

DEV RANGE

Commercial Kitchen Exhaust System



ETL CLASSIFIED



Intertek

CONFORMS TO
UL STD 710

DYNIAIR® 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, DYNIAIR® 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 (DEV), Dynair has diversified its current range of products to meet customers requirement in HVAC field. DYNIAIR'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.

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



Maico Gulf is ISO 9001: 2015, ISO 14001: 2015, OHSAS 18001: 2007 company certified.

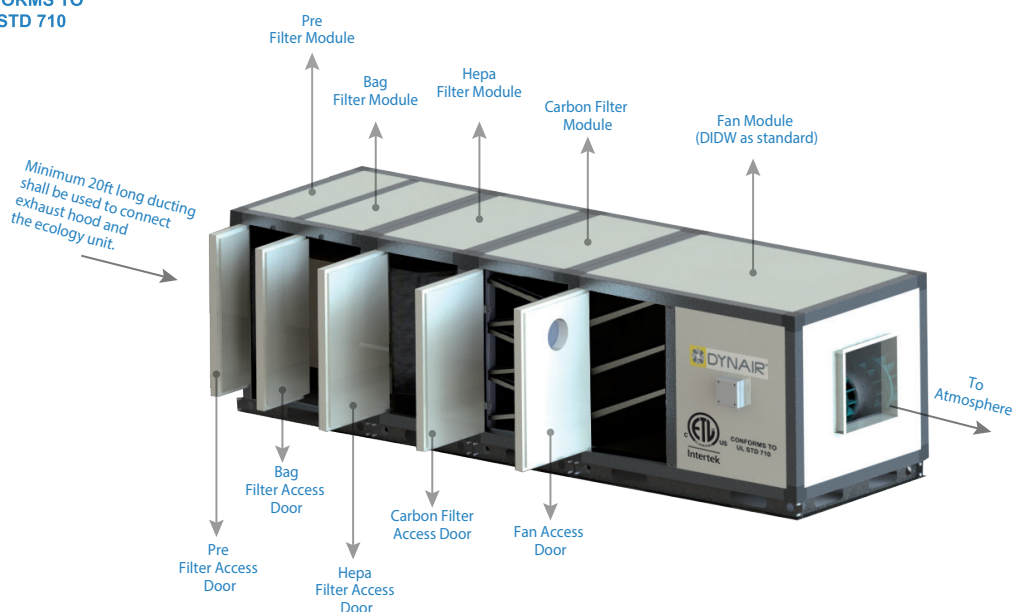
With our production capability, wide range of finished products and components warehouse, we ensure quick delivery to all our customers. Our staff is trained and dedicated to provide before and after technical plus sales services.

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GENERAL DESCRIPTION

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.

A UL 710 tested Ecology unit ensures to provide the best protection to your customers, employees and property when selecting your Ecology unit.

UL 710 TESTING REQUIREMENTS

Section 34 - Temperature Test.

1. An appliance is set below the hood/duct and adjusted to the desired surface temperature (varies depending on appliance).
2. The appliance is brought to equilibrium (fairly quickly).
3. The hood/duct components cannot rise by more than a maximum of 480°F for galvanized steel and 1310°F for 430 stainless steel.

Section 35 – Cooking Smoke and Flare- Up Test.

1. No evidence of smoke or flame escaping from the hood/duct is allowed.
2. The air exhaust rate is set to the minimum amount desired by the equipment manufacturer.
3. The appliance is brought to equilibrium and food product containing fat is cooked.
4. This is commonly known as a Capture and Containment Test.
5. It is used for determining acceptable minimum exhaust rates for kitchen hoods — not for grease ducts.

Section 36 – Abnormal Flare – Up Test.

1. The desired hood exhaust rate is to be established.
2. One pint of vegetable oil is brought to ignition on top of an appliance and below the test hood.
3. The vegetable oil is left to burn out completely.
4. The exhaust airstream cannot exceed 375°F and flames cannot enter the hood exhaust collar.
5. Hood parts shall not be damaged such that they present an electrical or fire risk.

Section 37 – Fan - Failure Test.

1. This test is the same as the Abnormal Flare Up Test, except the exhaust fan is not operational.
2. One pint of vegetable oil is brought to ignition on top of an appliance and below the test hood.
3. The vegetable oil is left to burn out completely.
4. The exhaust airstream cannot exceed 375°F and flames cannot enter the hood exhaust collar.
5. Hood parts shall not be damaged such that they present an electrical or fire risk.

Section 38 – Fire Test.

During the test flame shall not enter the test collar connected to the exhaust hood. Parts of the exhaust hood, including bodies, shelving, framing, and dampers, shall not warp or otherwise be damaged to an extent that results in the product developing a risk of fire or electric shock in continued use.

Section 45 – Overvoltage and Undervoltage Operation Test.

The operating parts and electronic circuits of a control unit shall be able to withstand 110 percent of its rated voltage continuously without damage during the normal operating condition, and the control unit shall operate successfully during the normal operating condition at the increased voltage. It shall also operate successfully at 85 percent of its rated voltage.

