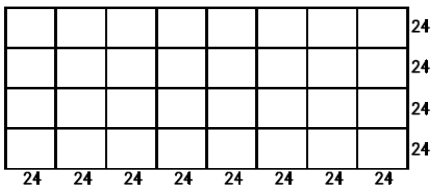
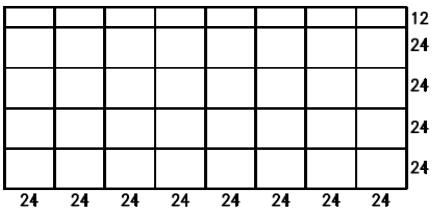
Filter Dimension (Nominal) and Arrangement

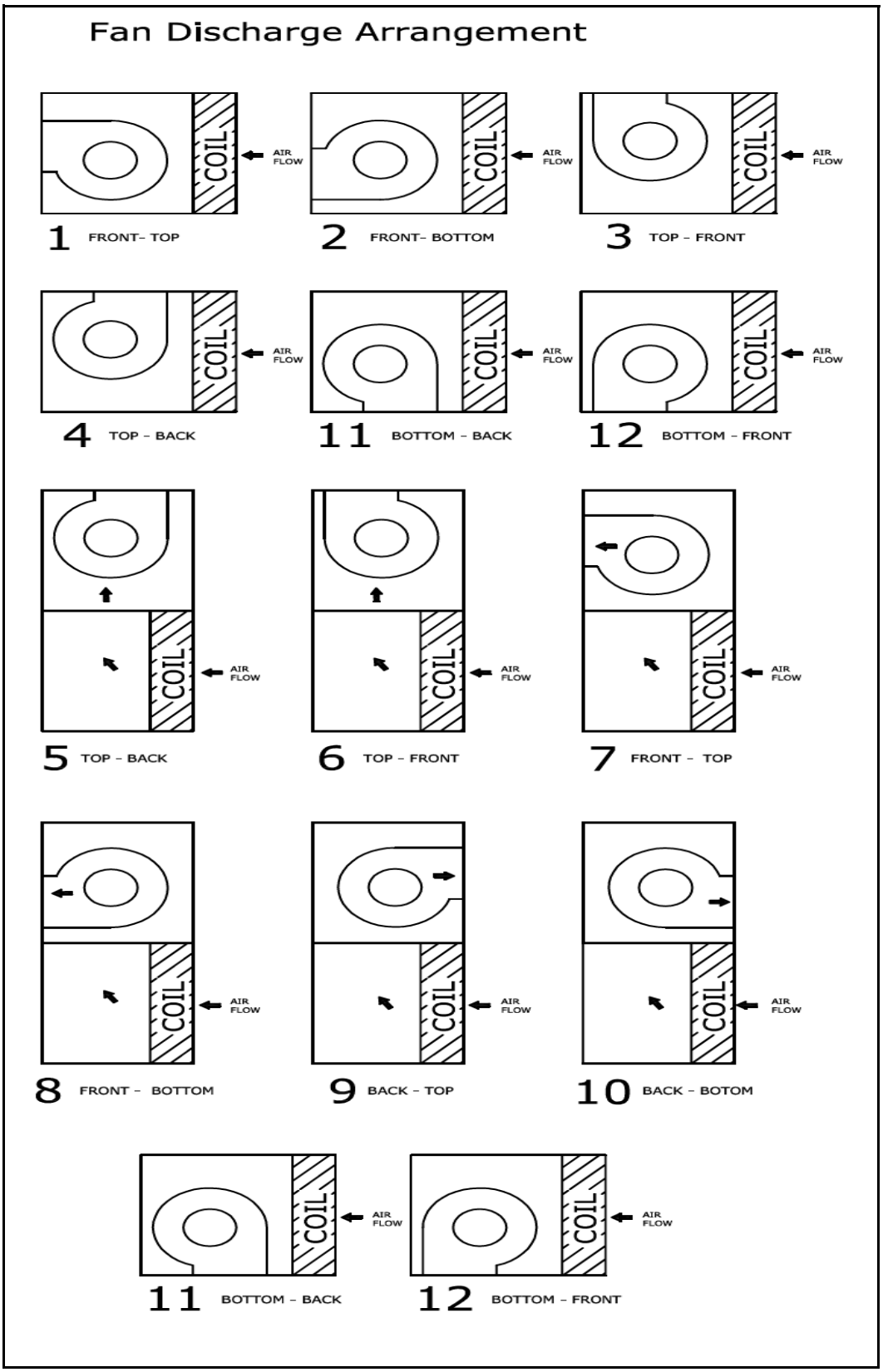
Flat Filter. Bag Filter & Cartridge Filter

