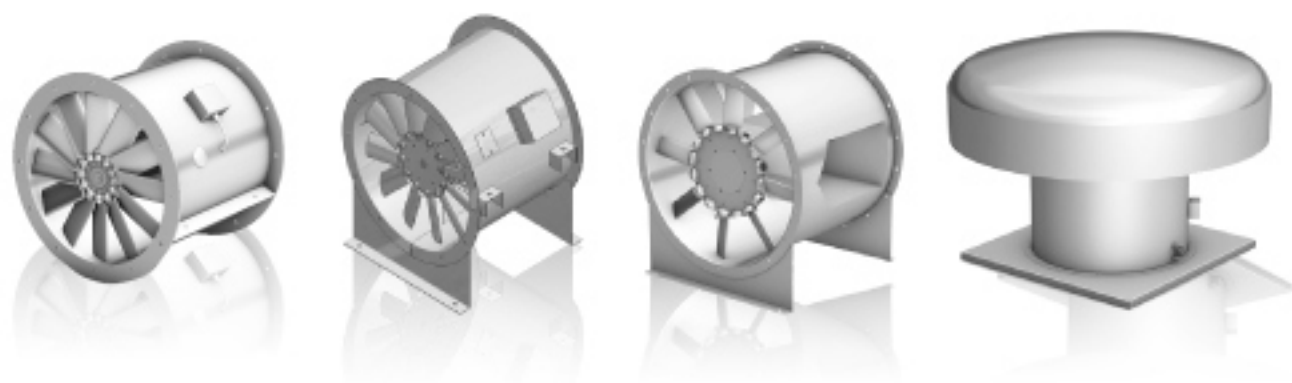


AXIAL FAN SERIES

ADTA • ADTA - F • ADB • ADTA-RD

NICOTRA||Gebhardt



fan|tastic solutions



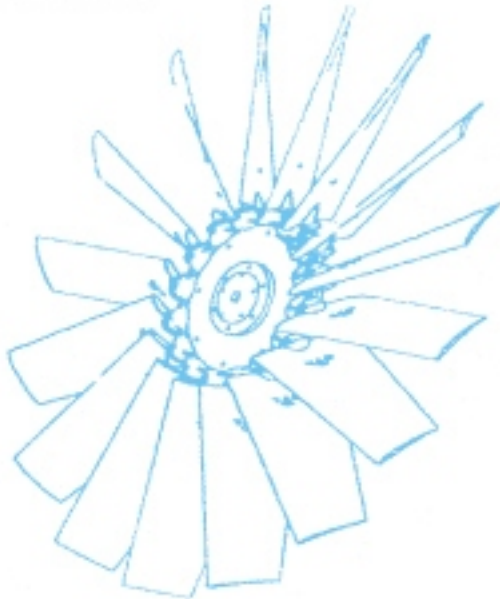
Table of Content

1.	Nicotra Gebhardt Axial Fan Introduction	1 ~ 5
2.	ADTA Series	6
3.	ADTA - F Series	7
4.	ADTA, ADTA - F General Dimension	8
5.	ADTA, ADTA - F Exploded View	9
6.	ADB Series	10
7.	ADB General Dimension	11
8.	ADB Exploded View	12
9.	ADTA - RD Series	13
10.	ADTA - RD General Dimension	14
11.	ADTA - RD Exploded View	15
12.	Products Range	16
13.	Nomenclature	17
14.	Appendix	18
15.	Note	19

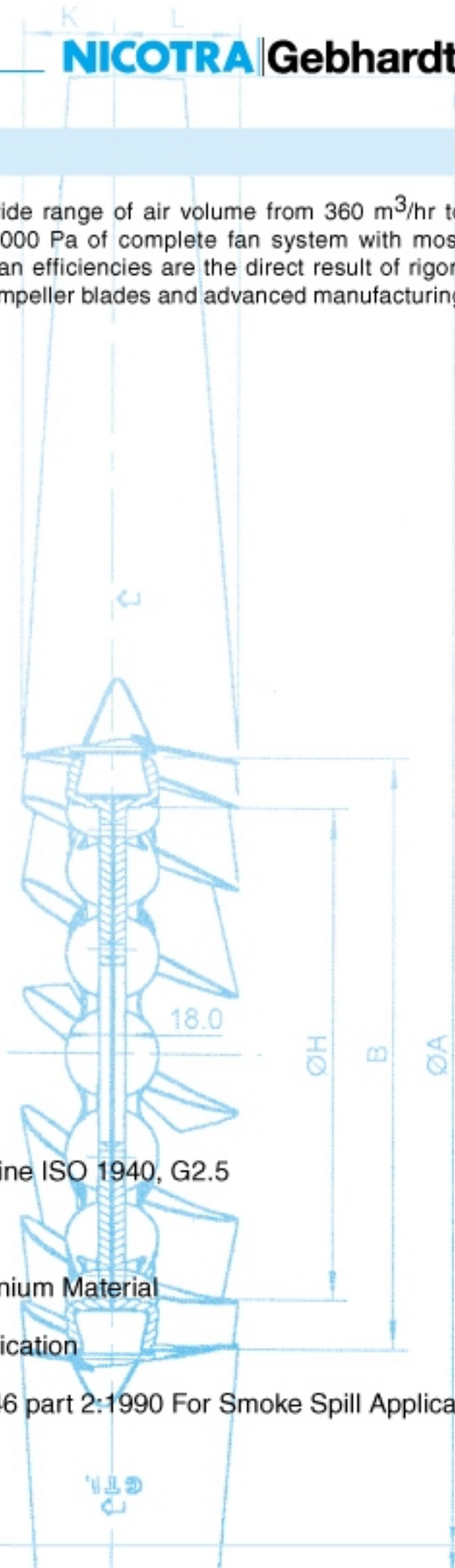
Introduction

The Nicotra Gebhardt axial fan provide wide range of air volume from 360 m³/hr to 216,000 m³/hr, at static pressure up to 1000 Pa of complete fan system with most diversified application. Remarkably high fan efficiencies are the direct result of rigorously developed aerodynamically profiled impeller blades and advanced manufacturing technique.

FEATURES



- High Efficiency
- Fully Adjustable Blade
- Versatile
- High Quality Material
- Interchangeable Components
- The Axial Impeller Is Balanced In Line ISO 1940, G2.5
- Robust Construction
- GRN and Pressure Die Cast Aluminium Material
- Anti-static GRN for Anti Spark Application
- Third Party Certification On BS 7346 part 2:1990 For Smoke Spill Application



Test Standard

The performances shown are for Standard units. Fans are tested in accordance to Method 1, BS 848 Part 1: 1980. Under this standard, test results are corrected to standard air density of 1.2kg/m³.

Any variation in individual fan performance due to manufacturing variations falls with Class B tolerances of the British Standard. Fan sound levels are given on Performance Curves together with Octave Band spectrum, based on in-duct method as specified in BS 848 Part 2.

