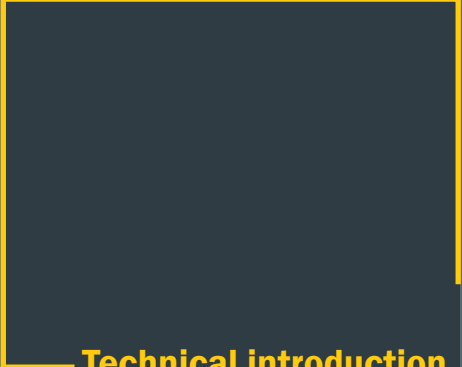
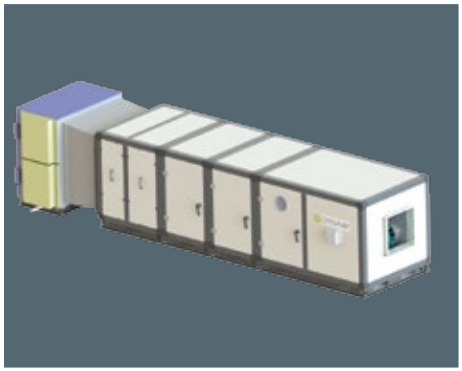


# DEM RANGE

## Commercial Kitchen Exhaust System



Technical introduction



DYNAIR®



DYN AIR<sup>®</sup> is the industrial division of Maico Italia S.p.A. and is a well known brand name at global level in the industrial ventilation and plant engineering sector. Technological expertise, high production capacities, strong research and investment policies together with a personalized back-up service focused on customer needs have, for over 30 years, been the qualities that distinguish our company: Italian excellence renowned throughout the world and an industrial concern fortified by belonging to Maico Holding GmbH, the German group that leads the way in the ventilation industry.

### Experience and high technology at your service

Living in a market in continuous evolution, DYN AIR<sup>®</sup> bases its force on a step by step project follow-up in close collaboration with the customer to create tailored and highly reliable solutions.

With the new and wide range of kitchen exhaust units (DEM), Dynair has diversified its current range of products to meet customers requirement in HVAC field. DYN AIR's products follow stringent policy of research and development. With safety as a priority during production, all products use top quality components that meet (\*ETL relevant as per UL 710 standards.)  
\*Applicable only for DYN AIR model DEV.

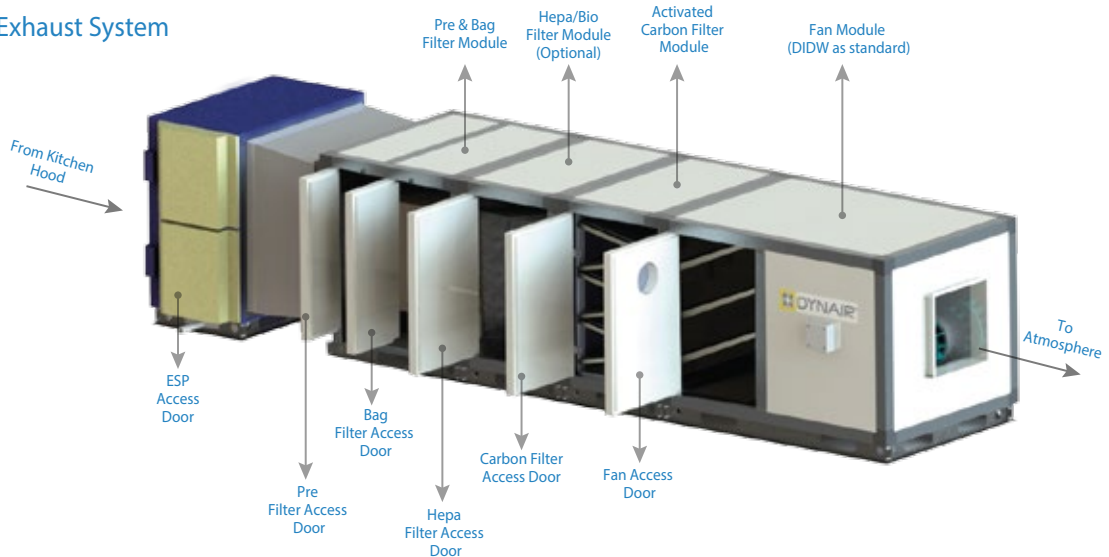
Our Total Quality policy is ensured by standard working procedures, with tests and inspections during all production phases.



Maico Ventilation Pvt. Ltd is ISO 9001: 2015 company certified.

With our production capability, wide range of finished products and components warehouse, we ensure quick delivery to all our customers. Our staff is trained and dedicated to provide before and after technical plus sales services.

