

NUAIRE

Axial Flow Fans

DuctMaster Circular Bifurcated

Installation and Maintenance

NUAIRE

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AUGUST 1999

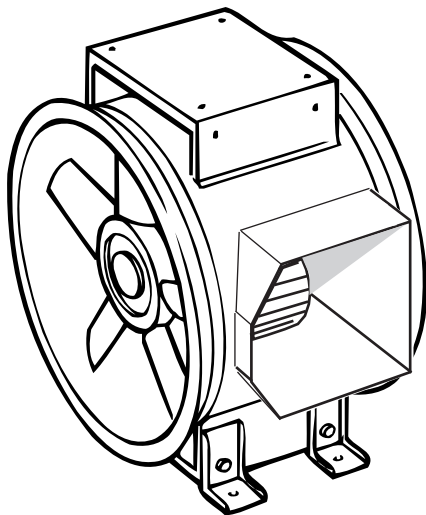


Fig. 1. General view of unit.

Introduction

The NuAire DuctMaster bifurcated range of Axial Flow Fans are produced in seven case sizes from 315mm dia. to 630mm dia. with duties from 0.25m³/s to 5.25m³/s. The units are available in standard or high temperature types.

Impellers have been selected at 5 degree blade intervals matched to various motor speeds to provide a range of units that will suit your specific individual performance requirements.

Blades are adjustable and can be reset to suit final system resistances if necessary. However, we strongly recommend that you contact NuAire before any blade angle changes are undertaken.

NuAire will not accept responsibility for damaged units when unauthorised personnel have altered blade angles. Units are available for both single or three phase operation. Some units are suitable for inverter speed control, contact NuAire for full details.

NuAire DuctMaster Bifurcated fans have been tested to BS 848 in our BSI approved laboratories. This ensures that all technical data is accurate and that all units can be specified with confidence.

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General Description

The DuctMaster Bifurcated range of Axial Flow Fans has been designed specifically for ease of installation into new or existing ductwork systems. Each fan is supplied complete with two matching flanges, self sealing clamping collars and four mounting feet with fixings. The fan casing incorporates two integral, opposed, mounting pads. Each pad has multiple fixing holes for the feet allowing installation in any mounting plane.

Anti-vibration Mounting kits are available on request.

The case flanges mate with ductwork etc using single bolt quickfit clamping collars.

A full range of ancillaries is available including matching Silencers, Flexible Connectors, Wall Support Brackets and Controls.

Many fans are fully compatible with Microsave and conventional controls (For controls see Data Sheet Leaflet No 670673 for full details).

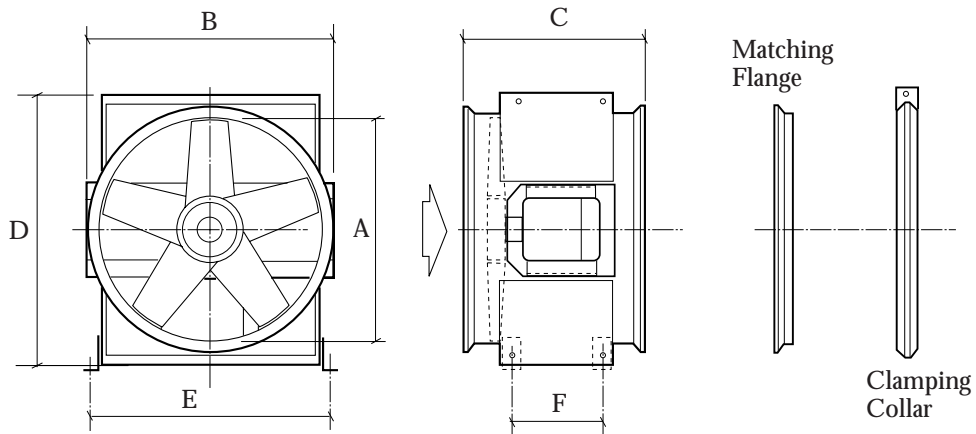
Ductmaster models are also available polyester powder painted for external use.

WARNING!

1. DO NOT REVERSE IMPELLER DIRECTION FOR OPERATION AS THE PERFORMANCE OF THE UNIT IS DRASTICALLY REDUCED (SEE START UP PROCEDURE).
2. DO NOT ALTER THE BLADE ANGLE OF THE IMPELLER WITHOUT THE PERMISSION OF NUAIRE.