Impeller

Aerofoil blades are available in Three types of material. They are Glass Reinforced Nylon (GRN), Aluminium (AL) and Anti-static GRN (ASTAT).

GRN, Glass Reinforced Nylon

Glass reinforced Nylon 66 has greater strength and high temperature capability (-40°C to +150°C of non-radiant heat). Higher speeds are acceptable for standard impeller when GRN blades are fitted. Recommended maximum Tip Speed for GRN is 115m/sec.

Aluminium, AL

Blades are available in Aluminium LM6. Proven for use in emergency smoke and fume extract applications up to 400°C. It is also suitable for continuous operation -40°C to +200°C. Maximum Tip Speed for AL blades is 100m/sec.

Anti-static Blades

GRN Blades specially formulated to provide anti-static properties are available. The principle application for these blades is for installation which is categorised as "potentially explosive atmosphere" and where the risk of ignition of gas or dust vapours through a spark incident is a possibility.

These anti-static blades which are made with 20% glass filling (as standard) have a percentage of carbon black added to control the surface resistivity.

The anti-static blades have a slightly lower tensile strength than the normal GRN blades, this should not concern most applications, however we are recommending that the max continuous operating temperature is limited to -30 degC to 110 degC.

Balancing

All Nicotra Gebhardt axial impellers and fans are balanced to ISO Std No 1940, Edition using balancing grade of G2.5 (Displacement Amplitude = 2.5 mm/s) in our factory.

Hub System

Our range of axial fan is fully adjustable blades and there are basically 6 hubs systems as shown below:

Hub Size	Number of Blades
110	5 Blades
160	5 & 10 Blades
230	3, 6 & 12 Blades
250	3, 6 & 12 Blades
400	4, 8, 12 & 16 Blades
550	4, 7 & 11 Blades

Hub Combination for Axial Fan

The complete hub system for impeller 1400 and 1600 consists of side plate metal, center hub, aluminium blade, blade holder and taper lock bush.

Our 250 and 400 hub are designed to be mounted with taper-lock bush 2517 of 42mm, 48mm, 55mm and 60mm diameter as optional feature.

Blades Design / Types

Basically, we have the following design of impellers:

Design Type	Material	Hub System
S	GRN/Anti-Static GRN	110, 160, 230
B	ALU	110, 160, 230
A	GRN/ALU/Anti-Static GRN	110, 160, 230
T	ALU	250
C	ALU	400

Casing

All standard axial fan tube casing's surface are applied with paint - RAL 7030 by powder coating method. Coating thickness is 60µm.

Thus, by this method, tube casing surface appeared to be wrinkle and provide better protection against chemical and wear.

Long case axial casings are rolled from 2.0 mm to 5.0 mm mild steel. The standard double flanged L bracket mounting is provided, foot mounted support can be provided as optional. Tube casing come with standard view port, and the access door can be requested as option.

Electric Motor

Nicotra Gebhardt use standard three phase motors TEFC, foot mounted insulation in accordance with IEC standard EN 60034 or BS 4999, Enclosure IP55, insulation Class "F". Other medium temperatures, protection classes, two speed motor (poles switch) and etc as optional.

Computer selection

Our user-friendly fan selection software allows you to select the most suitable model to your needs. Performance data and fan curve will be generated by the state of art software.

Reversal of Air Flow

Air flow direction can be reversed on fans fitted with three-phased motors by simply reversing the direction of rotation. But the impact on performance in reverse rotation is approximately;

Air flow / volume:	-40%
Pressure reduction:	-50%
Power reduction:	-35%

Truly reversible

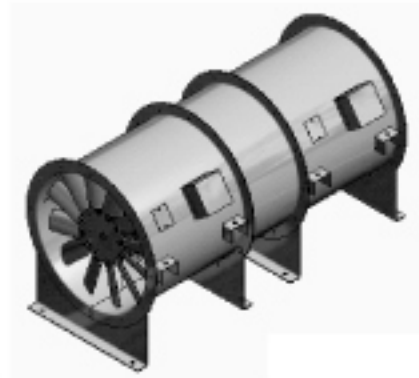
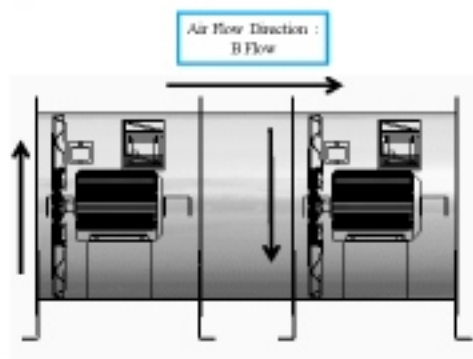
For a truly reversible axial fan, every other blade must be set in the opposite direction of flow. The blades must be the same handing. The impact on performance in reverse rotation is approximately: (applicable for up to max pitch angle of 30 deg).

Air flow / volume:	-20%
Pressure reduction:	-35%
Power reduction:	-30%

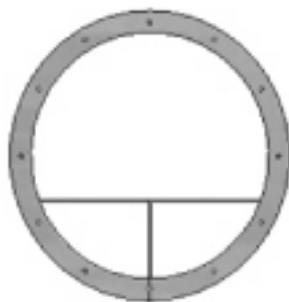
Contra-rotating

Multi-stage axial fans with contra-rotating impellers can be supplied as optional. A two stage contra-rotating assembly develops approximately 2.5 times the pressure developed by a single stage fan and increases the overall sound level by 8-10 dB.

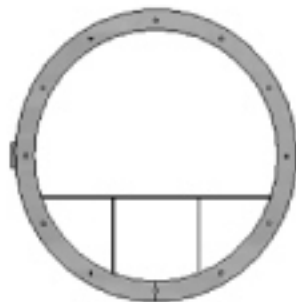
To select a contra-rotating axial, divide the static pressure by 2.5 and select as though it was a single stage unit. The kW figure is for one stage only and should be multiply by two to the system.



