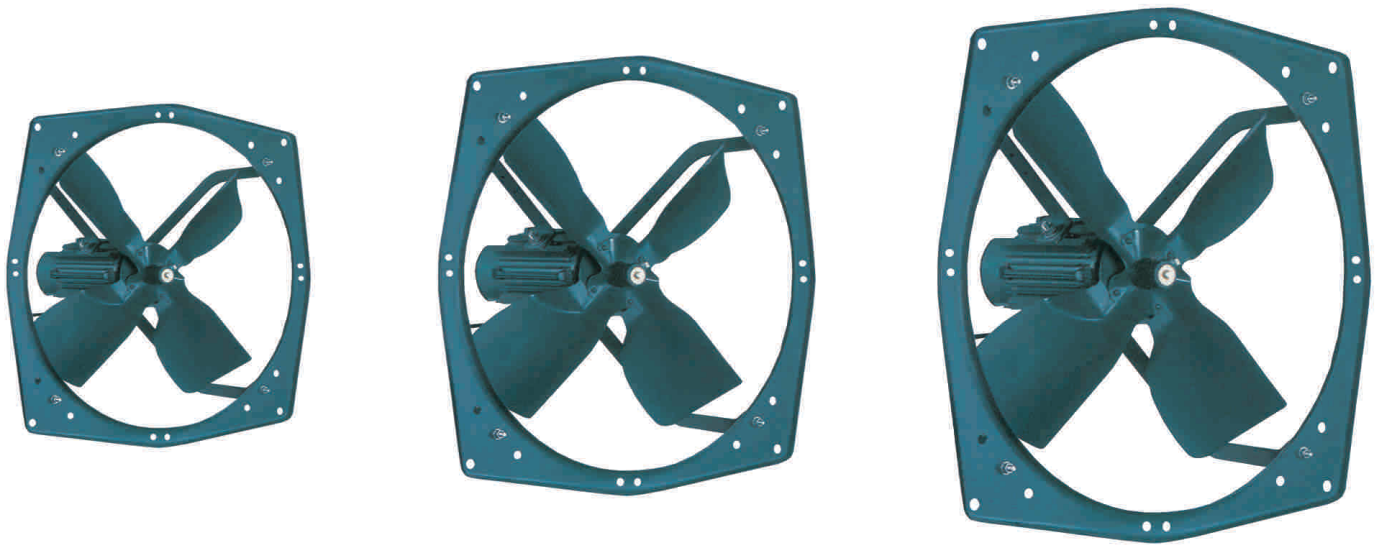
marathon® electric

A REGAL-BELOIT COMPANY

Industrial Fan



Fans for the Long Run!

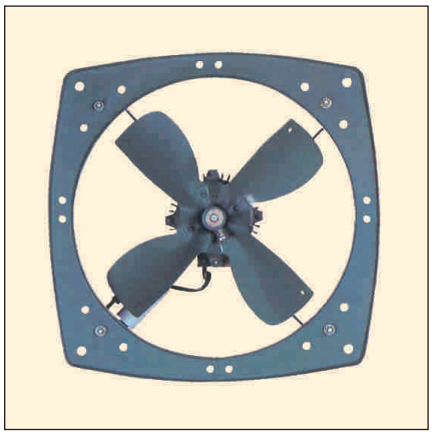
MARATHON Electric the pioneer and acknowledged leader for fans in India introduces GPN/BVN/BVA series fans. These fans are backed by extensive knowledge of design and application engineering of last 50 years of India's largest manufacture of fans and aided by latest manufacturing facility using CNC machine tools.

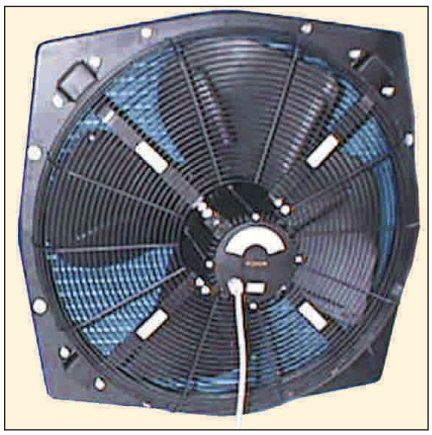
The products included in this catalogue are available off the shelf from local dealers/ godowns located throughout the country.