THE ABOVE MAY INVALIDATE YOUR WARRANTY

Fan Dimensions

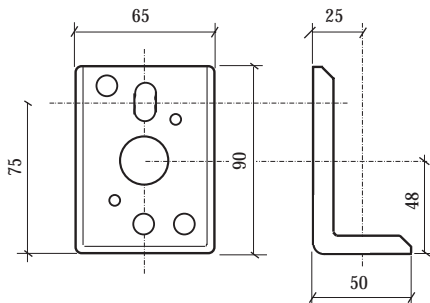


Dimensions (mm)

| Unit Code | A | B | C | D | E | F | G | Unit Weight (kg) | |
|---------------------|-----|-----|-----|-----|-----|-----|-----|------------------|--------|
| | | | | | | | | 2 Pole | 4 Pole |
| DCB 315 | 310 | 360 | 433 | 369 | 298 | 265 | 168 | 22 | 22 |
| DCB 350 | 345 | 395 | 433 | 427 | 339 | 265 | 168 | 25 | 25 |
| DCB 400 | 395 | 445 | 500 | 442 | 384 | 218 | 168 | 31 | 28 |
| DCB 450 | 445 | 475 | 500 | 514 | 424 | 319 | 168 | 38 | 32 |
| DCB 500 | 493 | 545 | 605 | 555 | 488 | 326 | 168 | 49 | 43 |
| DCB 560 (4 Pole) | 553 | 605 | 606 | 633 | 565 | 278 | 168 | - | 43 |
| DCB 560 (2 Pole) | 553 | 605 | 606 | 633 | 527 | 418 | 168 | 55 | - |
| DCB 630 (4 Pole) | 622 | 674 | 651 | 729 | 615 | 428 | 168 | - | 65 |
| DCB 630 (2 Pole) | 622 | 674 | 651 | 751 | 619 | 468 | 168 | 84 | - |

Mounting Foot

Four mounting feet are supplied with each unit or silencer, see main fixing drawings. M8 fixing screws are included.



Handling

The DuctMaster fan impeller is carefully balanced prior to despatch. Care must be taken on site when handling the unit not to damage or distort the blades or alter the motor position. Do not pass lifting slings etc through the impeller. Always use the mounting pads (top or bottom) for sling attachments.

The fan is supplied with installation accessories i.e. two matching flanges, two clamping collars and four mounting feet attached. These items are fitted before delivery to ensure parts are not lost on site. If the optional flexible connectors are specified these will be fitted for delivery to the customer. However care must be taken when handling the unit assembly as the flexibles can be distorted or damaged.

Installation

Application

Unit

For external use it is good practice that the unit is installed so that the motor tunnel is horizontal. Also the unit will be painted RAL9014 (grey) which is suitable for maximum temperatures of 230°C.

For internal use it is good practice that the unit be installed so that the motor tunnel is vertical for a horizontal airflow.

Prior to installation the impeller should be rotated by hand to check for smooth rotation and that no transit damage has occurred.

Horizontal on floor etc.

Before commencing work it will be necessary to remove the clamping collars and loose flanges. Simply unscrew the clamp nut using a suitable spanner.

Note: during installation, ensure that the flanges are mated together correctly before tightening the clamps.

The position of the shakeproof washers on the foot mountings is important as these washers are fitted to restrain any longitudinal movement of the feet. See fixing details on page 6 noting that you have a choice of two holes when fitting the feet for floor mounting.

If the optional resilient mountings have been chosen these should be attached to the unit feet at this stage. See Resilient Mounting assembly (floor mtg) drawing on page 6.

Note that the large steel safety washers in the mounting kit are not required for floor mounting and can be discarded. Details of resilient mounting kit selection is shown in the table on the same page.

If the optional wall support brackets are to be used they

could be attached to the feet of the fan in order to determine the ducting centreline relative to the mounting plane. (Foot fixing centres are shown on fixing details drawing which should allow the brackets to be pre fitted to the wall ready to accept the fan assembly).

Consider the position of the fans electrical terminal box when choosing an installation position.

Assuming that the position for mounting has been chosen, and any wall brackets (if used) are already correctly located, stand or support the unit in place and check the unit is aligned with the ductwork in both horizontal and vertical planes. A degree of adjustment is provided on the feet but it may be necessary to pack up the height under the mounting feet. See fixing details on page 9.

Mark on the floor / structure the fixing positions for the feet or resilient mountings and if necessary drill suitable holes to accept bolt or screw fixings (screws not supplied).