FILTER PLAN

MODEL	ARRANGEMENT (NOMINAL SIZES IN INCHES)
003 004 005	
006 008	
010 012 013	
014	
016	
020 022	
025 028	
030 032	
035	

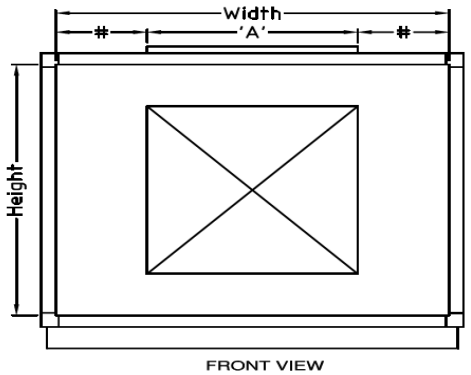
MODEL	ARRANGEMENT (NOMINAL SIZES IN INCHES)
040	
045 048	
050 055	
060 062	
065	
070	

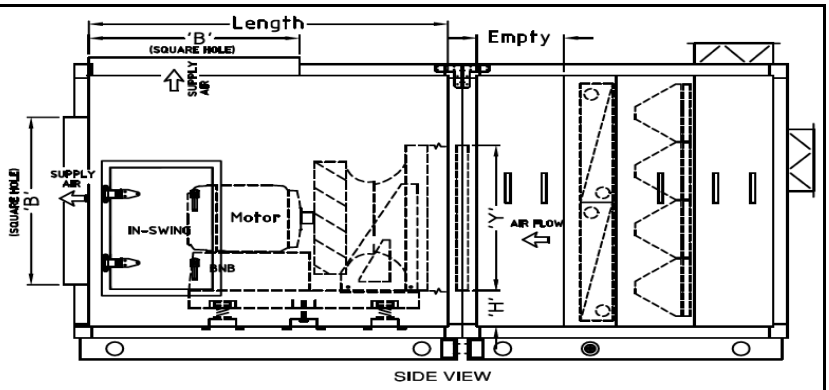
MODEL	ARRANGEMENT (NOMINAL SIZES IN INCHES)
080	
085	
090	
095	
100 110	
120	


Fan Discharge Arrangement
COIL
AIR FLOW
1 FRONT- TOP
2 FRONT- BOTTOM
3 TOP - FRONT
4 TOP - BACK
11 BOTTOM - BACK
12 BOTTOM - FRONT
5 TOP - BACK
6 TOP - FRONT
7 FRONT - TOP
8 FRONT - BOTTOM
9 BACK - TOP
10 BACK - BOTOM
11 BOTTOM - BACK
12 BOTTOM - FRONT

Appendix :

Plug Fan
Dimensional Data





Fan size	BNB 315	BNB 355	BNB 400	BNB 450	BNB 500	BNB 560	BNB 630	BNB 710	BNB 800	BNB 900	BNB 1000	BNB 1120	BNB 1250	BNB 1400
H	190	190	190	190	190	190	205	205	205	205	230	255	255	255
Y	490	530	580	630	700	790	890	1000	1120	1240	1390	1550	1700	1900
Minimum unit Height	775(05	775(05	930(06)	1085(07)	1085(07)	1240(08)	1240(08)	1395(09)	1550(10)	1550(10)	1705(11)	1860(12)	2170(14)	2480(16)
Minimum unit Widtht	1240(08)	1240(08)	1240(08)	1550(10)	1550(10)	1550(10)	1860(12)	1860(12)	1860(12)	2170(14)	2170(14)	3100(20)	3410(22)	3720(24)