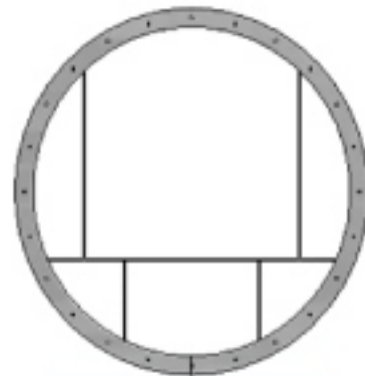
Casing Overview Dimension



0315-0560

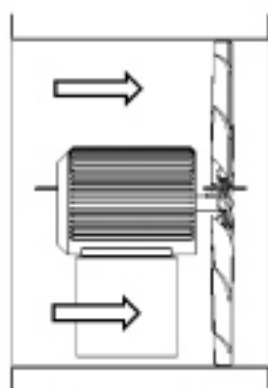


0630-1600(≤FS200)

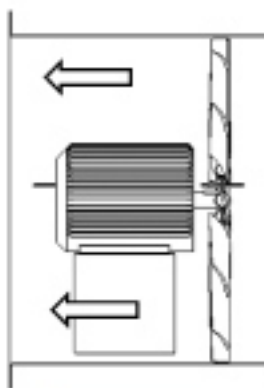


1120-1600(>FS200)

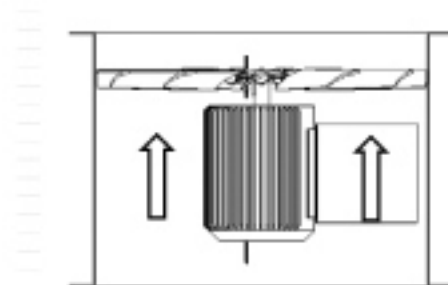
Standard Arrangement



A



B



AU

A = From the motor to the impeller

B = From the impeller to the motor

AU = From the motor to the impeller, up position.

ADTA Series

APPLICATION

Nicotra Gebhardt ADTA are particularly suitable for the extraction of stale air, for general ventilation, drying process and all those applications which require moving large volumes of air.

CONSTRUCTION

The housing is made of heavy-gauge mild steel casing, seamless double flanges at both end. Powder coated bake enamel finishing (60 micron) or galvanized steel. High efficiency impeller made of adjustable pitch aerofoil blade; ALU type or GRN type. Foot mounting & Hot dip galvanized casing is available as an option.



WORKING TEMPERATURE

-40°C to 150°C : GRN

-40°C to 200°C : ALU

MOTOR

Three-phase with type of "Totally Enclosed Fan Cooled" (TEFC), horizontal foot mounted Squirrel Cage Induction Motor, featured with class F insulation system with Class B temperature rise (80°C). Voltage supply includes 400V/50Hz, 400V/60Hz or 440V/60Hz. Motor Standards are comply with IEC 60034 or BS 4999. Other requirements upon demand basis.

Motor are wired to an external terminal box with cable and through PVC or steel flexible conduit. Please refer to page 17 Appendix for wire connection diagram.

DIRECTION OF THE AIR

The standard air flow from the impeller to the motor (B), on demand the fans can be supplied with the direction from the motor to the impeller (A).

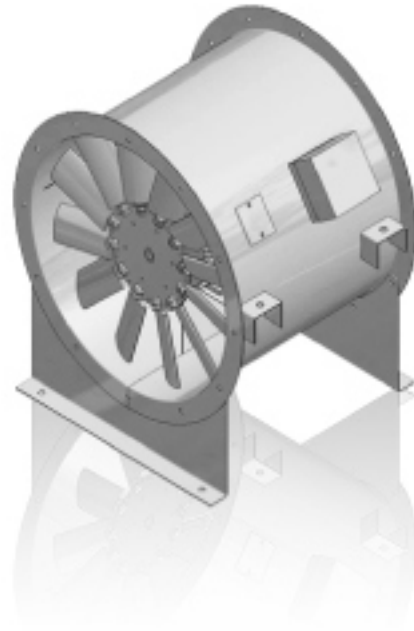
ADTA - F Series

APPLICATION

Nicotra Gebhardt ADTA - F smoke spill axial fans are particularly designed for the removal of hot toxic smoke so as to remove the smoke at the escape passage and assist firefighters by providing better visibility. It also provide ventilation to the area during normal situation.

CONSTRUCTION

The housing is made of heavy-gauge mild steel casing, seamless double flanges at both end. Powder coated bake enamel finishing or galvanized steel. High efficiency impeller made of adjustable pitch aerofoil blade pressure die cast Aluminium. Hot dip galvanized casing is available as option.



MOTOR

High temperature resistance motor compliance to BS 7346 : Part2 : 1990 and EN 12101-3 : 2006 directive. Three phase with type of "Totally Enclosed Air Over" (TEAO), horizontal foot mounted Squirrel Cage Induction Motor, featured with class H insulation system with Class B temperature rise (80°C). Voltage supply includes 400V/50Hz, 400V/60Hz or 440V/60Hz. Motor Standards are comply with IEC 60034 or BS 4999. Other requirements upon demand basis.

Motor are wired to an external terminal box with cable and through flexible conduit. Please refer to page 17 Appendix for wire connection diagram.

TESTING

ADTA - F axial fans have been tested by the Warrington Fire Research which is UK's largest Independent specialist in fire safety testing, consultancy and research. Its report are well accepted by specifying and regulatory authorities throughout the world.

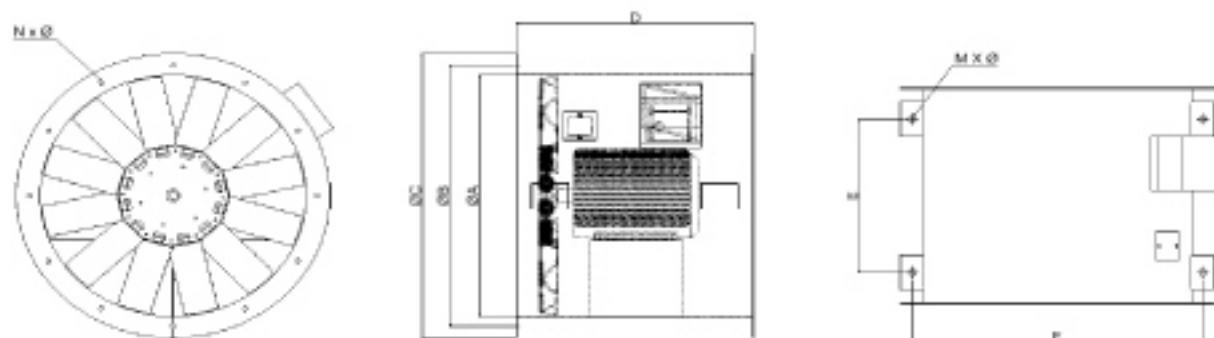
This series were tested in accordance to BS 7346 : Part 2 : 1990 Class B (250°C, 120 minutes) and equivalent to EN 12101-3 : 2006 (F200)

DIRECTION OF THE AIR

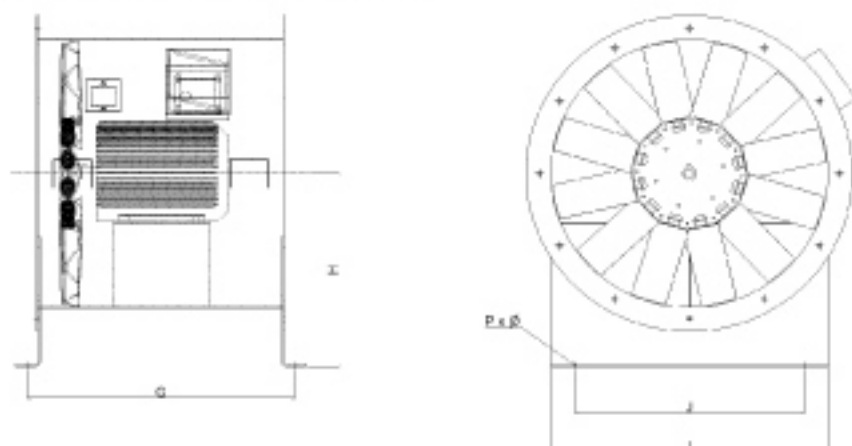
The standard air flow from the impeller to the motor (B), on demand the fans can be supplied with the direction from the motor to the impeller (A)