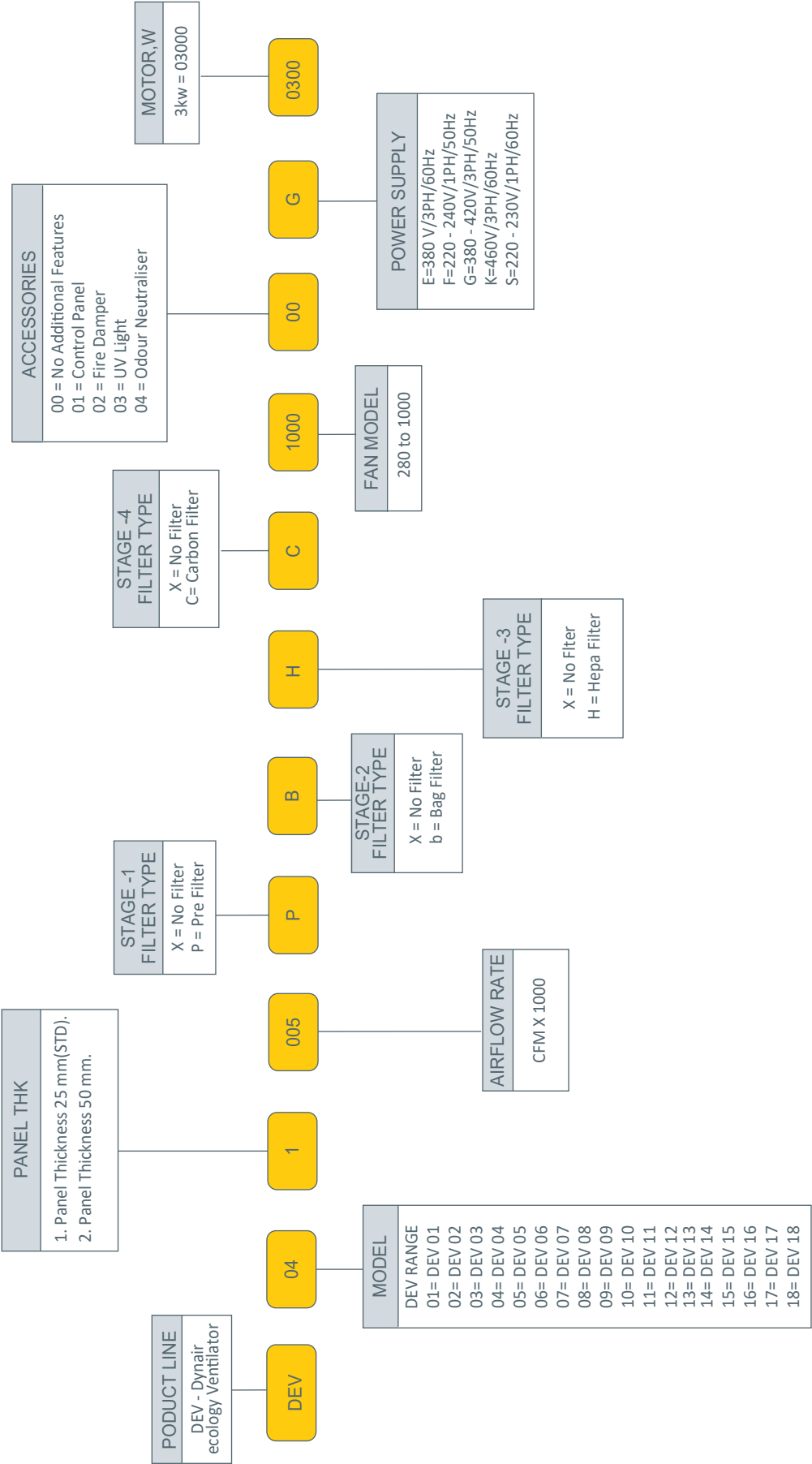
Section 46 – Dielectric Voltage - Withstand Test.

A unit shall withstand, without breakdown for a period of 1 minute, the application of a 60 hertz potential as follows: 1000 volts plus twice rated voltage is applied between high-voltage live parts and dead metal parts

By specifying an Ecology Unit with UL 710 Listing you can be assured that the unit will withstand a harsh operating conditions and provide you with the safest Ecology unit in the industry.