If matching silencers are to be installed, these should be fitted to the fan with any other accessories such as flexible connectors etc. before installation and the complete assembly mounted in position using the same procedure.

The matching flanges if required on the installation are fixed to the ductwork ends with rivets etc. Ensure the clamping collars have been placed onto the ducting before drawing the flanges together. Note: make sure the flange faces are properly mated before fitting and tightening the clamping collars.

Suspended horizontally or vertically

The only difference for suspension is in the positioning of the mounting feet which are now fixed to the sides of the mounting pads by the smaller single hole leg of the feet. See fixing details on page 9.

If Resilient Mountings are to be included note that the rubber mountings **must** remain in compression - this involves fixing the rubber mounting upside down inside the foot. The large metal safety washers **must** be fitted under the studding nuts on each mounting. See Resilient Mounting assembly (suspended) drawing on page 6.

General.

Motors are totally enclosed and protected to IP55 (Dust and low pressure water jets). Motors may incorporate drain holes to allow any condensation to escape from the motor casing. **It is essential therefore that these drain holes are positioned at the lowest point of the fan motor when the unit is horizontally mounted.**

All bearings are pre-packed with grease and sealed for life.

Connection details

Check that the voltage on the fan rating label is suitable for your supply. Full load / starting currents are also indicated.

The fan unit incorporates a terminal box on the motor exterior. Units for external use require weatherproof conduit and glands.

Motors up to and including 3kW are designed for Direct On Line starting. Motors with outputs of 4kW and above are suitable for Direct On Line or Star/Delta starting.

Flameproof motors are generally supplied for wiring and connection, direct to the motor terminals, on site by the installer (special wiring instructions must be provided by NuAire). Connections and fittings used must be in accordance with current BASEEFA approved standards and requirements.

Motor overload protection should be set to the full load current on the fan rating label. Supply fuses should be H.R.C. type.

Start up procedure

When starting ensure that the impeller rotation follows the label arrow indicator on the casing. Should the direction be incorrect on three phase units, reverse any two of the supply leads. See wiring diagrams pages 10. (Do not reverse the impeller direction permanently).

Equipment should be run for approximately 30 minutes to ensure correct operation. If any fault occurs, the equipment should be switched off. Do not re-start until the fault has been rectified.

Accessory Installation

Flexible Connections - Care must be taken when installing flexible connections to ensure that duct misalignment is not corrected by the flexible connection. Both duct misalignment and slack connections cause unnecessary pressure losses in the system.

Anti-Vibration Mountings - Anti-vibration mounts cannot be fitted to a fan unless there are flexible connectors between the fan or fan silencer combination casing and the ducting. On combination fan/silencer installations only four foot mountings are used, see fixing details on page 9.

Suspension mounts in particular should be adjusted on the drop rods to carry an equal proportion of the total fan weight when installed, as unevenly adjusted mountings could carry a load greater than the design condition.

Anti-Backdraught Dampers - Anti-Backdraught Damper should be checked for transit damage prior to installation. Damper blades should be open and closed to ensure smooth operation.

Maintenance

NuAire recommends all products maintained in accordance with the HVCA "Standard Maintenance Specification for Mechanical Services in Buildings" - Volume II Ventilating and Air Conditioning.

For guidance only

Due to the different periods of operation from the time of installation and conditions of use, no rigid inspection and maintenance periods can be recommended. We suggest, therefore that the inspection and if necessary cleaning / bearing check should be carried out at regular intervals of a maximum of six months.

For a routine inspection, check the tightness of all nuts, keys, grubscrews and endbolts etc. Remove any build up of dirt or dust with a brush.

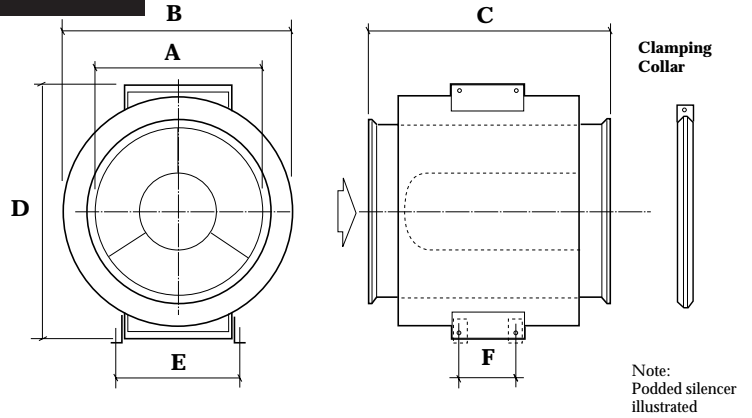
Silencers

DCS315S to DCS630S.
Short Un-podded.