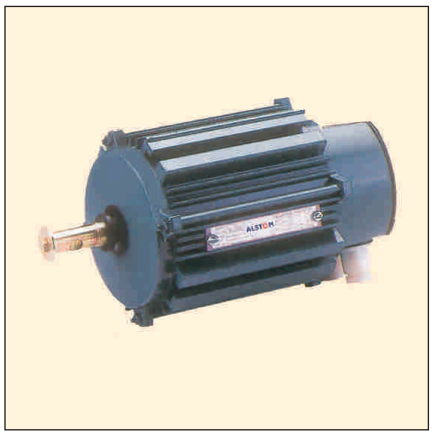
The plant is certified by BVQI for ISO9001 quality management system.

SN series (60 C/S supply) fan is certified by CSA for NRTL/C marking suitable for North American and Canadian markets.

CE marked fans complying to EU regulations suitable for European market are available.







Major Applications :

- ❏ Industrial Ventilation.
- ❏ Large Kitchen Ventilation.
- ❏ Transformer Cooling.
- ❏ Evaporative Air Cooler.
- ❏ Condenser Cooling.
- ❏ Controlled Air Movement.

Standards

INDIAN		INTERNATIONAL			
		European Standard (CE marking)		North American/ Canadian Standard (NRTL/C marking)	
Propeller type AC Ventilating fans	IS – 2312	Safety Requirements	EN 60 335 –1 EN 60 335 – 2 – 80	Fans & Ventilators	C22.2 No. 113-M1984
Evaporative air cooler (desert cooler)	IS – 3315				
Degree of Protection	IS – 4691	EMI/EMC	EN 50 082 – 2 EN 50 081 – 2	Safety - Electrical Fans	UL Std No. - 507

Features :

- 300 mm to 915 mm diameter.
- Volume flow from 1200 m^3 per hour to 28000 m^3 per hour.
- Static pressure upto 150 pa (15mm WG)
- SN series fan approved by CSA for NRTL/C marking as required for North American and Canadian markets are available.
- CE marked fan available for European market.
- Extruded/pressure die cast shell with provision for accurate positioning of impeller assembly to derive best air performance under static pressure.
- Unique fastening system with improved rigidity.
- Maintenance free operation.

Sizes :

- 300, 380, 450, 610 & 915 mm diameter.
- 4, 6, 8 & 10 pole Motor.

Supply :

- 230V/50 Hz/1 Ph.
- 400V/50Hz/3 Ph.
- 115V/230V/60Hz/1 Ph.
- 230V/460V/60Hz/3 Ph.

Fan Performance :

- Available installation options :

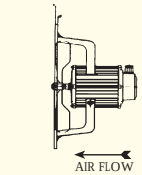
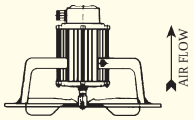
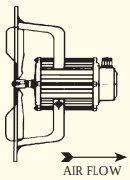
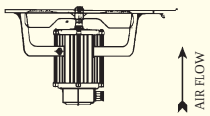
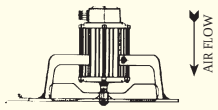
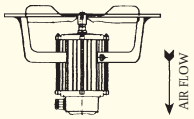
1. Ring mounting - High air volume suitable for FID condition - as standard.
2. Diaphragm mounting - High air volume required under static pressure - Optional.

Motor :

- Totally enclosed air over type squirrel cage induction motors specially designed for minimum power consumption, to cater desired fan characteres. Motors are provided with following features :
- Class B insulation (Class F - optional)
- Voltage/Frequency Variation :
  - Voltage Variation ± 10%
  - Frequency Variation ± 5%
- Temp. range : – 40°C to 50°C
- IP54 protection (IP55 optional).
- Tropicalization treatment.
- Permanently lubricated double sealed bearing with expected L10 life of 40,000 hours.

Form of running

Available mounting options :

CONFIGURATION	TYPE OF RUNNING	DESCRIPTION	CONFIGURATION	TYPE OF RUNNING	DESCRIPTION
	FORM A	Horizontal shaft, Air flow from motor end to blade end.		FORM D	Vertical shaft downward. Blade reversed. Air flow from blade end to motor end.
	FORM B	Horizontal shaft, Blade reversed. Air flow from blade end to motor end.		FORM E	Vertical shaft upward. Air flow from motor end to blade end.
	FORM C	Vertical shaft downward. Air flow from motor end to blade end.		FORM F	Vertical shaft upward. Blade reversed. Air flow from blade end to motor end.