ADTA, ADTA - F General Dimension

ADTA / - F with Hanger



ADTA / - F with Mounting Feet (optional)



MODEL	ADTIF General Dimension					ADTIF - hanger				ADTIF - Mounting Feet (Optional)					Mtr Frame Size
	DA	DB (PCD)	DC	D	N x Ø	E	F	M x Ø	G	H	I	J	P x Ø		
315	315	355	335	355	8 X 10	211	365	4 X 16	335	277.5	265	315	2 x 10		90
355	355	395	435	355	8 X 10	211	405	4 X 16	335	297.5	305	355	2 x 10		90
355	355	395	435	400	8 X 10	256	405	4 X 16	440	297.5	305	355	2 x 10		100
400	400	440	480	355	12 X 10	211	450	4 X 16	385	320	350	400	2 x 10		90
400	400	440	480	435	12 X 10	291	450	4 X 16	475	320	350	400	2 x 10		112
450	450	490	530	400	12 X 10	256	500	4 X 16	440	345	400	450	2 x 10		100
450	450	490	530	475	12 X 10	331	500	4 X 16	515	345	400	450	2 x 10		112
500	500	540	580	500	12 X 10	356	550	4 X 16	530	370	450	500	2 x 14		132
550	550	605	660	500	12 X 10	356	611	4 X 16	538	402.5	460	580	2 x 14		132
630	630	675	730	500	12 X 10	326	691	4 X 20	538	437.5	530	630	2 x 14		112
630	630	675	730	700	12 X 10	526	691	4 X 20	738	437.5	530	630	2 x 14		160
710	710	755	810	500	16 X 12	324	774	4 X 20	536	477.5	610	710	2 x 16		112
710	710	755	810	710	16 X 12	534	774	4 X 20	746	477.5	610	710	2 x 16		160
800	800	845	900	560	16 X 12	384	864	4 X 20	596	522.5	700	800	2 x 16		132
800	800	845	900	760	16 X 12	584	864	4 X 20	796	522.5	700	800	2 x 16		160
900	900	945	1000	630	16 X 12	454	964	4 X 20	666	582.5	800	900	2 x 16		132
900	900	945	1000	820	16 X 12	644	964	4 X 20	856	582.5	800	900	2 x 16		200
1000	1000	1045	1100	630	24 X 12	454	1065	4 X 20	666	672.5	900	1000	2 x 16		160
1000	1000	1045	1100	800	24 X 12	624	1065	4 X 20	836	672.5	900	1000	2 x 16		200
1120	1120	1185	1250	600	24 X 12	724	1185	4 X 20	906	742.5	1020	1120	2 x 16		225
1120	1120	1185	1250	1150	24 X 12	974	1185	4 X 20	1186	742.5	1020	1120	2 x 16		280
1250	1250	1315	1380	1000	24 X 12	794	1324	4 X 25	1084	807.5	1050	1250	3 x 20		250
1250	1250	1315	1380	1190	24 X 12	944	1324	4 X 25	1234	807.5	1050	1250	3 x 20		280
1400	1400	1485	1530	1120	32 X 14	812	1475	4 X 25	1292	882.5	1290	1400	3 x 20		280
1600	1600	1680	1730	1250	32 X 14	1042	1675	4 X 25	1332	981.5	1400	1600	3 x 20		315

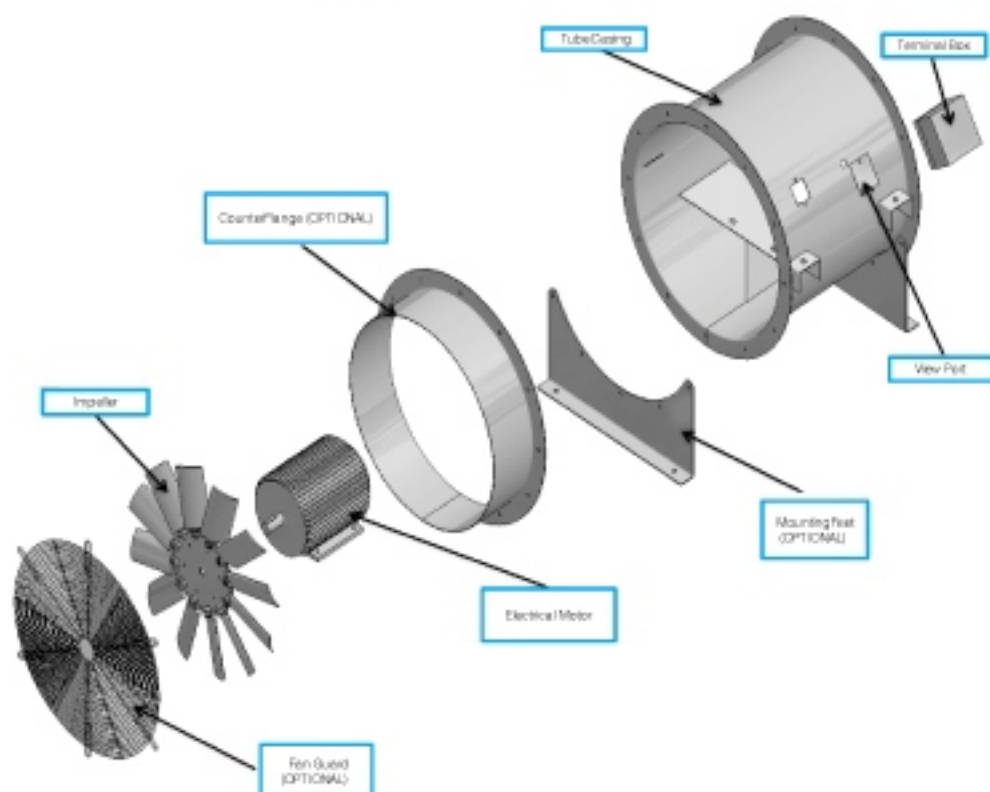
Due to a policy of continuous development and improvement the right is reserved to supply product which may differ from those illustrated and described in this publications.