DCS315L to DCS630L.
Long Un-podded.

DCSP315S to DCSP630S.
Short Podded.

DCSP315L to DCSP630L.
Long Podded.



| Dimensions (mm) Unit Code | A | B | C | | D | E | F | | Weight (kg) | | | |
|------------------------------|-----|-----|-------|------|-----|-----|-------|------|--------------|--------------|-------------|-------------|
| | | | Short | Long | | | Short | Long | Short Podded | Short No Pod | Long Podded | Long No Pod |
| DCS 315 | 310 | 410 | 374 | 684 | 450 | 355 | 230 | 230 | 11.0 | 7.0 | 17.0 | 13.0 |
| DCS 350 | 345 | 445 | 409 | 754 | 510 | 355 | 230 | 230 | 14.0 | 10.0 | 24.0 | 17.0 |
| DCS 400 | 395 | 495 | 459 | 854 | 540 | 405 | 230 | 230 | 16.0 | 12.0 | 29.0 | 22.0 |
| DCS 450 | 445 | 545 | 509 | 954 | 600 | 405 | 230 | 230 | 23.0 | 19.0 | 37.0 | 30.0 |
| DCS 500 | 493 | 643 | 557 | 1050 | 666 | 502 | 230 | 230 | 29.0 | 25.0 | 45.0 | 37.0 |
| DCS 560 | 553 | 703 | 617 | 1170 | 726 | 565 | 230 | 230 | 32.0 | 29.0 | 47.0 | 40.0 |
| DCS 630 | 622 | 772 | 686 | 1308 | 795 | 630 | 230 | 230 | 36.0 | 34.0 | 58.0 | 52.0 |

Construction

NuAire DuctMaster attenuators for Bifurcated units are manufactured with a rigidly constructed, cylindrical galvanised steel casing. The casing is lined internally with sound absorbent material which has excellent acoustic properties, is non-hygroscopic and also incombustible. The material is retained by a perforated aluminium liner.

Each silencer has two opposed mounting pads with multiple mounting feet fixing points.

Flanges are quickfit type to match the DuctMaster Bifurcated axial fans.

Four mounting feet, feet fixings and a clamping collar are supplied with each silencer.

When a pod is fitted it is constructed of perforated aluminium with an infill of the acoustic material.

Silencer Types

Two types of cylindrical silencer are available:

Unpodded : Ref = DCS

Podded : Ref = DCSP

(The introduction of the pod considerably improves the attenuation but increases resistance to airflow).

Two standard lengths of silencers are available:

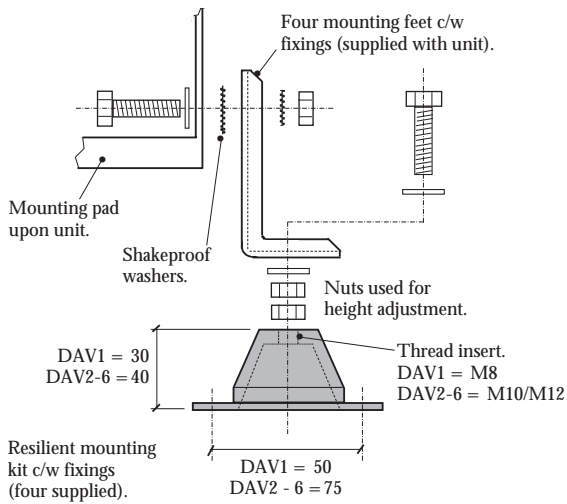
Short : Ref = S

Long : Ref = L

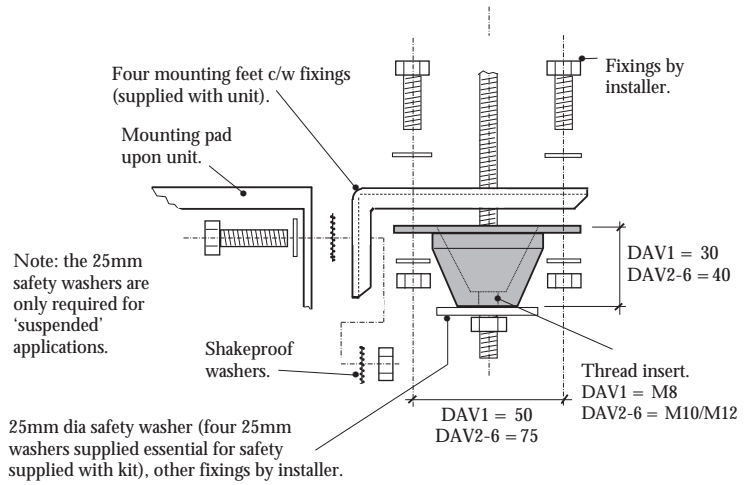
Examples:

- DCSP 315 S** is a short silencer with a pod.
- DCS 315 L** is a long silencer without a pod.