Fan machine shop

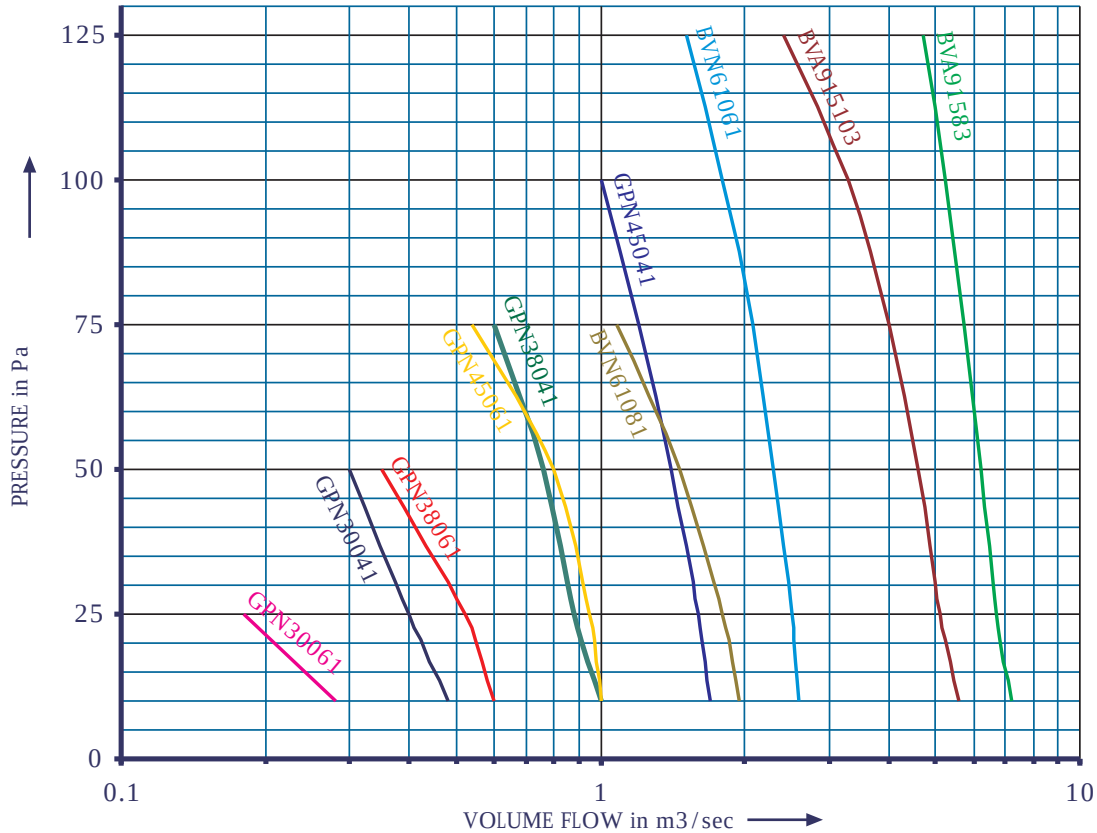
Manufactured in-house with care & expertise

Each and every fan is assembled, balanced, tested and packed in the factory through a structured in-process quality control system.

All major components which contributes to predetermined consistent performance are manufactured in the factory. The pressure die cast brackets and extruded shells are machined by CNC lathe to maintain high degree of accuracy and best output from motor.

Fan performance also depends on Impeller contour. Impellers are manufactured in-house by high precision tools using accurately curved press tools to maintain desired blade angle. Each Impeller is balance by Dynamic Balancing machine.

Air performance chart – 50 Hz



Ventilation requirement

Ventilation implies fresh air supply or extraction of air. The rate of ventilation conveniently measured in cubic meter per hour should be sufficient to satisfy the following requirements.

a) Extraction of Air.

b) Supply of Fresh Air.

c) And a combination of both of extraction and supply.

Recommended air changes

No hard and fast rules can be laid down for rates of air changes, the recommendation given in following table may be considered as a general guide.

TYPICAL SITUATION	AIR CHANGES PER HOUR	TYPICAL SITUATION	AIR CHANGES PER HOUR
Residences Churches Storage Areas	1 - 2	Cafes Canteens Dance Halls	8 - 12
Libraries Banks Class Rooms	2 - 4	Restaurants Domestic Kitchen Laundries	10 -15
Offices Assembly Halls Laboratories Cleaners	4 - 6	Canteen Kitchen Bakeries Dyers	15 - 30
Hospital ward & Treatment rooms Lavatories, Bathroom & Bars	6 - 8	Boiler houses Engine rooms Swimming baths	15 - 30
Theatres Cinemas Garages Workshops	6 -10	Paint Shops Foundries & Furnace Rooms	30 - 60