### DEM Range Commercial Kitchen Exhaust System



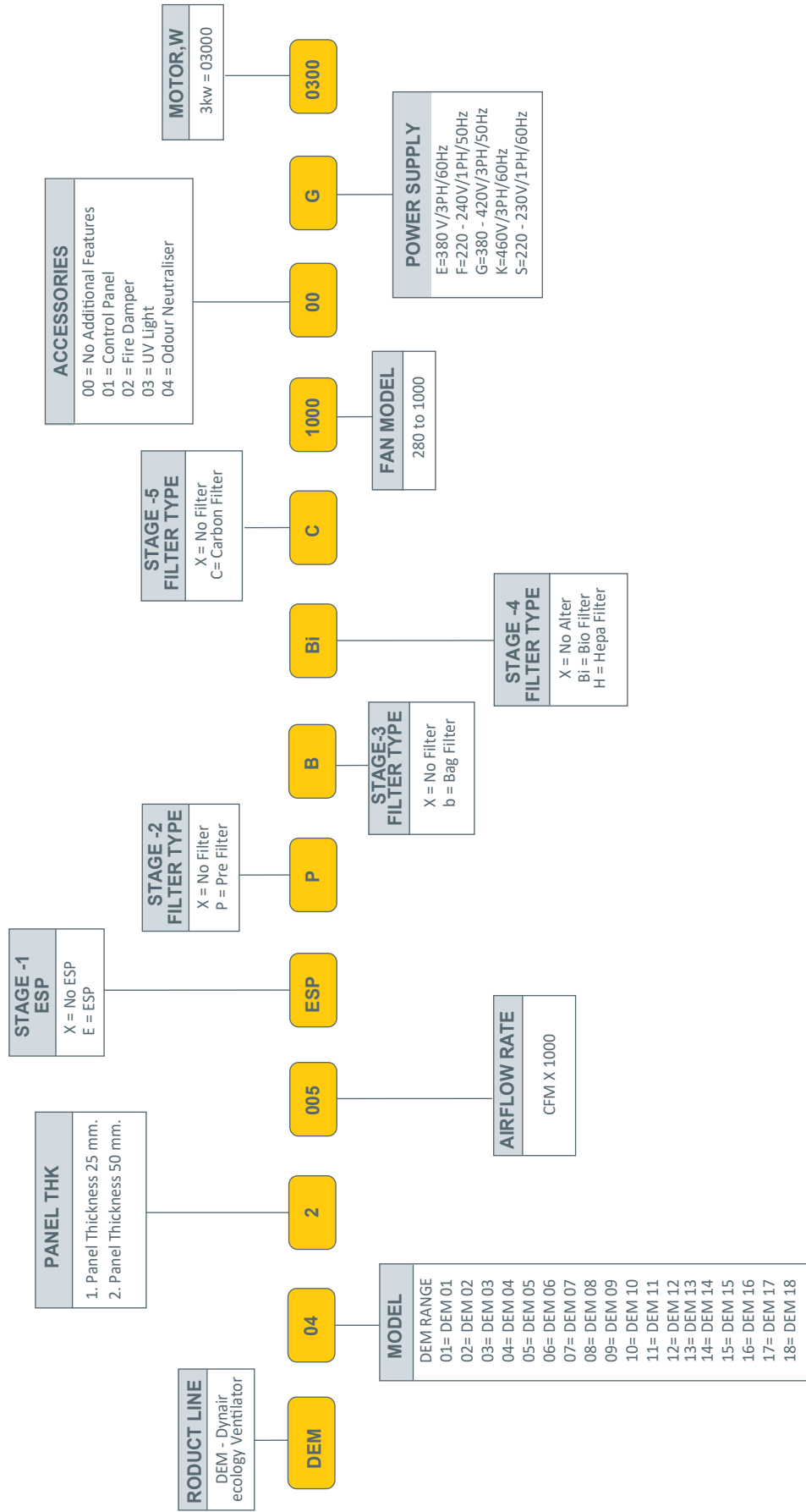
### GENERAL DESCRIPTION

An efficient & economical solution to exhaust contaminated air from kitchen hood.

They are suitable for conveying kitchen exhaust air, upto a maximum temperature of 80°C.

The removal of grease from the exhaust air flow is a very important part of commercial kitchen operation. If there is no proper grease trap at kitchen hood it could:

1. Increase fire hazard at exhaust duct.
2. Increase the frequency of expensive duct cleaning.
3. Create bad odor in or near the restaurant surroundings.
4. Increase the collection of grease on the roof top which could cause deterioration of roof material (Filter Bank), These problems can be greatly reduced through the use of proper grease trap device at kitchen hood itself.