Resilient Mounting 'Floor' fixing



Resilient Mounting 'Suspended' fixing



Resilient Mounts

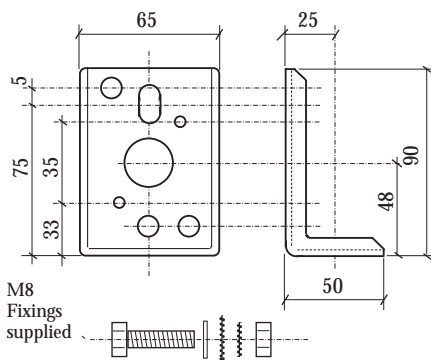
The above anti vibration mountings are available for the DuctMaster Bifurcated range of axial flow fans. See selection table opposite.

Kits are supplied for unit or unit silencer combinations and comprise the requisite number of resilient mounts for 'floor' or 'suspension' use (see details above).

Resilient mounting kit (selection)

| Unit Code | Unit Motor Poles (kw) | Unit Only | Unit Plus One Short Silencer | | Unit Plus Two Short Silencers | | Unit Plus One long Silencer | | Unit Plus Two long Silencers | |
|-----------|-----------------------|-----------|------------------------------|--------|-------------------------------|--------|-----------------------------|--------|------------------------------|--------|
| | | | Pod | No Pod | Pod | No Pod | Pod | No Pod | Pod | No Pod |
| DCB315 | 2 & 4 | DAV1 | DAV2 | DAV2 | DAV2 | DAV2 | DAV2 | DAV2 | DAV5 | DAV2 |
| DCB350 | 2 & 4 | DAV2 | DAV2 | DAV2 | DAV2 | DAV2 | DAV2 | DAV2 | DAV5 | DAV2 |
| DCB400 | 2 | DAV2 | DAV2 | DAV2 | DAV2 | DAV2 | DAV2 | DAV2 | DAV5 | DAV5 |
| | 4 | DAV2 | DAV2 | DAV2 | DAV2 | DAV2 | DAV2 | DAV2 | DAV5 | DAV5 |
| DCB450 | 2 (10° -20°) | DAV2 | DAV2 | DAV2 | DAV5 | DAV5 | DAV5 | DAV2 | DAV5 | DAV5 |
| | 2 (21° -25°) | DAV2 | DAV2 | DAV2 | DAV5 | DAV5 | DAV5 | DAV2 | DAV5 | DAV5 |
| | 4 | DAV2 | DAV2 | DAV2 | DAV5 | DAV2 | DAV2 | DAV2 | DAV5 | DAV5 |
| DCB500 | 2 | DAV2 | DAV5 | DAV5 | DAV5 | DAV5 | DAV5 | DAV5 | DAV5 | DAV5 |
| | 4 | DAV2 | DAV5 | DAV2 | DAV5 | DAV5 | DAV5 | DAV5 | DAV5 | DAV5 |
| DCB560 | 2 | DAV2 | DAV5 | DAV5 | DAV5 | DAV5 | DAV5 | DAV5 | DAV5 | DAV5 |
| | 4 | DAV2 | DAV5 | DAV2 | DAV5 | DAV5 | DAV5 | DAV5 | DAV5 | DAV5 |
| DCB630 | 2 (10°) | DAV5 | DAV5 | DAV5 | DAV5 | DAV5 | DAV5 | DAV5 | DAV3 | DAV3 |
| | 2 (12°-15°) | DAV5 | DAV5 | DAV5 | DAV3 | DAV3 | DAV3 | DAV3 | DAV3 | DAV3 |
| | 4 | DAV5 | DAV5 | DAV5 | DAV5 | DAV5 | DAV5 | DAV5 | DAV3 | DAV5 |

Mounting Foot details



Mounting Foot Notes

Four mounting feet are supplied with each unit or silencer, see main dimension drawings. M8 fixing screws are included.