Certified dimensions will be supplied on receipt of order

ADTA, ADTA - F Exploded View

Part List, Specification, Arrangement

Part Description	Specification
1 Tube Casing	Painted (RAL 7030), Hot Dipped, Stainless Steel, etc
2 Terminal Box	PVC, Cast Iron, etc
3 Viewport Cover	Depend on t/casing material
4 Mounting Feet (Optional)	Depend on t/casing material
5 Counter Flange (Optional)	Depend on t/casing material
6 Electrical Motor	Specification as per requested
7 Impeller	ALU, GRN, GRN-antistatic
8 Fan Guard	Painted or Hot Dipped

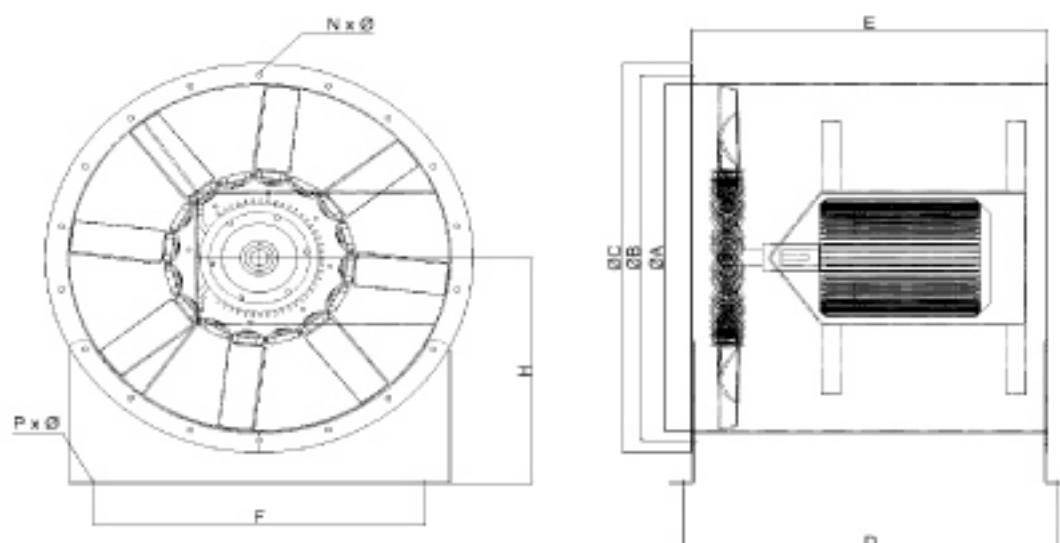


AXIAL COUNTER FLANGE (OPTIONAL)



MODEL	ØA	ØB (PCD)	ØC	D	N x Ø
315	315	355	395	40	8 X 10
355	355	395	435	40	8 X 10
400	400	440	480	40	12 X 10
450	450	490	530	40	12 X 10
500	500	540	580	40	12 X 10
560	560	605	660	40	12 X 10
630	630	675	730	40	12 X 10
710	710	755	810	40	18 X 12
800	800	845	900	40	18 X 12
900	900	945	1000	60	18 X 12
1000	1000	1045	1100	60	24 X 12
1120	1120	1185	1250	60	24 X 12
1250	1250	1315	1380	60	24 X 12
1400	1400	1465	1530	60	32 X 14
1600	1600	1663	1730	60	32 X 14

ADB General Dimension



ADB GENERAL DIMENSIONS

MODEL	ØA	ØB (PCD)	ØC	D	E	F	H	N x Ø	P x Ø	Mtr F.Size
400	400	440	480	500	460	395	320	12 X 10	2 x 10	D90S
450	450	490	530	500	460	440	345	12 X 10	2 x 10	D90L
500	500	540	580	688	650	538	370	12 X 10	2 x 14	D90L
560	560	605	660	688	650	538	402.5	12 X 10	2 x 14	D112M
630	630	675	730	688	650	538	437.5	12 X 10	2 x 14	D112M
710	710	755	810	736	700	536	477.5	18 X 12	2 x 16	D1120
800	800	845	900	786	750	596	522.5	18 X 12	2 x 16	D132M
900	900	945	1000	986	950	666	592.5	18 X 12	2 x 16	D160M
1000	1000	1045	1100	986	950	666	672.5	24 X 12	2 x 16	D160M
1120	1120	1185	1250	1136	1100	936	742.5	24 X 12	2 x 16	D225M
1250	1250	1315	1380	1184	1100	1084	807.5	24 X 12	3 x 20	D250M

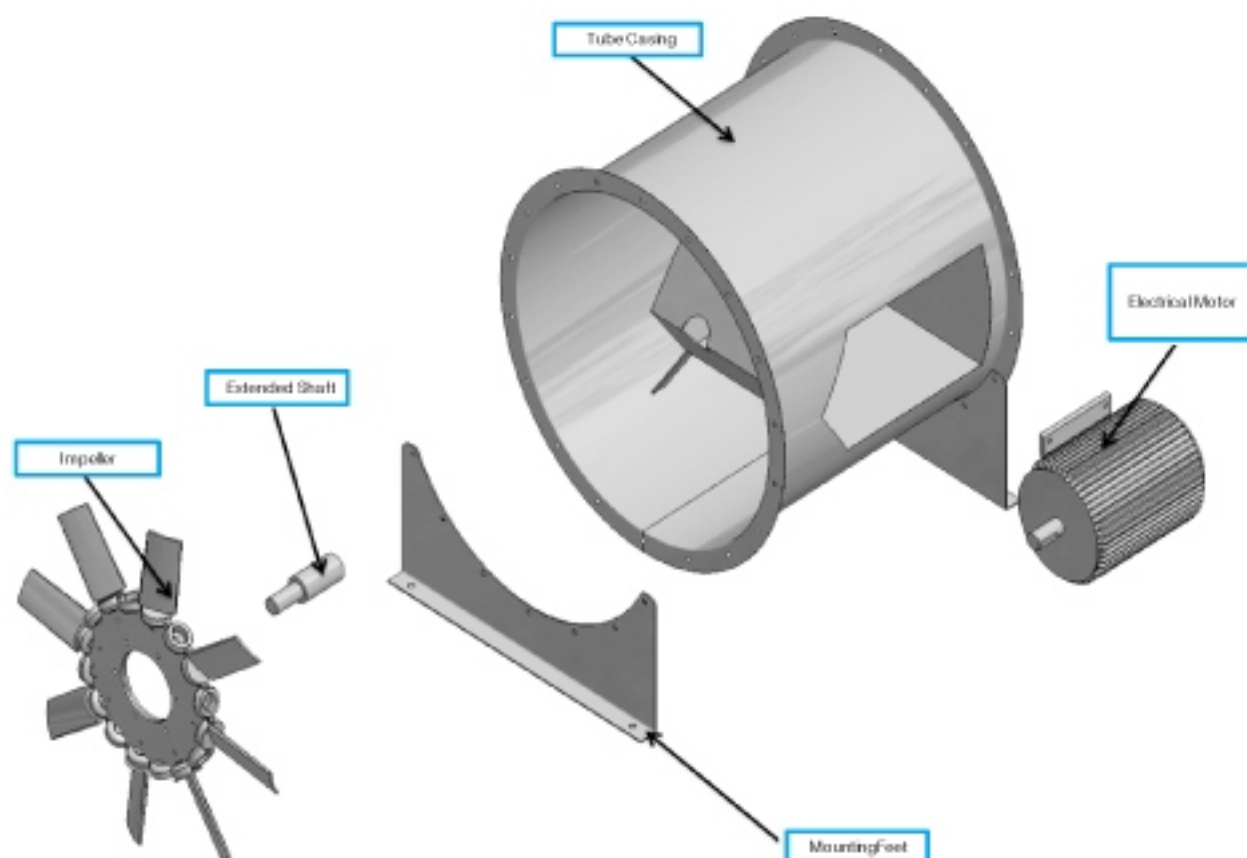
Due to a policy of continuous development and improvement the right is reserved to supply product which may differ from those illustrated and described in this publications.