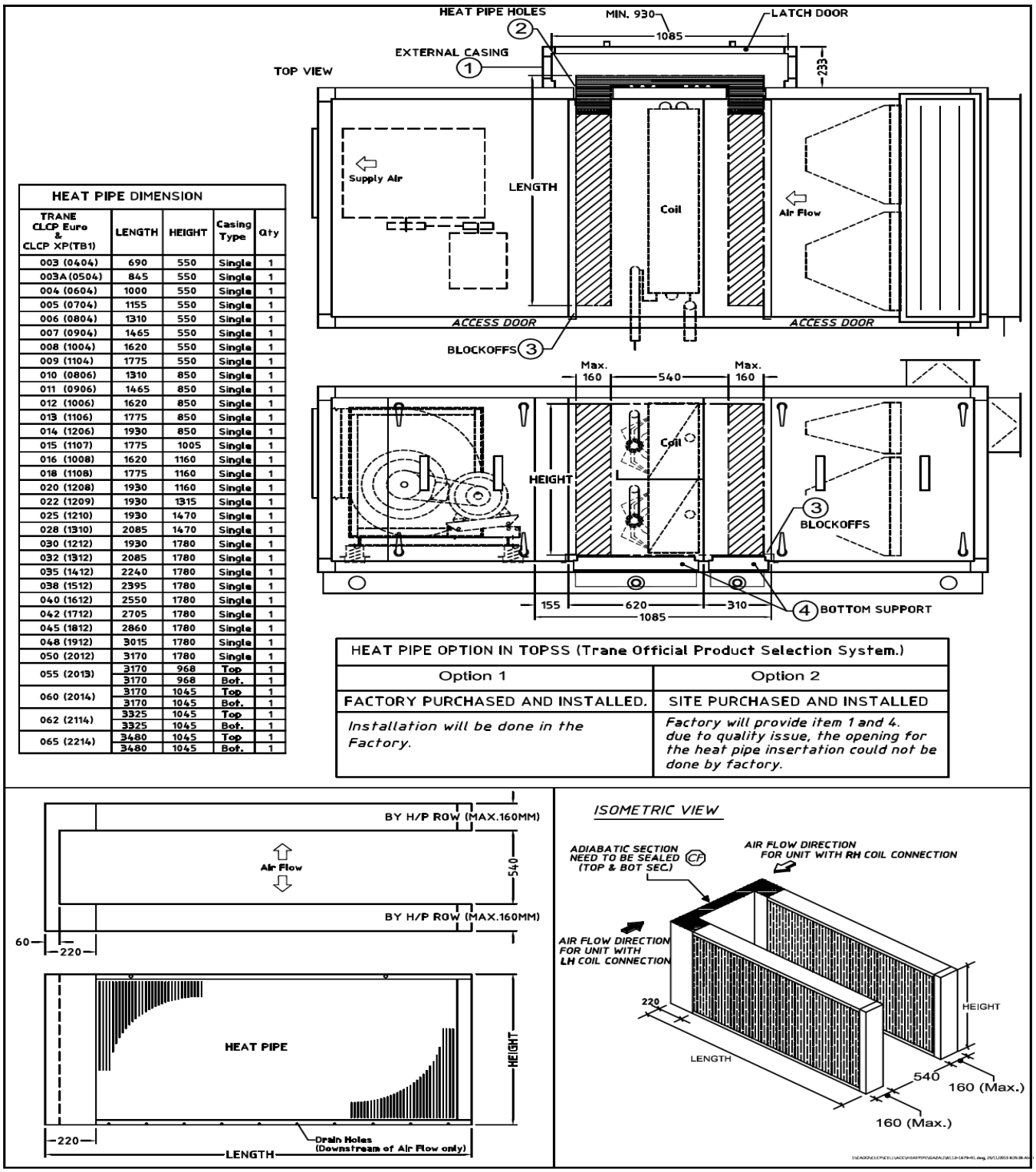
Model	Coil Face area M^2	Empty Section (Inlet)	Opening 'A' x 'B'	Unit Dimension		*Optimize 2*			*Optimize1*			*Standard Fan*			*Oversize 1*			*Oversize 2*		
				Width	Height	Fan size	Max. Motor frame no	Length	Fan size	Max. Motor frame no	Length	Fan size	Max. Motor frame no	Length	Fan size	Max. Motor frame no	Length	Fan size	Max. Motor frame no	Length
010 (0806)	0.89	310	620 X 465	1240	930				BNB 315	D112	1550	BNB 355	D132	1550	BNB 400	D160	1550			
011 (0906)	0.89	310	620 X 465	1395	930				BNB 315	D112	1550	BNB 355	D132	1550	BNB 400	D160	1550			
012 (1006)	1.15	310	620 X 620	1550	930				BNB 315	D112	1550	BNB 355	D132	1550	BNB 400	D160	1550			
013 (1106)	1.28	310	775 X 620	1705	930				BNB 355	D132	1550	BNB 400	D160	1550						
014 (1206)	1.42	310	775 X 620	1860	930				BNB 355	D132	1550	BNB 400	D160	1550						
015 (1107)	1.42	310	775 X 620	1705	1085				BNB 355	D132	1550	BNB 400	D160	1550						
016 (1008)	1.58	465	775 X 775	1550	1240				BNB 450	D160	1550	BNB 500	D160	1550	BNB 560	D180	1705			
018 (1108)	1.58	465	775 X 775	1705	1240				BNB 450	D160	1550	BNB 500	D160	1550	BNB 560	D180	1705			
020 (1208)	1.94	465	930 X 775	1860	1240				BNB 500	D160	1395	BNB 560	D180	1705	BNB 630	D180	1705			
022 (1209)	2.14	465	930 X 775	1860	1395	BNB 500	D160	1395	BNB 560	D180	1705	BNB 630	D180	1705	BNB 710	D200	1705			
025 (1210)	2.41	465	930 X 930	1860	1550				BNB 630	D180	1705	BNB 710	D200	1705	BNB 800	D225	1860			
028 (1310)	2.63	465	930 X 930	2015	1550				BNB 630	D180	1705	BNB 710	D200	1705	BNB 800	D225	1860			
030 (1212)	2.94	465	1085 X 930	1860	1860				BNB 630	D180	1705	BNB 710	D200	1705	BNB 800	D225	1860			
032 (1312)	3.20	465	1085 X 930	2015	1860				BNB 630	D180	1705	BNB 710	D200	1705	BNB 800	D225	1860			
035 (1412)	3.48	620	1085 X 1085	2170	1860	BNB 710	D200	1705	BNB 800	D225	1860	BNB 900	D250	1860	BNB 1000	D250	2015			
038 (1512)	3.48	620	1085 X 1085	2325	1860	BNB 710	D200	1705	BNB 800	D225	1860	BNB 900	D250	1860	BNB 1000	D250	2015			
040 (1612)	4.02	620	1240 X 1085	2480	1860				BNB 800	D225	1860	BNB 900	D250	1860	BNB 1000	D250	2015			
042 (1712)	4.02	620	1240 X 1085	2635	1860				BNB 800	D225	1860	BNB 900	D250	1860	BNB 1000	D250	2015			