Note: See fixing details, page 9.

Ancillaries

Flexible Connectors

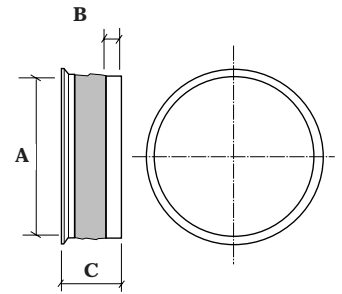
Circular with a single quickfit flange. Flexible duct material is flameproof and resistant to chemicals, ozone, oil, grease and heat up to 90°C & 230°C (see codes). The spigot is of light gauge galvanised steel. The connector is airtight, waterproof and tested to BS476 Part 7.

CODES: DCFX 315
(typical 90°C)
DCFH 315
(typical 230°C)

Dimensions (mm)

| Nom. Dia | A | B | C |
|----------|-----|----|-----|
| 315 | 310 | 50 | 168 |
| 350 | 345 | 50 | 168 |
| 400 | 395 | 50 | 168 |
| 450 | 445 | 50 | 168 |
| 500 | 493 | 50 | 168 |
| 560 | 553 | 50 | 168 |
| 630 | 622 | 50 | 168 |

Details shown are for units up to 90°C



Resilient Mountings

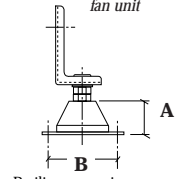
A set of AVs are matched to the unit or unit /silencer combination. The resilient mounts supplied for use with the DuctMaster range are suitable for use in floor mounted or hanging type applications.

Note: A/V Kits DAV 7 and above are combinations of the above.

Dimensions (mm)

| Code | A | B |
|-------|----|----|
| DAV 1 | 30 | 50 |
| DAV 2 | 40 | 75 |
| DAV 3 | 40 | 75 |
| DAV 4 | 40 | 75 |
| DAV 5 | 40 | 75 |
| DAV 6 | 40 | 75 |

Note:
Mounting feet
supplied with
fan unit



CODES: DAV (typical)

Backdraught Dampers

Gravity operated damper to prevent back-draughts. Manufactured in heavy gauge galvanised steel with a pair of quickfit flanges

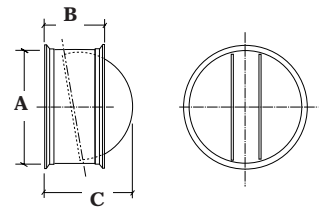
Standard Accessory Losses (k)
(Airstream operated)



CODES: DCBD 315 (typical)

Dimensions (mm) & Weights

| Dia.mm | A | B | C | Weight(Kg) |
|--------|-----|-----|-----|------------|
| 315 | 310 | 333 | 360 | 7.5 |
| 350 | 345 | 333 | 360 | 9.0 |
| 400 | 395 | 333 | 360 | 11.0 |
| 450 | 445 | 333 | 360 | 14.0 |
| 500 | 493 | 333 | 390 | 16.5 |
| 560 | 553 | 333 | 420 | 20.0 |
| 630 | 622 | 333 | 450 | 22.5 |



Inlet Cone (wire guard optional)

Manufactured in heavy gauge galvanised steel with a single quickfit flange.

Standard Accessory Losses (k)

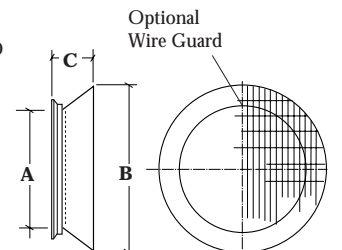
Low loss inlet cone → 0.38
Flat type Finger guard → 0.75

CODES: DCIC 315 (typical)

DCIG 315 (typical)
with wire guard

Dimensions (mm) & Weights

| Dia.mm | A | B | C | Weight(Kg) |
|--------|-----|-----|-----|------------|
| 315 | 310 | 400 | 70 | 2 |
| 350 | 345 | 450 | 70 | 2 |
| 400 | 395 | 510 | 85 | 3 |
| 450 | 445 | 570 | 95 | 4 |
| 500 | 493 | 640 | 105 | 5 |
| 560 | 553 | 715 | 115 | 6 |
| 630 | 622 | 800 | 125 | 9 |



Wire Guards

Hot dipped galvanised for either inlet or outlet fixing. Fitted with a single quickfit flange.