Certified dimensions will be supplied on receipt of order

ADB Exploded View

Part List, Specification, Arrangement

	Part Description	Specification
1	Tube Casing	Hot Dipped, Optional powder coated
2	Electrical Motor	Specification as per requested
3	Mounting Feet	Hot Dipped
4	Extended Shaft	Steel C45
5	Impeller	ALU, GRN, GRN-antistatic



Type ARTA - RD

APPLICATION

Nicotra Gebhardt ARTA - RD are particularly suitable for the roof extraction of stale air, for general ventilation, and all those applications which require moving large volumes of air and limited tenure space, especially factory, Hyper-market and etc.

CONSTRUCTION

The housing is made of heavy-gauge mild steel casing, seamless double flanges at both end. Powder coated bake enamel finishing (60 micron) or galvanized steel. High efficiency impeller made of adjustable pitch aerofoil blades. ALU type or GRN type. Cylindrical stack with plate square base or facing on to horizontal base, or tilted to suit the roof pitch. Rain hood as protection against adverse outdoor weather condition.

WORKING TEMPERATURE

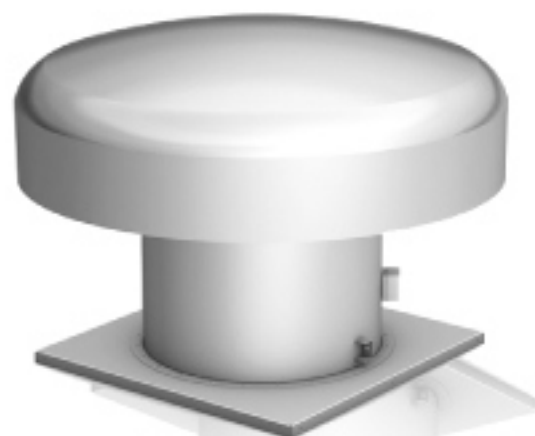
-40°C to 150°C : GRN
-40°C to 200°C : ALU

MOTOR

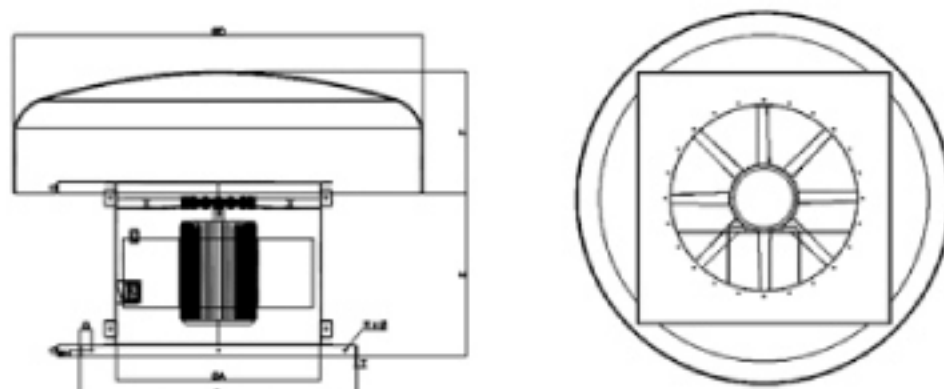
Three-phase with type of "Totally Enclosed Fan Cooled" (TEFC), horizontal foot mounted Squirrel Cage Induction Motor, featured with class F insulation system with Class B temperature rise (80°C). Voltage supply includes 400V/50Hz, 400V/60Hz or 440V/60Hz. Motor Standards are comply with IEC 60034 or BS 4999. Other requirements upon demand basis. Motor are wired to an external terminal box with cable and through PVC or steel flexible conduit. Please refer to page 17 Appendix for wire connection diagram.

DIRECTION OF THE AIR

The standard air flow from the motor to impeller (A).



ADTA - RD General Dimension



View : 12 holes on each side of fan support base

ARD GENERAL DIMENSIONS									
MODEL	ØA	D	E	F	G	L	T	N x Ø	Mtr F.Size
400	400	850	355	280	40	600	2.5	12 X 10	90
400	400	850	435	280	40	600	2.5	12 X 10	112
450	450	850	400	280	40	660	3	12 X 10	100
450	450	850	475	280	40	660	3	12 X 10	112
500	500	850	500	280	40	730	3	12 X 10	132
560	560	1250	500	400	50	810	3	12 X 10	132
630	630	1250	500	400	50	895	3	12 X 10	112
630	630	1250	700	400	50	895	3	12 X 10	160
710	710	1250	500	400	50	990	4	12 X 12	112
710	710	1250	710	400	50	990	4	12 X 12	160
800	800	1500	560	450	63	1100	4	12 X 12	132
800	800	1500	760	450	63	1100	4	12 X 12	160
900	900	1500	630	450	63	1235	4	12 X 12	132
900	900	1500	820	450	63	1235	4	12 X 12	200
1000	1000	1500	630	450	63	1375	4	12 X 12	160
1000	1000	1500	800	450	63	1375	4	12 X 12	200
1120	1120	2250	900	700	63	1520	4	12 X 12	225
1120	1120	2250	1150	700	63	1520	4	12 X 12	260
1250	1250	2250	1000	700	63	1650	4	12 X 12	250
1250	1250	2250	1150	700	63	1650	4	12 X 12	260