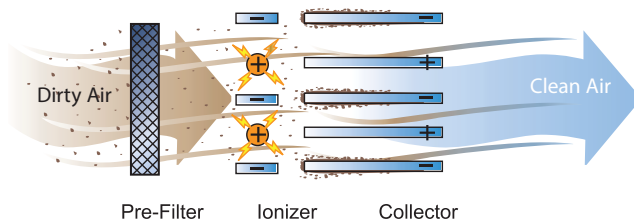
## FILTRATION SYSTEM:

### A. First stage of filtration

Three stage filtration systems, which includes:

#### Stage 1 : Electrostatic Precipitator

Air is drawn by the motor/blower through a filter bank which traps large dust particles. The remaining particles, some as small as 0.01 microns, pass into a strong electrical field (ionizing section) where the particulate receives 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 the same polarity as the particles, which repel, while the interleaving plates are grounded, which attract and collect.



#### Stage 2 : Polyfibre Pleated Filter:

1.	EN 779	: G4
2.	Arrestance (ASHRAE 52.1)	: 90-94%
3.	MERV Rating (ASHRAE 52.2)	: MERV8
4.	Eurovent	: EU4

#### Stage 3 : Synthetic Bag Filter:

1.	EN 779	: F9
2.	Arrestance (ASHRAE 52.1)	: 99%
3.	MERV Rating (ASHRAE 52.2)	: MERV15
4.	Eurovent	: EU9

#### Stage 4 : Bio-Hepa Filter (Optional)

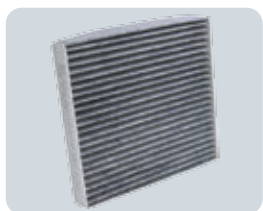
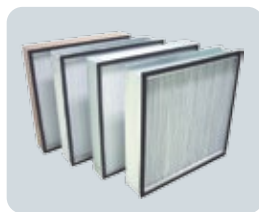
1.	EN 779	: H14
2.	Arrestance (ASHRAE 52.1)	: 99.995%
3.	MERV Rating (ASHRAE 52.2)	: NA
4.	Eurovent	: EU14

### B. Second stage of filtration

#### S4: Carbon Filter:

Durable non-woven polyester base media, impregnated with activated carbon.

The unique combination of high quality activated carbon and polyester affords odour and particulate trapping efficiency while maintaining excellent airflow properties.



## FAN SECTION:

- DEM series are with DIDW, fan which allows obtaining two orientations (0° & 90°) with the same fan.
- The key features associated with DEM:
  - AMCA certified fan for air and sound
  - PPGI casing, suitable for outdoor installation
  - Backward curved impellers are made of cold-rolled sheet steel
  - Statically & dynamically balanced
  - Fan & motor assembly mounted on a common base frame and isolated from the main structure by anti vibration mounts and flexible joint on inlet and outlet (optional)
  - DIDW backward curved type fan (SISW Optional)
  - Standard accessories with inspection door & drain plug for periodic maintenance
  - Powder coated impeller, (non-sticky)

## CONSTRUCTION:

- Filter section: Pentapost design & have strong three way angle joints of reinforced nylon corners to form a rigid frame structure. Rigid frame work comprises an assembly of externally chamfered extruded aluminium profile & nylon corner joints. Inner & outer skin: Standard pre-coated GI sheet, the double skin is to retain the insulation surface clean & to have a smooth surface.
- Asynchronous three-phase motors according to international standards IEC 60034, IEC 60072, EMC2004/108/CE, LVD2006/95/CE, CE marked, IP55, class F, suitable to S1 service (continuous working at constant load).

## OPTIONAL FEATURES:

- Spray system works by producing a fine atomized mist that is delivered through strategically placed nozzles in the stack, which actively reduces odour, neutralizing it before it leaves the stack.
- UV filtration - UVC in DEM are another option in odour & grease control, the most effective method common today for eliminating unpleasant odours, grease & oil mist from kitchen hood.
- Electrostatic precipitator with wash module

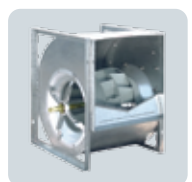
## Features & benefits Of UV filtration -

1. Quick and easy snap in installation.
2. No noise.
3. No pressure drop.
4. Easy maintenance.
5. High output green lamps contain < 8 mg. of mercury.
6. Water tight connections for lamp and wiring.
7. Produce no Ozone or other contaminants.