045 (1812)	4.56	620	1395 X 1085	2790	1860				BNB 800	D225	1860	BNB 900	D250	1860	BNB 1000	D250	2015			
048 (1912)	4.83	620	1395 X 1085	2945	1860				BNB 800	D225	1860	BNB 900	D250	1860	BNB 1000	D250	2015			
050 (2012)	5.10	620	1395 X 1240	3100	1860				BNB 800	D225	1860	BNB 900	D250	1860	BNB 1000	D250	2015	BNB 1120	D280	2015
055 (2013)	5.46	620	1395 X 1240	3100	2015				BNB 800	D225	1860	BNB 900	D250	1860	BNB 1000	D250	2015	BNB 1120	D280	2015
060 (2014)	5.92	620	1550 X 1240	3100	2170	BNB 800	D225	1860	BNB 900	D250	1860	BNB 1000	D250	2015	BNB 1120	D280	2015	BNB 1250	D200	2015
																		BNB 1250	D280	2325
062 (2114)	6.23	620	1550 X 1395	3255	2170	BNB 800	D225	1860	BNB 900	D250	1860	BNB 1000	D250	2015	BNB 1120	D280	2015	BNB 1250	D200	2015
																		BNB 1250	D280	2325
065 (2214)	6.56	620	1550 X 1550	3410	2170				BNB 900	D250	1860	BNB 1000	D250	2015	BNB 1120	D280	2015	BNB 1250	D200	2015
																		BNB 1250	D280	2325
070 (2414)	7.18	620	1550 X 1550	3720	2170				BNB 900	D250	1860	BNB 1000	D250	2015	BNB 1120	D280	2015	BNB 1250	D200	2015
																		BNB 1250	D280	2325
080 (2614)	7.81	620	1705 X 1550	4030	2170				BNB 900	D250	1860	BNB 1000	D250	2015	BNB 1120	D280	2015	BNB 1250	D200	2015
																		BNB 1250	D280	2325
085 (2814)	8.44	620	1860 X 1550	4340	2170				BNB 900	D250	1860	BNB 1000	D250	2015	BNB 1120	D280	2015	BNB 1250	D200	2015
																		BNB 1250	D280	2325
090 (3014)	9.07	620	1705 X 1705	4650	2170				BNB 900	D250	1860	BNB 1000	D250	2015	BNB 1120	D280	2015	BNB 1250	D200	2015
																		BNB 1250	D280	2325
095 (3214)	9.70	620	1860 X 1705	4960	2170				BNB 1000	D250	2015	BNB 1120	D280	2015	BNB 1250	D200	2015			
															BNB 1250	D280	2325			
100 (3216)	11.04	775	2015 X 1860	4960	2480	BNB 1000	D250	2015	BNB 1120	D280	2015	BNB 1250	D200	2015	BNB 1400	D280	2480			
												BNB 1250	D280	2325						
110 (3217)	11.63	775	2015 X 1860	4960	2635	BNB 1000	D250	2015	BNB 1120	D280	2015	BNB 1250	D200	2015	BNB 1400	D280	2480			
												BNB 1250	D280	2325						
120 (3218)	12.23	775	2015 X 1860	4960	2790	BNB 1000	D250	2015	BNB 1120	D280	2015	BNB 1250	D200	2015	BNB 1400	D280	2480			
												BNB 1250	D280	2325						