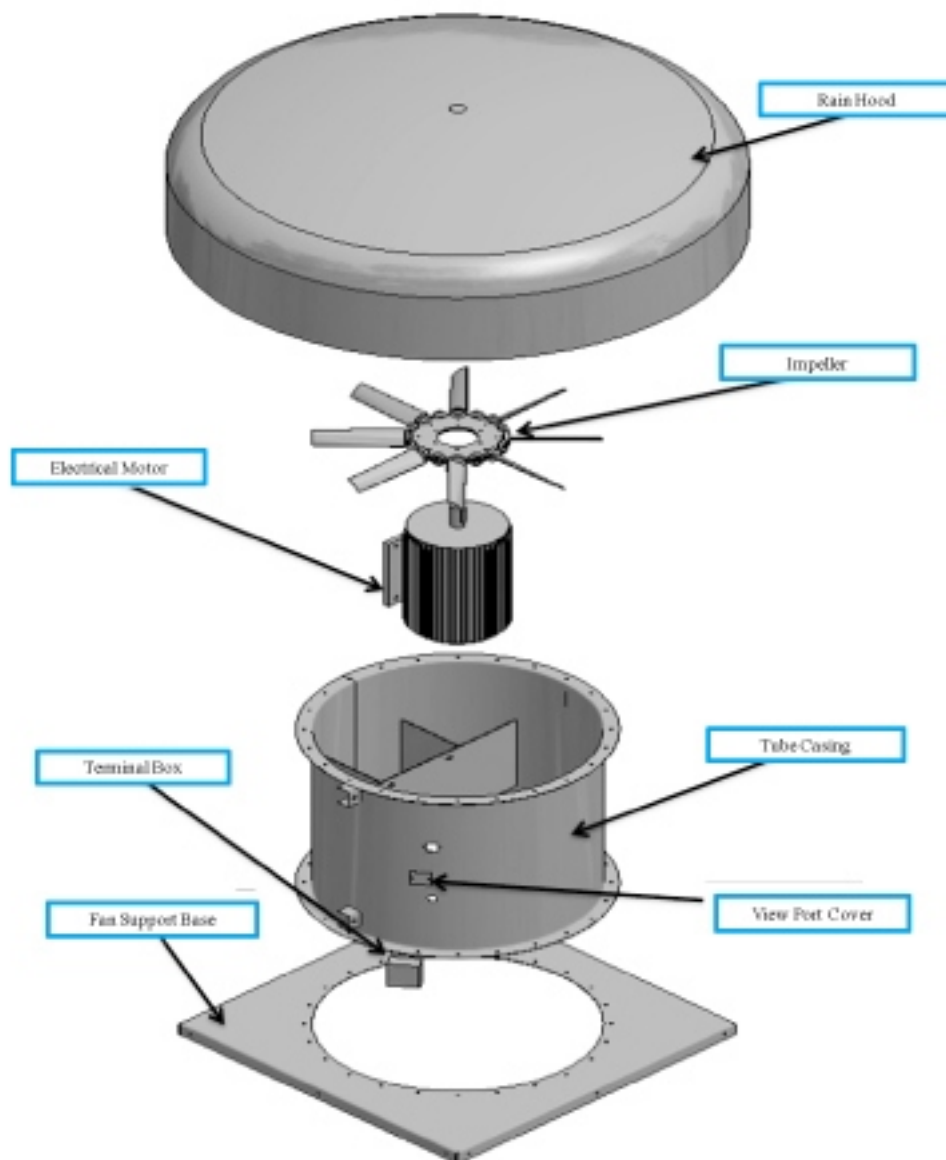
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Certified dimensions will be supplied on receipt of order

ADTA - RD Exploded View

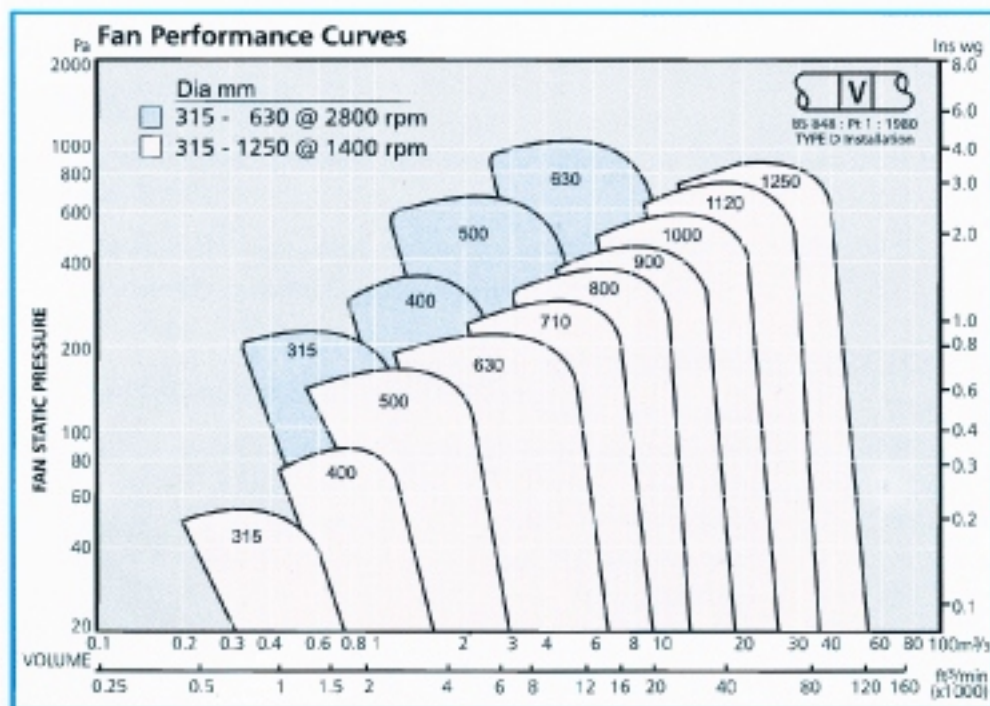
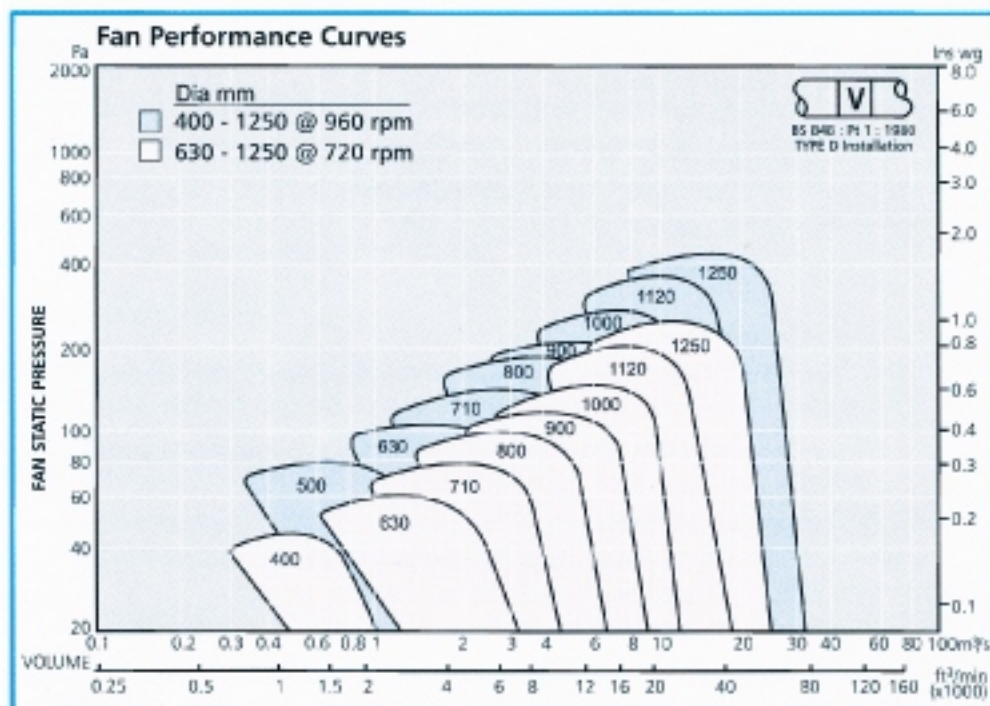
Part List, Specification, Arrangement