intertek Total Quality Assured.		AUTHORIZATION TO MARK									
<p>This authorizes the application of the Certification Mark(s) shown below to the models described in the Product(s) Covered section when made in accordance with the conditions set forth in the Certification Agreement and Listing Report. This authorization also applies to multiple listed model(s) identified on the correlation page of the Listing Report.</p> <p>This document is the property of Intertek Testing Services and is not transferable. The certification mark(s) may be applied only at the location of the Party Authorized To Apply Mark.</p>											
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Country: UAE Contact: Mr. Tanmoy Kumar Choudhury Mr. Saurabh Bhatia Phone: +971 7 2589000	Country: UAE Contact: Mr. Tanmoy Kumar Choudhury Mr. Saurabh Bhatia Phone: +971 7 2589000										
FAX: +971 7 2589001 Email: tanmoy@maico.ae saurabh@maico.ae	FAX: +971 7 2589001 Email: tanmoy@maico.ae saurabh@maico.ae										
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<p style="text-align: center;">Intertek Testing Services NA Inc. 545 East Algonquin Road, Arlington Heights, IL 60005 Telephone 800-345-3851 or 847-439-5667 Fax 312-283-1672</p>											
<table border="1"> <tr> <td>Standard(s):</td> <td>Exhaust Hoods For Commercial Cooking Equipment [UL 710:2012 Ed.6+R05Nov2013]</td> </tr> <tr> <td>Product:</td> <td>Commercial Kitchen Pollution Control Unit</td> </tr> <tr> <td>Brand Name:</td> <td>Dynair Ecology Unit</td> </tr> <tr> <td>Models:</td> <td>DEV- followed by 01 to 16; followed by -1 or -2; followed by -001 to -999; followed by -X or -P; followed by -X or -E; followed by -X, -B or -H; followed by -X or -E; followed by -X or -C; followed by -0280 to -1000; followed by -00 to -06; followed by -E, -F, -G, -K, -S or -T; followed by -00001 to -99999</td> </tr> </table>				Standard(s):	Exhaust Hoods For Commercial Cooking Equipment [UL 710:2012 Ed.6+R05Nov2013]	Product:	Commercial Kitchen Pollution Control Unit	Brand Name:	Dynair Ecology Unit	Models:	DEV- followed by 01 to 16; followed by -1 or -2; followed by -001 to -999; followed by -X or -P; followed by -X or -E; followed by -X, -B or -H; followed by -X or -E; followed by -X or -C; followed by -0280 to -1000; followed by -00 to -06; followed by -E, -F, -G, -K, -S or -T; followed by -00001 to -99999
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FILTRATION SYSTEM:

STAGE 1 : ALUMINUM FILTER:

- | | |
|------------------------------|----------|
| 1. EN 779 | : G2 |
| 2. Arrestance (ASHRAE 52.1) | : 60-80% |
| 3. MERV Rating (ASHRAE 52.2) | : MERV4 |
| 4. Eurovent | : EU2 |

STAGE 2 : SYNTHETIC BAG FILTER:

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

STAGE 3 : HEPA FILTER

- | | |
|------------------------------|-----------|
| 1. EN 779 | : H14 |
| 2. Arrestance (ASHRAE 52.1) | : 99.999% |
| 3. MERV Rating (ASHRAE 52.2) | : NA |
| 4. Eurovent | : EU14 |

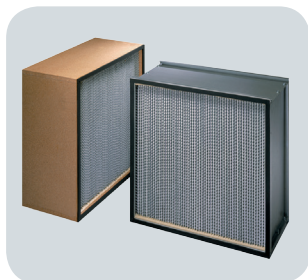
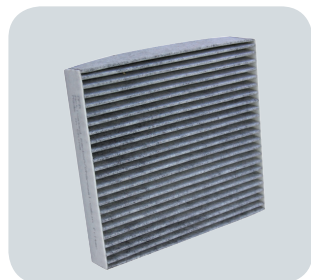
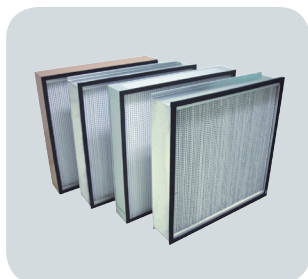
STAGE 4 : CARBON FILTER

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:

- DEV series are with DIDW fan which allows obtaining two orientations (0° & 90°) with the same fan.
- The key features associated with DEV
- AMCA certified fan for air, sound and FEG.
- 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.
- DIDW backward curved type fan (SISW optional).
- Standard accessories with inspection door and drain plug for periodic maintenance.
- Powder coated impeller, (non-sticky).

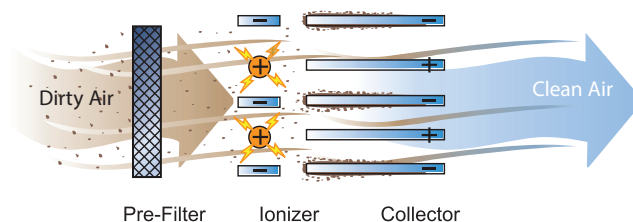


CONSTRUCTION:

- Cabinet section: Inner skin G.I 0.9 and Outer skin pre painted G.I 0.9 with 25mm PUF insulation and density of 42 kg/m3.
- 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, UR marked, IP55, class F, suitable to S1 service (continuous working at constant load).

OPTIONAL FEATURES:

- **Odour Neutraliser** - Odour Neutraliser 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 DEV are another option in odour & grease control, the most effective method common today for eliminating unpleasant odours, grease & oil mist from kitchen hood.
- **UL867 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.



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.