Heat Recovery Wheel
Dimensional Data

HEAT RECOVERY DIMENSION CASING CHART

HRW Series(MS-200-1.9mm)		AHU Casing.				
					UNIT SIZE	
Model Number	Dimension (WXHXD)	LENGTH	WIDTH (Min)	MIN. HW Casing (Bot/Top)	TYPE A	TYPE B
HRW 500-MS200	700 X 700 X 295	620	775	0504/0504	003 thru 014	016
HRW 600-MS200	800 X 800 X 295	620	930	0604/0604	003 thru 014	016 thru 025
HRW 700-MS200	850 X 850 X 295	620	930	0604/0604	003 thru 014	016 thru 035
HRW 800-MS200	950 X 950 X 295	620	1085	0704/0704	003 thru 014	016 thru 048
HRW 900-MS200	1030 X 1030 X 295	620	1085	0704/0704	003 thru 014	016 thru 055
HRW 1000-MS200	1130 X 1130 X 295	620	1395	0904/0904	003 thru 014	016 thru 055
HRW 1100-MS200	1230 X 1230 X 295	620	1395	0904/0904	004 thru 014	016 thru 055
HRW 1200-MS200	1330 X 1330 X 295	620	1395	0904/0904	004 thru 014	016 thru 055
HRW 1300-MS200	1430 X 1430 X 295	620	1550	1005/1005	010 thru 014	016 thru 055
HRW 1400-MS200	1530 X 1530 X 295	620	1705	1105/1105	010 thru 014	016 thru 055
HRW 1500-MS200	1630 X 1630 X 295	620	1705	1105/1105	010 thru 014	016 thru 055
HRW 1600-MS200	1730 X 1730 X 325	775	1860	1206/1206	010 thru 014	016 thru 055
HRW 1700-MS200	1830 X 1830 X 325	775	1860	1206/1206	012 thru 014	016 thru 055
HRW 1800-MS200	1930 X 1930 X 325	775	2015	1306/1306	012 thru 014	016 thru 055
HRW 1900-MS200	2030 X 2030 X 325	775	2170	1407/1406	-	016 thru 055
HRW 2000-MS200	2130 X 2130 X 325	775	2170	1407/1407	-	016 thru 055
HRW 2200-MS200	2200 X 2200 X 325 (Full)	775	2480	1608/1608	-	016 thru 055
	2400 X 2400 X 460 (Half)					
HRW 2400-MS200	2480 X 2480 X 325 (Full)	775	2790	1809/1808	-	022 thru 055
	2600 X 2600 X 460 (Half)					
HRW 2600-MS200	2800 X 2800 X 460	775	2945	1909/1909	-	022 thru 055
HRW 2800-MS200	3000 X 3000 X 460	775	3100	2010/2009	-	025 thru 055
HRW 3000-MS200	3200 X 3200 X 460	775	3255	2111/2110	-	030 thru 055
HRW 3200-MS200	3400 X 3400 X 514	930	3565	2311/2311	-	030 thru 055
HRW 3400-MS200	3600 X 3600 X 514	930	3720	2412/2411	-	030 thru 055
HRW 3600-MS200	3800 X 3800 X 514	930	3875	2512/2512	-	048 thru 055
HRW 3800-MS200	4000 X 4000 X 514	930	4185	2713/2713	-	055