	Part Description	Specification
1	Rain Hood	Fiber Glass
2	Impeller	ALU, GRN, GRN-antistatic
3	Electric Motor	Specification as per requested
4	Tube Casing	Painted (RAL 7030), Hot Dipped, Stainless Steel, etc
5	Terminal Box	PVC, Cast Iron, etc
6	Viewport Cover	Depend on t/casing material
7	Fan support Base	Depend on t/casing material



Aerodynamic Performance

The Emergency Fume and Smoke Extract Fan range is tested in accordance with BS 848 Part 1, and the data shown is determined under normal ambient conditions as a standard basis for unit selection.

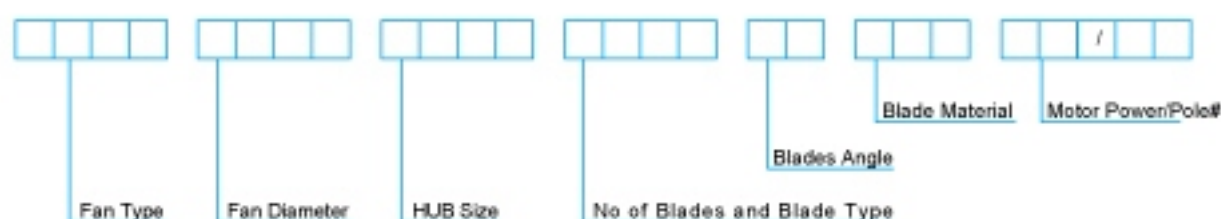


Dimensions and performance graphs detailed in this leaflet are to be used only as a guide. Certified information is available on request from our Sales Office. Note: Data above 1250mm shall be provided on request.

Nomenclature

When ordering Nicotra Gebhardt Axial fans, please specify your requirements in the followings sequence to avoid confusion.

1. Fan Type and Performance Data
 - Fan Type: ADT, ADF, ADB or ARD
 - Capacity
 - Static Pressure
2. Electric Motor Details
 - Power, main supply, voltage, frequency, 50 Hz or 60 Hz type
 - Motor Speed, Polarity
 - Insulation (Class F, Class H, etc)
3. Impeller Material
 - Glass Reinforced Nylon, GRN
 - Aluminium, ALU
 - Anti Static GRN



Description (Sample)

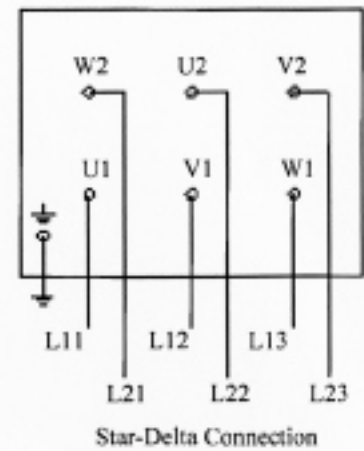
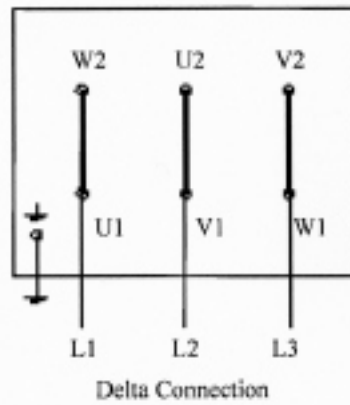
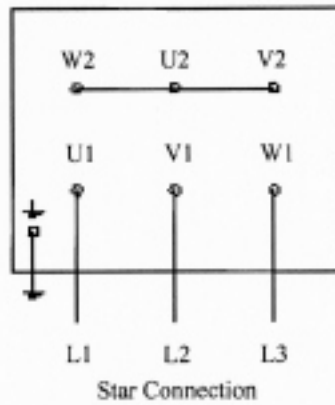
ADF1000/400/08C/20.0/ALU-18.5/4P

ADT	Long Case Drive
1000	Fan Diameter = 1000mm
400T	Hub Size
8C	Blade type "C", Qty = 8
20°	Blade Angle 20 Deg
ALU	ALU Material

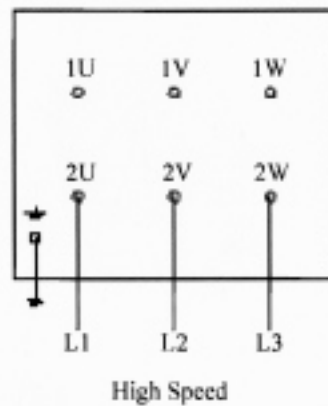
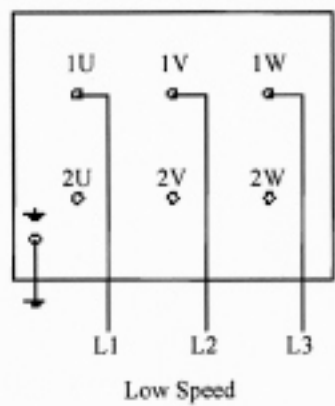


Appendix

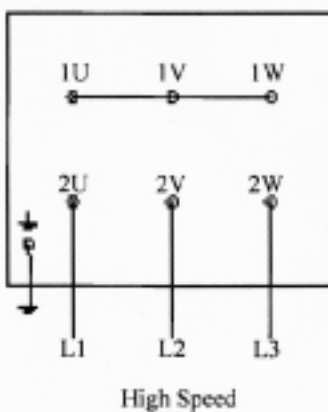
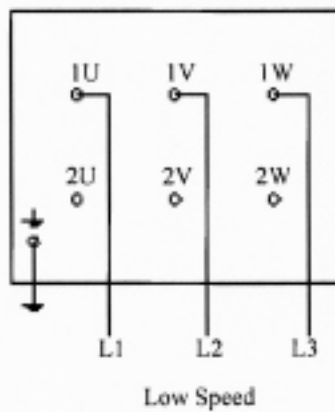
Wiring Diagram For Various Application



Multi-speed motors in Dahlander Connection (tapped winding)



Multi-speed with 2 separate Windings



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