ACCESSORIES:

- Control panel (motor starter, status panel for filter bank)
- Fire damper
- Weatherproof canopy
- Belt protection

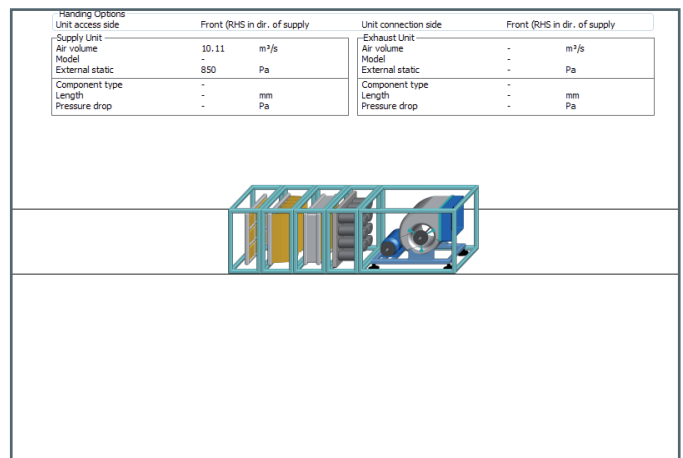
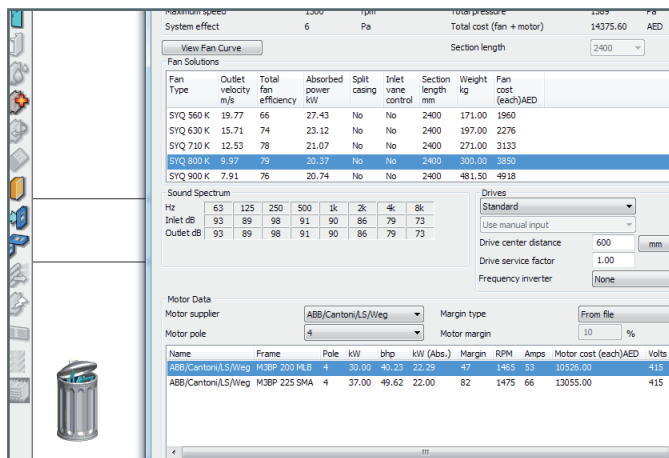
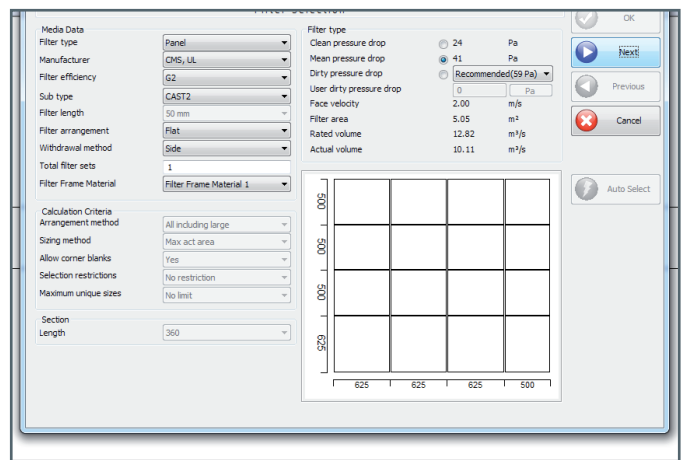
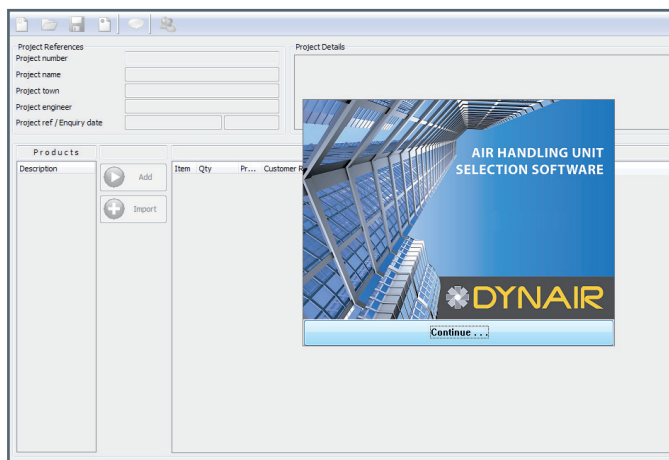


Ecology Unit Selection Software:

DYNAIR'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.





Date: 8/14/2016

Technical Specification

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

ETL CLASSIFIED



Conforms to UL STD 710

CUSTOMER DETAILS

Customer Name
Address
Town
Postcode
Country

Customer Number

GENERAL DATA

Product	Ecology Unit		Customer reference		ECU PS-401			
Number off	1		Unit configuration		Inline			
Total weight (each)	kg	582.09	Location		Internal			
Outdoor design temperature	°C	0.0	Roof type		None			
Frequency	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	dB(A)
Radiated casework SWL, dB	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	Galvanized 1.5mm C-channel	Base frame height	mm 80
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SUPPLY DATA

Type	Pa	DEV-02	Air volume	m³/s 1.00
External static	Pa	623	Unit velocity	m/s 1.02
Internal skin material	Pa	GI 0.5mm	External skin material	Pre Painted GI 0.5mm
Panel type	Pa	25 mm	SPFv	1.82

Operating sound power level	Frequency	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	dB(A)
Initial dB	90	83	87	84	80	78	70	89	
Outlet dB	90	83	87	84	80	78	70	89	

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Date: 2/6/2013

Technical Specification

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

SINGLE MIXING SECTION

Rectic opening				
Opening, width x height	mm	2150 x 1450	Damper torque	Nm
Damper motor		None		
Fresh air opening				
Opening, width x height	mm	2150 x 225	Damper torque	Nm
Damper motor		None		