## ACCESSORIES:

- Control panel (motor starter, status panel for filter bank)
- Fire damper
- Inlet/outlet flexible connectors
- Anti vibration supports
- Outlet flange
- Inverter speed controllers
- Weatherproof canopy
- Belt protection



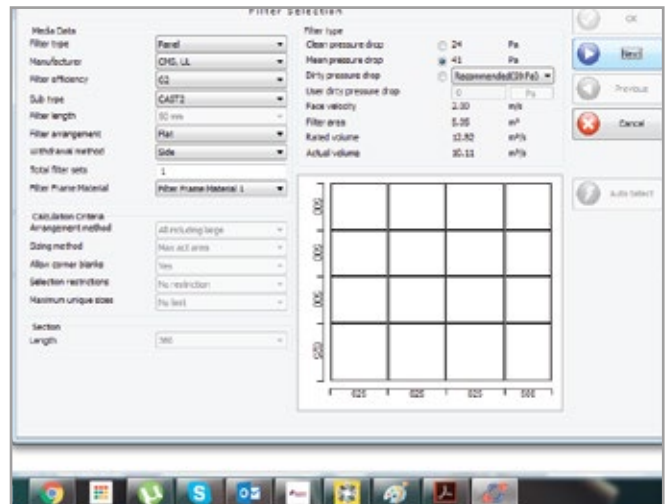
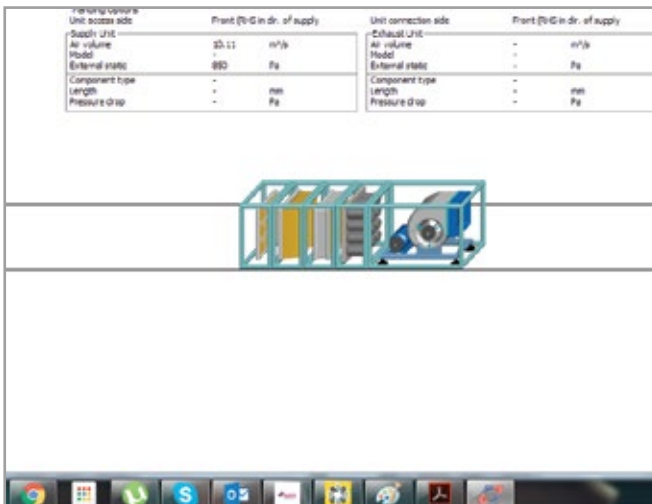
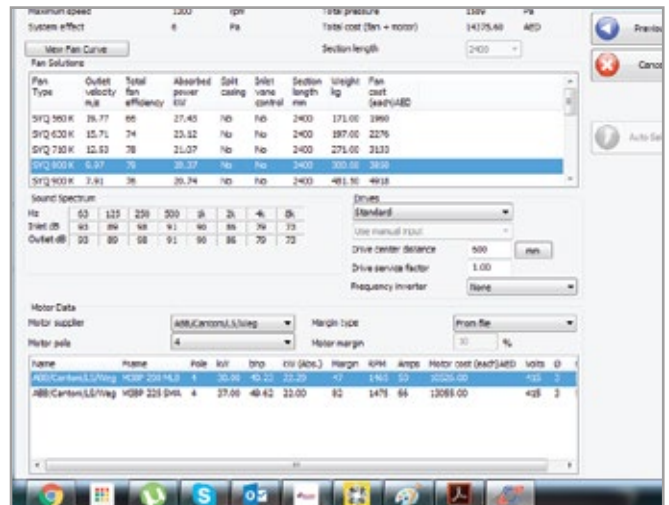
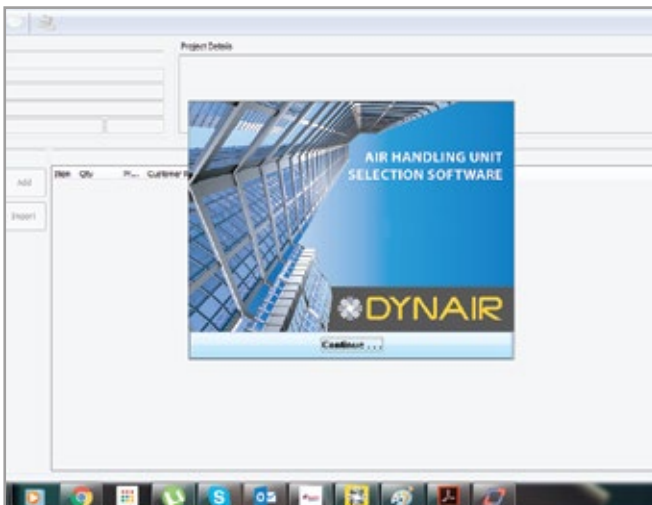


## Ecology Unit Selection Software:

DYN AIR's Ecology Unit selection software provides the complete details of design and submittal generated for the Ecology Units. The system is integrated so as to eliminate wherever possible the re-entry of information and thereby minimize data entry errors. The program is user-friendly and maintained wherever practical for the customers.