Performance Data - 50 Hz

Performance chart

MODEL	SWEEP (mm)	MOTOR	PHASE	SPEED (RPM)	VOLTAGE (V)	INPUT (W)	CURRENT (AMPS)	FREE AIR FLOW (m^3/hr.)
GPN30061	300	AF30	SINGLE	900	230	50	0.22	1200
GPN30041		AF30	SINGLE	1400	230	80	0.36	2000
GPN38061		AF45	SINGLE	900	230	85	0.41	2500
GPN38063		AF45	THREE	900	400	85	0.2	2500
GPN38041	380	AF45	SINGLE	1400	230	180	0.82	4200
GPN38043		AF45	THREE	1400	400	180	0.4	4200
GPN45061		AF55	SINGLE	900	230	132	0.6	4500
GPN45063		AF55	THREE	900	400	132	0.3	4500
GPN45041	450	AF55	SINGLE	1400	230	372	1.75	7000
GPN45043		AF55	THREE	1400	400	372	0.82	7000
BVN61063		BF80	THREE	900	400	500	1.0	10450
BVN61061		BF80	SINGLE	900	230	500	2.3	10450
BVN61081	610	BF80	SINGLE	700	230	240	1.1	7900
BVN61083		BF80	THREE	700	400	240	0.5	7900
BVA91583	915	CF83	THREE	700	400	1200	2.5	28000
BVA915103		CF83	THREE	550	400	700	1.5	22100

Performance Data - 60 Hz ✶

CSA File No. LR114613 - 2

MODEL	SWEEP (mm) (inch)	MOTOR	PHASE	SPEED (RPM)	VOLTAGE (V)	INPUT (W)	CURRENT (AMPS)	FREE AIR FLOW (m^3/hr.)
SN30043	300	AF30	THREE	1660	230	110	0.42	2300
SN30043			THREE	1660	460	110	0.23	2300
SN30041	(12")		SINGLE	1660	115	110	0.9	2300
SN30041			SINGLE	1660	230	110	0.45	2300
SN38043	380	AF55	THREE	1700	230	270	1.2	4600
SN38043			THREE	1700	460	270	0.6	4600
SN38041	(15")		SINGLE	1700	115	270	2.4	4600
SN38041			SINGLE	1700	230	270	1.0	4600
SN45043	450	AF90	THREE	1680	460	600	0.95	8250
SN45043			THREE	1680	230	600	1.90	8250
SN45041	(18")		SINGLE	1650	115	600	6.1	8250
SN45041			SINGLE	1650	230	600	2.7	8250
SN30063	300	AF30	THREE	1080	460	60	0.15	1400
SN30063			THREE	1080	230	60	0.3	1400
SN30061	(12")		SINGLE	1080	115	60	0.6	1400
SN30061			SINGLE	1080	230	60	0.32	1400
SN38063	380	AF55	THREE	1080	460	110	0.23	2900
SN38063			THREE	1080	230	110	0.46	2900
SN38061	(15")		SINGLE	1080	115	110	1.0	2900
SN38061			SINGLE	1080	230	110	0.52	2900
SN45063	450	AF90	THREE	1080	460	210	0.42	5000
SN45063			THREE	1080	230	210	0.85	5000
SN45061	(18")		SINGLE	1080	115	230	2.7	5000
SN45061			SINGLE	1080	230	230	1.1	5000
SN61063	610	BF100	THREE	1080	460	720	1.3	11000
SN61063			THREE	1080	230	720	2.6	11000
SN61061			SINGLE	1080	115	720	7.1	11000
SN61061	(24")		SINGLE	1080	230	720	3.3	11000
SN61083			THREE	810	460	500	0.95	8700
SN61083			THREE	810	230	500	1.8	8700
SN61081			SINGLE	810	230	500	2.4	8700
SN61081			SINGLE	810	115	500	5.0	8700
SN91583	915	CF108	THREE	810	460	1850	3.2	31000
SN91583			THREE	810	230	1850	6.4	31000
SN915103	(36")		THREE	650	460	1000	1.8	25000
SN915103			THREE	650	230	1000	3.6	25000

✶ Note : For SN Series, please seek works confirmation prior to finalization of order

Fan Selection

The procedure of estimating the rate of ventilation is to multiply the total interior space by the number of air change per hour for the respective space given in Fan selection guide. This gives the rate of air movement required in cubic meter per hour. Thus ventilation on the basis of the air change requirement is calculated as follows :

Air movement per hour = length x width x height of the building x recommended air changes per hour.