COMBINED FILTER SECTION

ProFilter		Pressure drop: 301Pa	
Manufacturer	General Filters	Face velocity	m/s 2.13
Sub type	CFA-W	Initial pressure drop	Pa 66
Filter class	G4	Final pressure drop	Pa 137
Media length		Media length	mm 48
Manufacturer	General Filters	Initial pressure drop	Pa 95
Sub type	ABSTO-40	Final pressure drop	Pa 303
Filter class	F7	Media length	mm 380
Combined filter		Filter size: Qty x W x H	mm 4 x 400 x 400
Withdrawal method	Side	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

Manufacturer	AAF	Face velocity	m/s	2.55
Sub type	AstroCell III NG	Initial pressure drop	Pa	407
Filter class	H12	Final pressure drop	Pa	509
Media length	Side	Media length	mm	292
Withdrawal method		Filter size: Qty x W x H	6 x 610 x 610	
Access type	Hinged door	Access side	Right	

PLENUM SECTION

Length: 800mm	Pressure drop: 6Pa
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CARBON FILTER SECTION

Manufacturer	General Filters	Face velocity	m/s	2.57
		Initial pressure drop	Pa	128
Sub type	CCA18	Final pressure drop	Pa	490
Filter class		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
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Date: 2/6/2013

Technical Specification

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

FAN SECTION

Fan type		Performance		Pressure drop	
Length	mm	SYQ 560	K	Fan arrangement	Single
Air volume	m³/s	5.48		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 2450
Motor type		ABB		Motor speed	RPM 1455
External static pressure	Pa	750		Supply	V0I02H 4150/350
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
Belts length	mm	1582		Number of belts	2

Fan sound data SWL	Frequency	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
Initial dB	88	86	84	85	86	83	79	75	
Outlet dB	88	86	84	85	86	83	79	75	

MOTOR EXTRAS	1x Motor Extra 1
ACCESS	Hinged door
Access type	Access side
EXTRAS	1 x Porthole

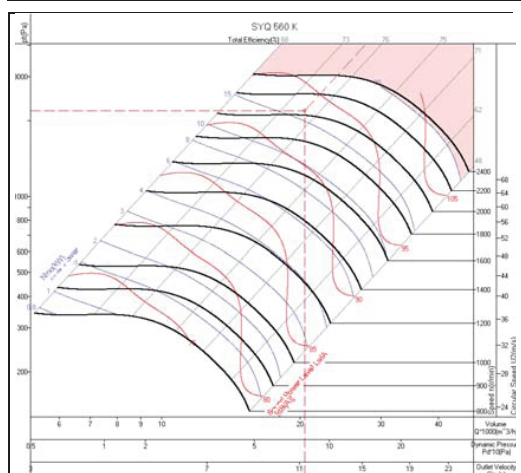
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Date: 2/6/2013

Fan Curve

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



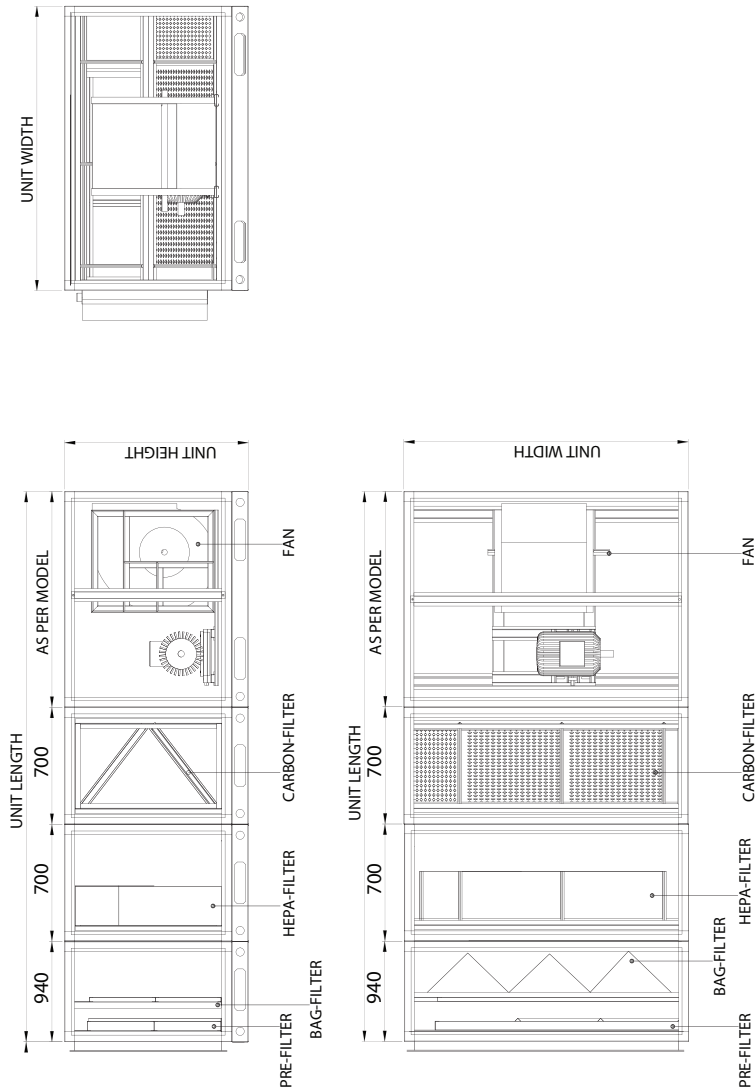
Page 2 of 2







Project name: STD. DRG. MAICO
Quotation No:



Scale: not draw to scale

 DYN AIR®

Unit No:
Unit Desc: DEV STD. DRG
FOR ALL MODEL
Qty Units:1 No./UNIT
Weight:

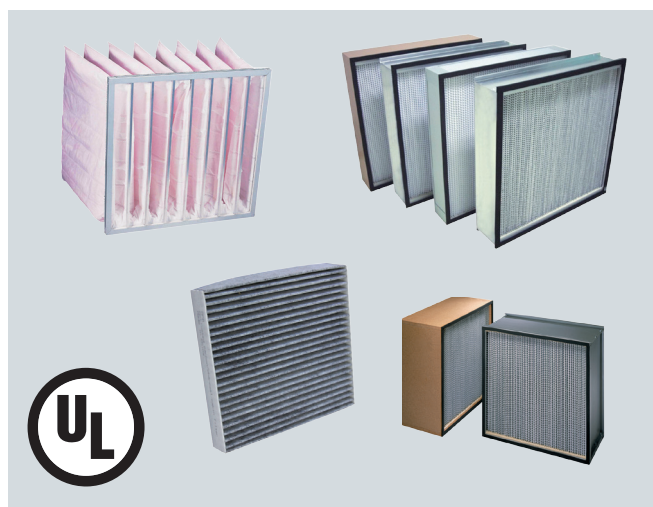
DATE:-29/03/16
Engineer:- KS

25 mm Cabinet (STD)										50 mm Cabinet			
DEV Model	Airflow Rate		Height	Width	Pre-filter	Pre-Bag Filter	Hepa filter	Carbon filter	Blower & Motor (DIDW)	Blower & Motor	ESP		ESP DUCT
	CFM	CMH	A	B	L3	L4	L5	L6	L7	L8	MODEL	L x W x H	L2
DEV-1	1500	2549	800	850	360	940	700	700	950	1250	RY2500 B x 1	780X850X800	500
DEV-2	2000	3398	900	1200	360	940	700	700	950	1250	RY3000 B x 1	780X1400X800	500
DEV-3	2500	4248	950	1200	360	940	700	700	1100	1400	RY5000 B x 1	780X1400X800	500
DEV-4	3000	5097	950	1650	360	940	700	700	1100	1400	RY5000 B x 1	780X1400X800	500
DEV-5	3500	5947	950	1675	360	940	700	700	1100	1400	RY7500 B x 1	780X1950X800	500
DEV-6	4000	6796	1000	1700	360	940	700	700	1265	1565	RY7500 B x 1	780X1950X800	500
DEV-7	5000	8495	1050	2150	360	940	700	700	1265	1565	RY5000 B x 2	780X1400X1340	800
DEV-8	6000	10194	1650	1700	360	940	700	700	1400	1700	RY5000 B x 2	780X1400X1340	800
DEV-9	7500	12743	1650	1725	360	940	700	700	1650	1950	RY7500 B x 2	780X1950X1340	800
DEV-10	10000	16990	1800	2150	360	940	700	700	1760	2060	RY7500 B x 3	780X1950X1880	800
DEV-11	12000	20388	1800	2600	360	940	700	700	1760	2060	RY7500 B x 3	780X1950X1880	800
DEV-12	15000	25485	1800	2625	360	940	700	700	2000	2300	RY7500 B x 4	780X1950X2680	800
DEV-13	18000	30582	1800	2650	360	940	700	700	2100	2400	RY7500 B x 4	780X1950X2680	800
DEV-14	20000	33980	2300	2600	360	940	700	700	2100	2400	RY7500 B x 6	780X3750X1880	800
DEV-15	24000	40776	2300	2600	360	940	700	700	2250	2550	RY7500 B x 6	780X3750X1880	800
DEV-16	30000	50970	2450	2600	360	940	700	700	2400	2700	RY7500 B x 8	780X3750X2680	800
DEV-17	35000	59465	3350	2600	360	940	700	700	2400	2700	RY7500 B x 8	780X3750X2680	800
DEV-18	40000	67960	3350	2600	360	940	700	700	2700	3000	RY7500 B x 10	780X3750X3220	800

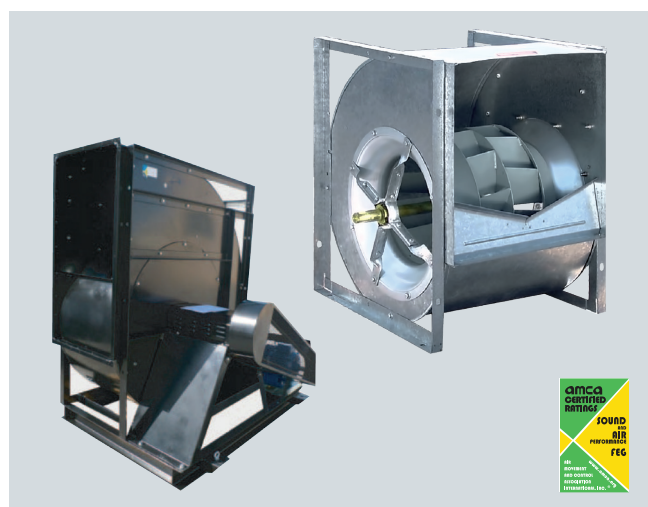
Note :-

- 1) All Dimensions are in mm.
- 2) Lengths Shown are of Individual Module.
- 3) Please consider these dimensions 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.