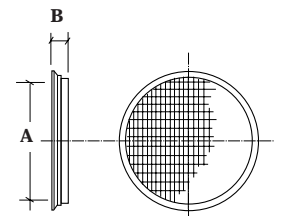
Standard Accessory Losses (k)

Flat type Finger guard → 0.75

CODES: DCGD 315 (typical)

Dimensions (mm) & Weights

| Dia. mm | A | B | Weight (Kg) |
|---------|-----|----|-------------|
| 315 | 310 | 30 | 0.5 |
| 350 | 345 | 30 | 0.9 |
| 400 | 395 | 40 | 1.5 |
| 450 | 445 | 45 | 1.7 |
| 500 | 493 | 45 | 2.3 |
| 560 | 553 | 45 | 2.8 |
| 630 | 622 | 45 | 3.2 |



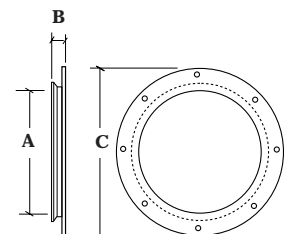
Quickfit to Bolted flange connector

To convert a quick fit flange to a bolted flange. Manufactured from heavy gauge galvanised steel.

CODES: DCQB315 (typical)

Dimensions (mm) & Weights

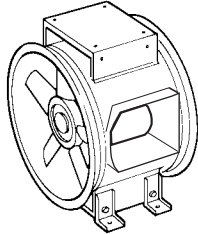
| Dia. mm | A | B | C | Weight(Kg) |
|---------|-----|-----|----|------------|
| 315 | 310 | 375 | 45 | 1.2 |
| 350 | 345 | 421 | 45 | 1.2 |
| 400 | 395 | 475 | 55 | 1.9 |
| 450 | 445 | 520 | 55 | 1.9 |
| 500 | 493 | 585 | 60 | 3.2 |
| 560 | 553 | 645 | 60 | 4.6 |
| 630 | 622 | 715 | 60 | 5.0 |



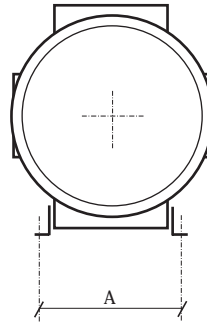
Fixing Details

Unit only

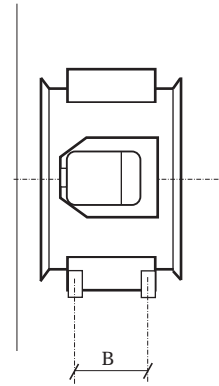
Supported horizontally from floor.



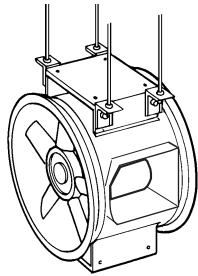
End view



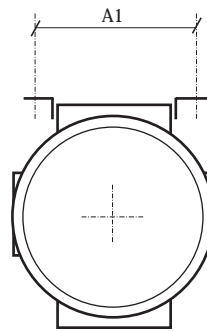
Side view



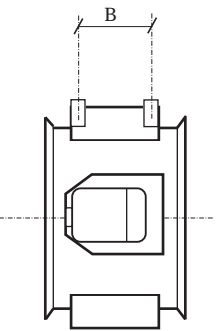
Suspended horizontally from above.



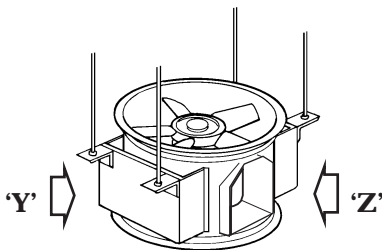
End view



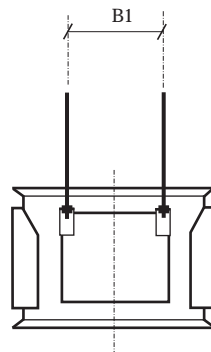
Side view



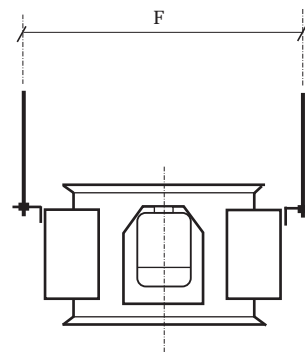
Suspended vertically from above.