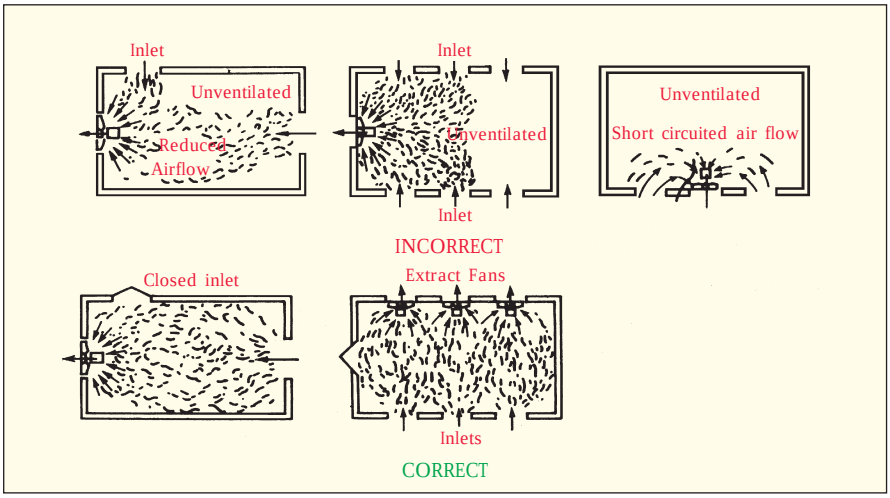
Situation	Recommended Air changes per hour	Size of	Air changes per hour	Typical Example		
				Air movement (m^3 / hr)	Qty (Nos.)	Model
Industrial						
Laboratories	4 - 6	10m x 8m x 4m = 320m^3	6	6 x 320 = 1,920	2 Nos.	GPN 30061
Factories / Workshops	6-10	30m x 20 m x 8 m = 4800 m^3	10	10 x 4800 = 48,000	7 Nos.	GPN 45043
Boiler Houses	15-30	20m x 15 m x 10m = 3000 m^3	30	30 x 3000 = 90,000	9/14 Nos.	BVN 61063/ GPN 45043
Foundries	30-60	30m x 10m x 8m = 2400 m^3	50	50 x 2400 = 1,20,000	12/18 Nos.	BVN 61063/ GPN 45043
Commercial / Domestic						
Banks	2 - 4	20m x 20m x 4m = 1600 m^3	4	4 x 1600 = 6,400	3 Nos.	GPN 38061
Assembly Halls	4 - 6	15m x 20m x 4m = 1200 m^3	6	6 x 1200 = 7,200	3 Nos.	GPN 38061
Offices	4 - 8	10m x 10m x 4m = 400m^3	8	8 x 400 = 3,200	2 Nos.	GPN 38061
Hospital (General Ward)/	6 - 8	20m x 15m x 8m = 2400m^3	8	8 x 2400 = 19,200	8 Nos.	GPN 38061
Cinemas / Theatres	6 - 10	30m x 20m x 10m = 6000m^3	10	10 x 6000 = 60,000	14 Nos.	GPN 45061
Canteens / Restaurants	8 - 14	20m x 10m x 8m = 1600m^3	12	12 x 1600 = 19,200	5 Nos.	GPN 38041
Kitchens (Domestic) & Toilets	13 - 30	3.5 mx 4m x 4m = 56m^3	30	30 x 56 = 1,680	1 No.	GPN 30041
Photographics Dark Rooms	20 -30	4m x 3m x 4m = 48m^3	25	25x48 = 1,200	1No.	GPN 38061

Positioning of fan

The fans should be positioned so that the fresh air drawn inside will permeate the entire room. Fans should not be installed in close proximity to doors or windows which maybe left open. In such cases, the air movement would be short circuited between the fans and adjacent inlets, and other parts of the room would remain non-ventilated.

Recommendation regarding positioning of industrial fan

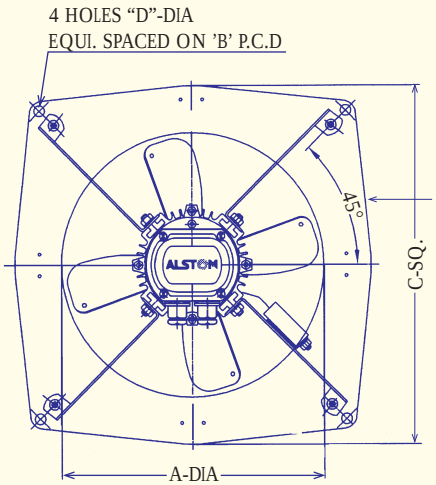
1. Install the exhaust fan in a window or wall farthest from the door. Replacement air will then flow over the whole of the occupied space.
2. Services are provided for effective selection of our fans.
3. Annual maintenance services are also provided.
4. In kitchen the best place for the exhaust fan will be in the wall adjacent to, but not directly above the cooker - the chief source of steam.
5. In large occupied spaces, the most effective ventilation will be obtained, when several small fans are installed instead of one or two large fans.