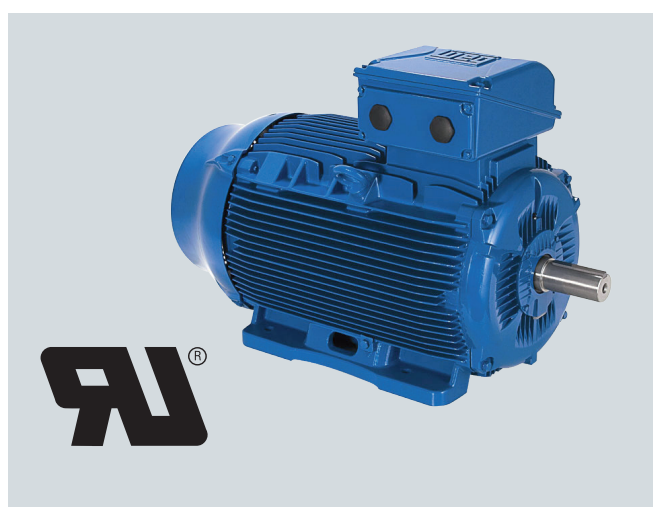
Filter



Fan



Motor



Electrostatic Precipitator



Electrical Accessories



Controllers



DESIGN

The most significant design criterion in the selection of ecology units is the type of catering establishment. Since the amount of grease, steam, and particles in the exhaust air will vary according to the type of food cooked, different models should be selected for various kitchens. Thus, we can divide common catering establishment types under four main headings according to the density of odour and grease. This classification as low, medium and high density kitchen types can be seen in the following table.

	Odour Percentage			Grease Percentage		
	Low	Medium	High	Low	Medium	High
Tea Shop/Cafe	√			√		
Pizza		√			√	
Steakhouse		√			√	
French Restaurant		√			√	
Italian Restaurant		√			√	
Pub/Bistro		√			√	
Far Eastern Cuisine		√				√
Indian			√			√
Thai			√			√
Vietnamese			√			√
Kebab Shop/Traditional Turkish Cuisine			√			√
Fast Food/Fried Food			√			√

CONFIGURATION

	Odour & Grease Percentage		
Configurations	Low	Medium	High
Low	√		
Medium		√	
Heavy			√

LOW DUTY KITCHEN CONFIGURATION:

Electrostatic precipitator + Aluminium Pre filter grade (G2) + Synthetic Bag filter grade (F7) + Granulate carbon filter in synthetic media + DIDW fan.

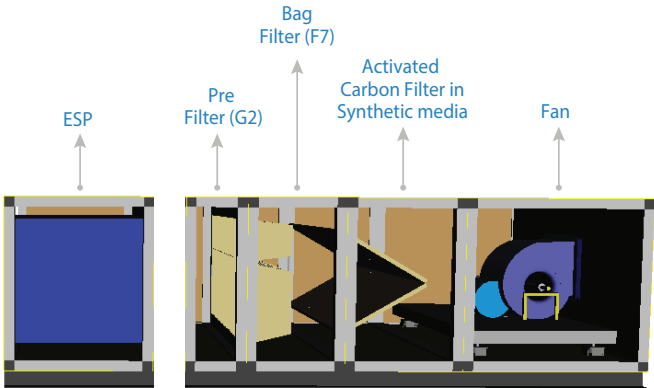
MEDIUM DUTY KITCHEN CONFIGURATION:

Electrostatic precipitator + Aluminium Pre filter grade (G2) + Synthetic Bag filter grade (F8) + Granular filled activated carbon filter + DIDW fan.

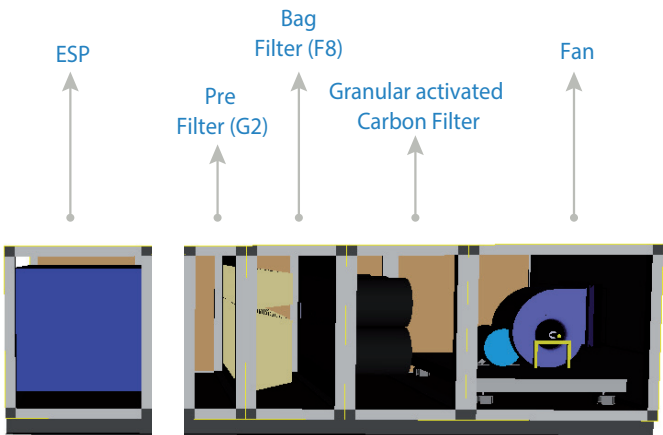
HEAVY DUTY KITCHEN CONFIGURATION:

Double pass electrostatic precipitator + Aluminium Pre filter grade (G2) + Synthetic Bag filter grade (F9) + Cylindrical carbon filter + UV light+ DIDW fan.