The software intelligently selects the optimum requirement of Ecology Units from our standard database and selects the optimum selection as per the customers' specifications.

The software will carry out the calculations and generate sufficient information to have options available within the program.



**DYNAIR®**  
Date: 8/14/2016

**Technical Specification**

Project name : Salwa Beach Resort Doha      WinTADS Lite - 1.10.00042.0  
Quotation no : 0194-15-00 / 001

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**CUSTOMER DETAILS**

Customer Name	Customer Number		
Address			
Town			
Postcode			
Country			

**GENERAL DATA**

Product	Ecology Unit	Customer reference	ECU PS-01			
Number off	1	Unit configuration	Inline			
		Location	None			
		Roof type	None			

Total weight (each)      kg      582.09  
Outdoor design temperature      °C      0.0

Frequency	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	dB(A)
Radiated casework SWL	52	48	74	66	63	55	33	73

**PANEL DATA**

Panel internal finish	Standard	Panel external finish	Standard
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**CASING DATA**

Base frame material	Galvanised 1.5mm C-channel	Base frame height	mm      80
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**SUPPLY DATA**

Type	DEM02	Air volume	m³/s      1.00
External static	623	Unit velocity	m/s      1.02
Internal skin material	GI 0.5mm	External skin material	Pre Painted GI 0.5mm
Panel type	25 mm		
SFPe	2.00	SFPv	kW/m³/s      1.82

Operating sound power level

Frequency	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	dB(A)
Inlet dB	90	83	87	84	80	78	70	89
Outlet dB	90	83	87	84	80	78	70	89

Page 1 of 3

**DYNAIR®**  
Date: 2/6/2013

**Technical Specification**

Project name :      WinTADS Lite - 1.2  
Quotation no : 0363-13-00 / 009

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**SINGLE MIXING SECTION**      Length: 725mm      Pressure drop: 21Pa

Recirc opening			
Opening, width x height	mm      2150 x 1450	Damper torque	Nm
Damper motor			
Fresh air opening			
Opening, width x height	mm      2150 x 225	Damper torque	Nm
Damper motor			

**COMBINED FILTER SECTION**      Length: 550mm      Pressure drop: 301Pa

**Pre-filter**

Manufacturer	General Filters	Face velocity	m/s      2.13
Sub type	CFA-W	Initial pressure drop	Pa      65
Filter class	G4	Final pressure drop	Pa      137
Media length		Media length	mm      48

**Final filter**

Manufacturer	General Filters	Initial pressure drop	Pa      95
Sub type	ABS70-50	Final pressure drop	Pa      303
Filter class	F7	Media length	mm      380

**Combined filter**

Withdrawal method	Side	Filter size: Qty x W x H	mm      4 x 400 x 400
			mm      2 x 400 x 500
			mm      4 x 625 x 400
			mm      2 x 625 x 500

ACCESS

Access type	Hinged door	Access side	Right
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**HEPA FILTER SECTION**      Length: 700mm      Pressure drop: 456Pa

Manufacturer	AAF	Face velocity	m/s      2.55
Sub type	AstroCel III NG	Initial pressure drop	Pa      407
Filter class	H12	Final pressure drop	Pa      559
Media length		Media length	mm      292
Withdrawal method	Side	Filter size: Qty x W x H	mm      6 x 610 x 610

ACCESS

Access type	Hinged door	Access side	Right
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**PLENUM SECTION**      Length: 800mm      Pressure drop: 6Pa

**CARBON FILTER SECTION**      Length: 200mm      Pressure drop: 309Pa

Manufacturer	General Filters	Face velocity	m/s      2.57
Sub type	CCA18	Initial pressure drop	Pa      128
Filter class		Final pressure drop	Pa      450
Media length		Media length	mm      18
Withdrawal method	Side	Filter size: Qty x W x H	mm      16 x 237 x 583

**PLENUM SECTION**      Length: 500mm      Pressure drop: 6Pa

Page 2 of 3

**DYNAIR®**  
Date: 2/6/2013

**Technical Specification**

Project name :      WinTADS Lite - 1.2  
Quotation no : 0363-13-00 / 009

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**FAN SECTION**      Length: 1650mm      Pressure drop: 6Pa