Heat Pipe
Dimensional Data



HEAT PIPE DIMENSION				
TRANE CLCP Euro & CLCP XP(TB1)	LENGTH	HEIGHT	Casing Type	Qty
003 (0404)	690	550	Single	1
003A (0504)	845	550	Single	1
004 (0604)	1000	550	Single	1
005 (0704)	1155	550	Single	1
006 (0804)	1310	550	Single	1
007 (0904)	1465	550	Single	1
008 (1004)	1620	550	Single	1
009 (1104)	1775	550	Single	1
010 (0806)	1310	850	Single	1
011 (0906)	1465	850	Single	1
012 (1006)	1620	850	Single	1
013 (1106)	1775	850	Single	1
014 (1206)	1930	850	Single	1
015 (1107)	1775	1005	Single	1
016 (1008)	1620	1160	Single	1
018 (1108)	1775	1160	Single	1
020 (1208)	1930	1160	Single	1
022 (1209)	1930	1315	Single	1
025 (1210)	1930	1470	Single	1
028 (1310)	2085	1470	Single	1
030 (1212)	1930	1780	Single	1
032 (1312)	2085	1780	Single	1
035 (1412)	2240	1780	Single	1
038 (1512)	2395	1780	Single	1
040 (1612)	2550	1780	Single	1
042 (1712)	2705	1780	Single	1
045 (1812)	2860	1780	Single	1
048 (1912)	3015	1780	Single	1
050 (2012)	3170	1780	Single	1
055 (2013)	3170	968	Top	1
	3170	968	Bot.	1
060 (2014)	3170	1045	Top	1
	3170	1045	Bot.	1
062 (2114)	3325	1045	Top	1
	3325	1045	Bot.	1
065 (2214)	3480	1045	Top	1
	3480	1045	Bot.	1

HEAT PIPE OPTION IN TOPSS (Trane Official Product Selection System.)	
Option 1	Option 2
FACTORY PURCHASED AND INSTALLED.	SITE PURCHASED AND INSTALLED
Installation will be done in the Factory.	*Factory will provide item 1 and 4. due to quality issue, the opening for the heat pipe insertation could not be done by factory.*

Ingersoll Rand (NYSE:IR) advances the quality of life by creating comfortable, sustainable and efficient environments. Our people and our family of brands—including Club Car®, Ingersoll Rand®, Thermo King® and Trane®—work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; and increase industrial productivity and efficiency. We are a $13 billion global business committed to a world of sustainable progress and enduring results. For more information, visit www.ingersollrand.com.

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We are committed to using environmentally conscious print practices that reduce waste.