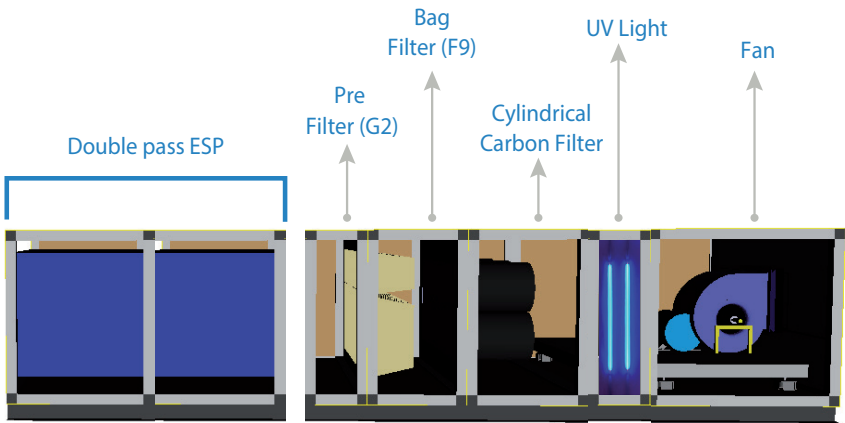
LOW DUTY KITCHEN

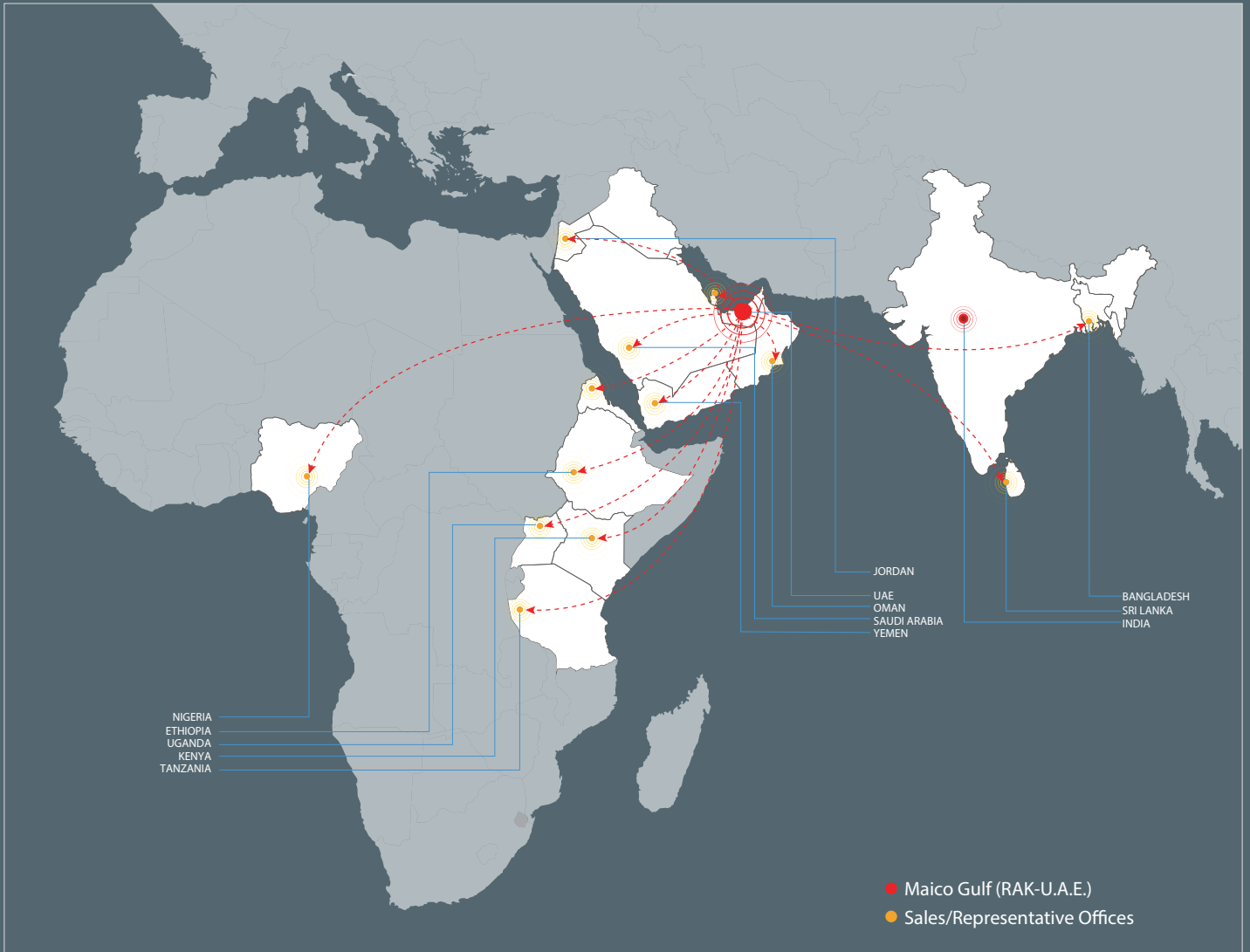


MEDIUM DUTY KITCHEN



HEAVY DUTY KITCHEN





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