Fan type	SYQ 560 K	Fan arrangement	Single
Air volume	m³/s      5.86	Motor x 1	Run
Fan outlet velocity	m/s      11.12	Installed motor power	kW      22.00
Required fan speed	RPM      2043	Max speed	RPM      2400
Motor type	ABB	Motor speed	RPM      1485
External static pressure	Pa      750	Supply	V/0/Hz      415/3/50
Total static pressure	Pa      2121	Current	A      38.8
Dynamic pressure	Pa      74	Motor efficiency	%      91
Fan absorbed power	kW      16.61	Absorbed motor power	kW      18.25
Total pressure	Pa      2196		
Efficiency	%      75		
Fan pulley	BSLAHP144	Motor pulley	BSLAHP147
Fan bush	BSLAHTB005	Motor bush	BSLAHTB006
Belt length	mm      1582	Number of belts	2

Fan sound data SWL

Frequency	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
Inlet dB	88	86	84	95	86	83	79	75
Outlet dB	88	86	84	95	86	83	79	75

**MOTOR EXTRAS**

1x Motor Extra 1			
ACCESS			
Access type	Hinged door	Access side	Right
EXTRAS			
1 x Light switch		1 x Portford	

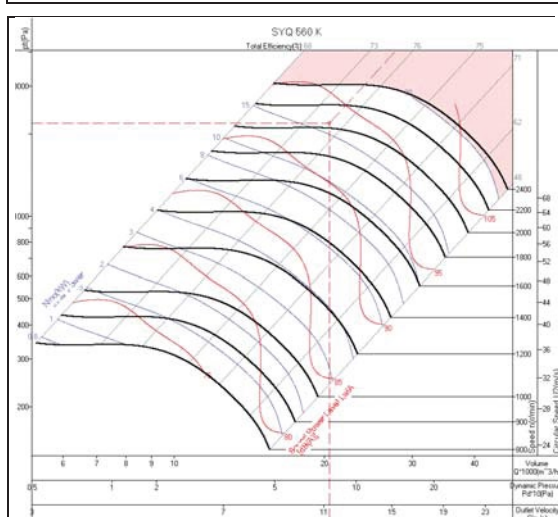
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**DYNAIR®**  
Date: 2/6/2013

**Fan Curve**

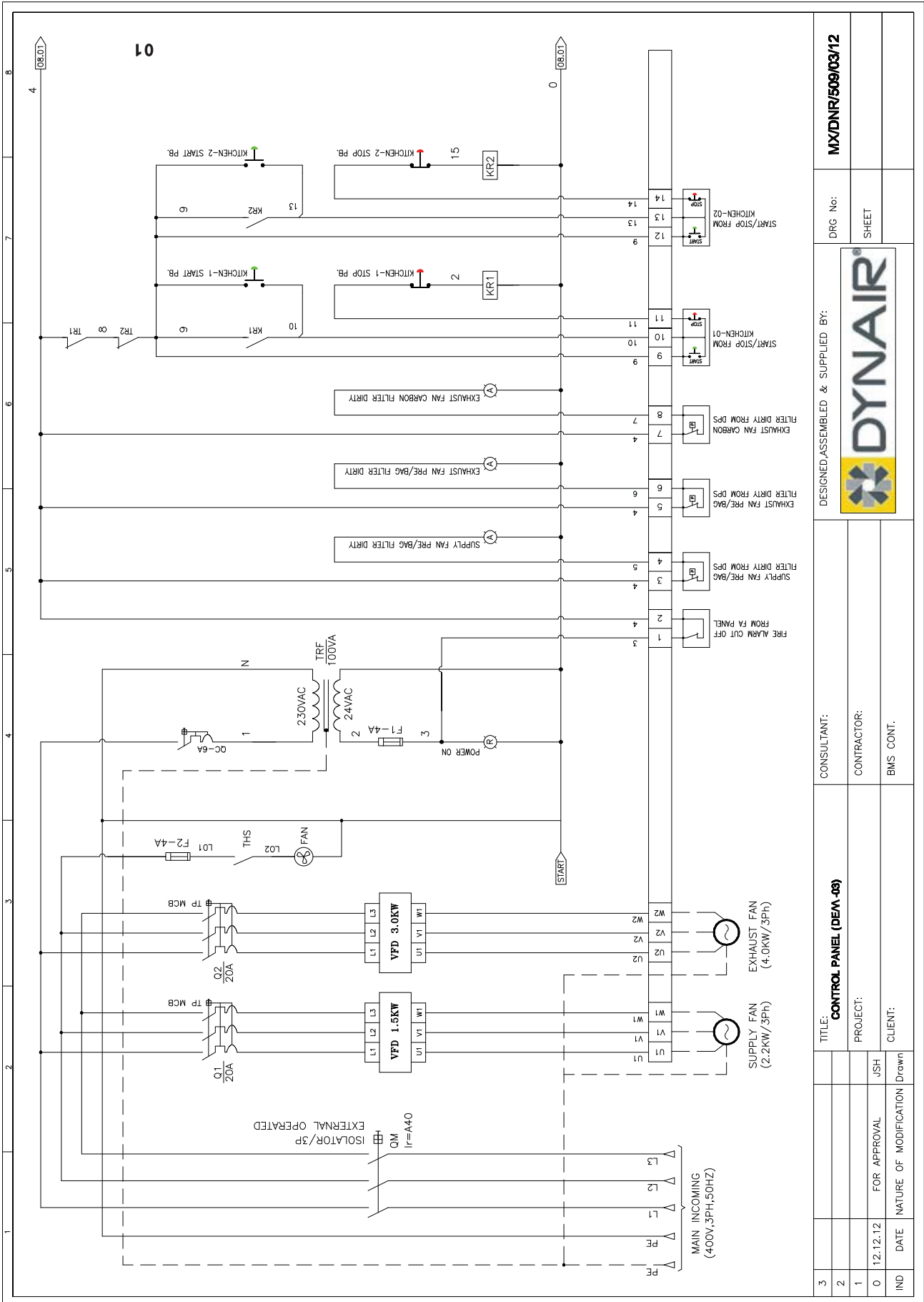
Project name :      WinTADS Lite - 1.2  
Quotation no : 0363-13-00 / 009