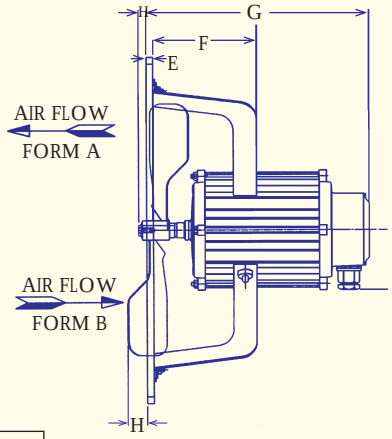


Typical positioning of fan

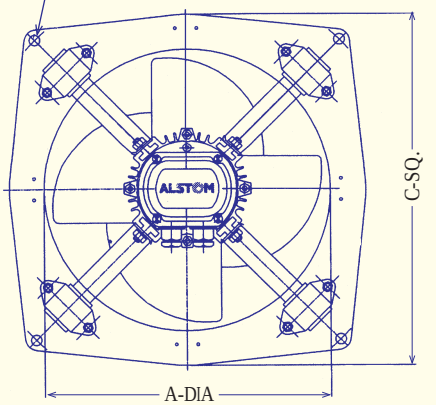
Speed control

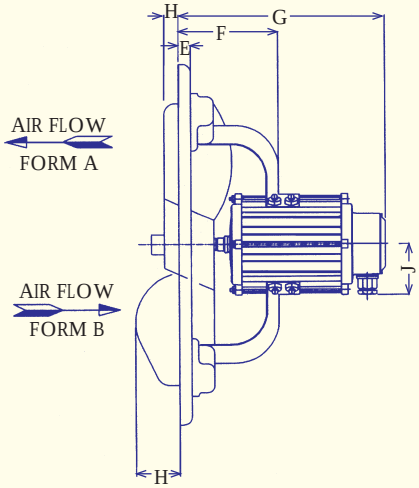
GPN series fans are designed to provide stable speed regulation. Substantial speed reduction is ineviatable accompanied by high rotor loss. The loss reaches its peak at 2/3rd Sync. / RPM. GPN series fans are suitable for speed regulation in entire range.



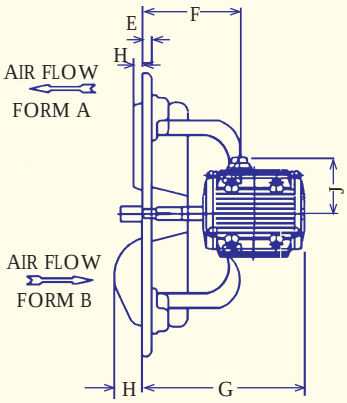


GPN FAN





BVN FAN



BVA FAN

GPN SERIES & BVN / BVA SERIES

BRAND	SWEEP	A	B	C	D	E	F	G	H		J	(APPROX) WT.(KG)
									FORM-A	FORM-B		
GPN	300	330	447.5	384	9.5	9.5	101.5	195	23	41	61	7.1
GPN	380	406	530	467	9.5	9.5	116.5	220	13	29	61	9.3
GPN	450	482	635	546	11	12.5	129.5	280	3.5	13.5	61	10.1
BVN	457	482.5	635	546	11	12.5	142.5	352	2	7	61	14
BVN	610	635	844	715	11	12.5	196.5	359	4	36	74	24
BVA	915	952	1181	1060	17	19	234	436	7	15	165	65

Note :

The dimension and weights given are standard. Any changes required for a definite application, may be refered to the Factory.

Accessories

Following accessories are also available as an extra features to our fans.

- Louvre Shutters
- Wall Cowl
- Wire Guard
- RE Unit

marathon®
electric
A REGAL-BELOIT COMPANY

Spe[redacted]om built motors • Specialists in short cycle deliveri[redacted]

MEMI/CAT/IF/1108/02 Replaces RMG–IF–FE–TC 003.01/2008