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# Standard Control Panel Schematic (Control)

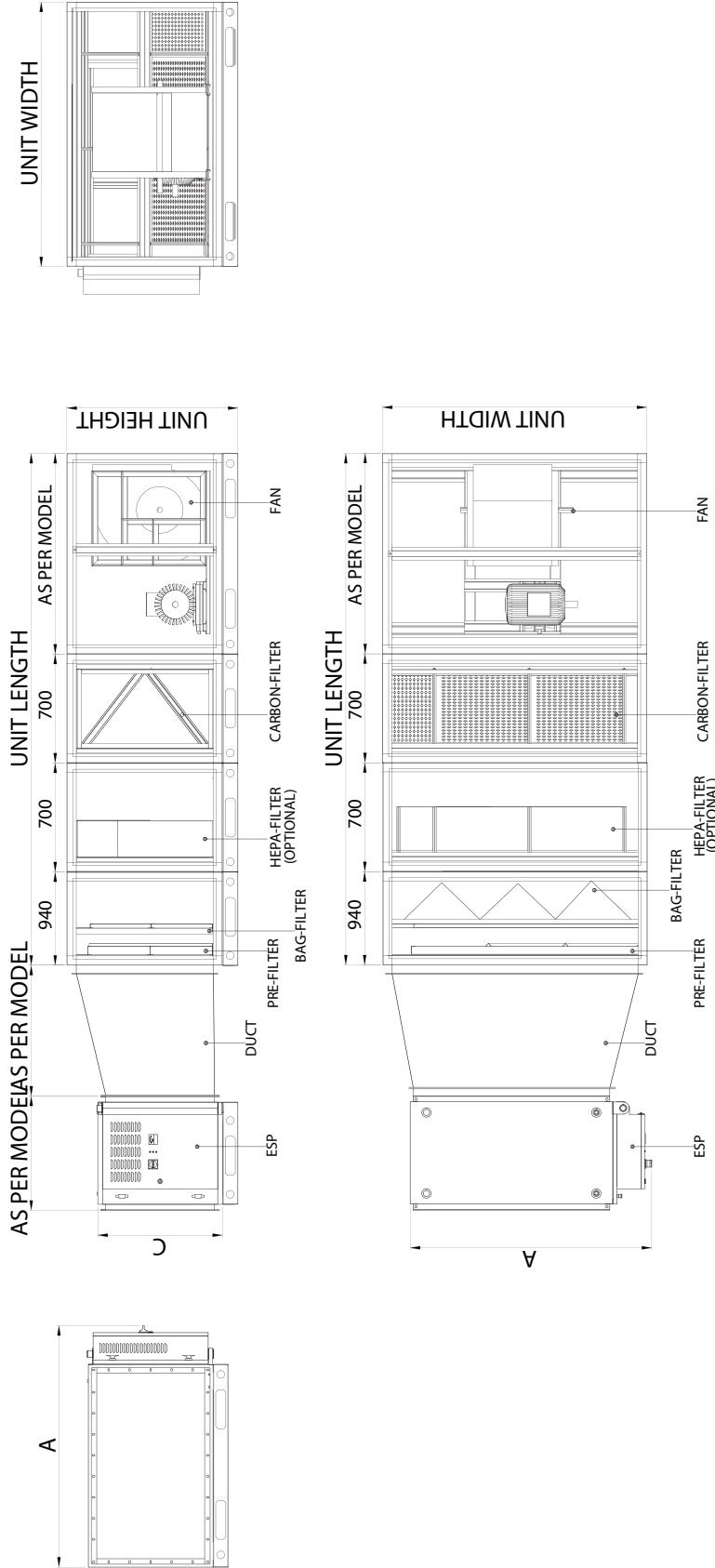


3	TITLE:	CONTROL PANEL (DEVA-009)	CONSULTANT:	DESIGNED, ASSEMBLED & SUPPLIED BY:		DRG No.:	MX/DNR/509/03/12
2	PROJECT:		CONTRACTOR:			SHEET	
1	DATE:	12.12.12	FOR APPROVAL:	JSH			
0	NATURE OF MODIFICATION:		CLIENT:				
IND	DRAWN:						





Project name: STD. DRG. MAICO  
 Quotation No:



Scale: not draw to scale

Comments: A, B & C dimensions as per ESP

Unit No:  
 Unit Desc: DEM STD. DRG WITH ESP FOR ALL MODEL

Project Name: STD. DRG. MAICO  
 Qty Units: 1 No./UNIT  
 Weight:



DYNAIR®  
 DATE: 29/03/16  
 Engineer: KS

DEM Model	Airflow Rate		Height	Width	ESP	ESP DUCT	Pre-Filter			Carbon filter	Blower & Motor (DIDW)	Blower & Motor (DIDW) with UV/light
	CFM	CMH					L3	L4	L5			
DEM-1	1500	2549	800	850	Y2500 x 1 635x680x534	500	L3	L4	L5	L6	L7	L8
DEM-2	2000	3398	900	1200	Y5000 x 1 635x1230x534	500	360	940	700	700	950	1250
DEM-3	2500	4248	950	1200	Y5000 x 1 635x1230x534	500	360	940	700	700	950	1250
DEM-4	3000	5097	950	1650	Y5000 x 1 635x1230x534	500	360	940	700	700	1100	1400
DEM-5	3500	5947	950	1675	Y7500A x 1 635x1664x534	500	360	940	700	700	1100	1400
DEM-6	4000	6796	1000	1700	Y7500A x 1 635x1664x534	500	360	940	700	700	1265	1565
DEM-7	5000	8495	1050	2150	Y5000 x 2 635x1230x1068	800	360	940	700	700	1265	1565
DEM-8	6000	10194	1650	1700	Y5000 x 2 635x1230x1068	800	360	940	700	700	1400	1700
DEM-9	7500	12743	1650	1725	Y7500A x 2 635x1664x1068	800	360	940	700	700	1650	1950
DEM-10	10000	16990	1800	2150	Y7500A x 3 635x1664x1602	800	360	940	700	700	1760	2060
DEM-11	12000	20388	1800	2600	Y7500A x 3 635x1664x1602	800	360	940	700	700	1760	2060
DEM-12	15000	25485	1800	2625	Y7500A x 4 635x3328x1068	800	360	940	700	700	2000	2300
DEM-13	18000	30582	1800	2650	Y7500A x 4 635x3328x1068	800	360	940	700	700	2100	2400
DEM-14	20000	33980	2300	2600	Y7500A x 6 635x3328x1602	800	360	940	700	700	2100	2400
DEM-15	24000	40776	2300	2600	Y7500A x 6 635x3328x1602	800	360	940	700	700	2250	2550
DEM-16	30000	50970	2450	2600	Y7500A x 8 635x3328x2136	800	360	940	700	700	2400	2700
DEM-17	35000	59465	3350	2600	Y7500A x 8 635x3328x2136	800	360	940	700	700	2400	2700
DEM-18	40000	67960	3350	2600	Y7500A x 10 635x3328x2670	800	360	940	700	700	2700	3000

Note :-

- 1) All Dimensions are in mm.
- 2) Lengths Shown are of Individual Module.
- 3) Please consider these dimension s for 25mm panel.
- 4) Add 100 mm in the Ecology unit height for base channel.
- 5) Dynair reserve the right, while leaving the essential characteristics the same, to modify the data, photograph and anything else shows in the above without prior warning.



Code: DEM/01/17

Maico Ventilation Pvt. LTD  
Plot I-02, Part-1, Khed City, Rajgurunagar, Pune – 410505, Maharashtra, India

[www.maico.co.in](http://www.maico.co.in)  
[enquiry@maico.co.in](mailto:enquiry@maico.co.in)

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