View on 'Y'



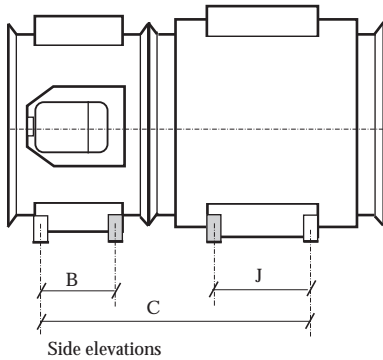
View on 'Z'



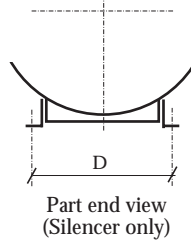
Dimensions of fixing centres

| Unit Code | Dimensions (mm) between foot fixing hole centres | | | | | | | | | | | | | | | Drop** rods and bolt sizes for AV mounts | |
|--------------|--|-----|-----|-----|------------------|-----------------|-----|-----|------------------|-----------------|-----|-----|-----|------------------|-----------------|--|--|
| | A | | B | | C | | D | | E | | F | | G | | H | | |
| | A | A1 | B | B1 | short silencer C | long silencer C | D | D1 | short silencer E | long silencer E | F | G | H | short silencer J | long silencer J | | |
| DCB315 2 & 4 | 298 | 348 | 265 | 188 | 656 | 811 | 355 | 405 | 1041 | 1351 | 469 | 483 | 243 | 230 | 230 | M8/M10 | |
| DCB350 2 & 4 | 339 | 389 | 266 | 229 | 675 | 847 | 355 | 405 | 1077 | 1421 | 527 | 518 | 243 | 230 | 230 | M8/M10 | |
| DCB400 2 & 4 | 384 | 434 | 218 | 274 | 708 | 905 | 405 | 455 | 1194 | 1588 | 542 | 568 | 293 | 230 | 230 | M10 | |
| DCB450 2 & 4 | 424 | 474 | 319 | 314 | 784 | 1003 | 405 | 455 | 1244 | 1682 | 614 | 618 | 293 | 230 | 230 | M10 | |
| DCB500 2 & 4 | 484 | 534 | 294 | 374 | 830 | 1076 | 502 | 552 | 1362 | 1854 | 653 | 716 | 393 | 230 | 230 | M10 | |
| DCB560 4 | 562 | 612 | 256 | 452 | 841 | 1117 | 565 | 615 | 1422 | 1974 | 732 | 776 | 453 | 230 | 230 | M10 | |
| DCB560 2 | 530 | 580 | 256 | 420 | 841 | 1117 | 565 | 615 | 1422 | 1974 | 732 | 776 | 453 | 230 | 230 | M10 | |
| DCB630 4 | 616 | 666 | 391 | 506 | 943 | 1254 | 630 | 680 | 1490 | 2112 | 825 | 845 | 523 | 230 | 230 | M10 | |
| DCB630 2 | 596 | 646 | 391 | 486 | 943 | 1254 | 630 | 680 | 1490 | 2112 | 825 | 845 | 523 | 230 | 230 | M10 | |
| DCB630 2 | 596 | 646 | 391 | 486 | 943 | 1254 | 630 | 680 | 1490 | 2112 | 825 | 845 | 523 | 230 | 230 | M10 | |

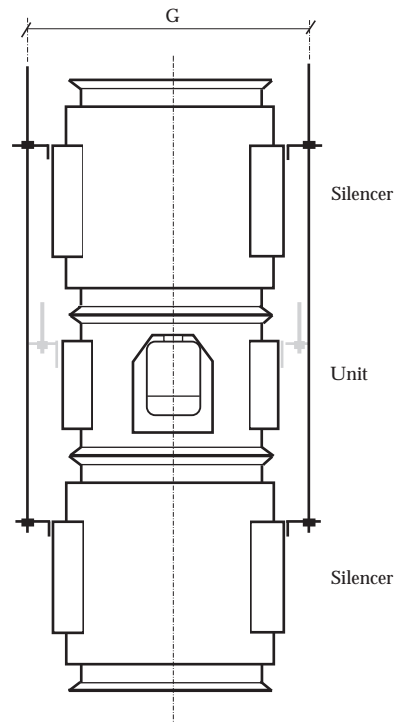
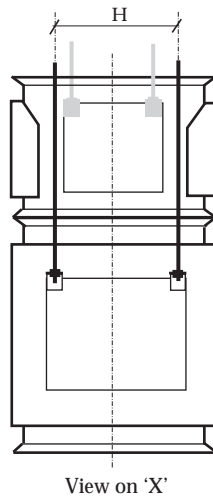
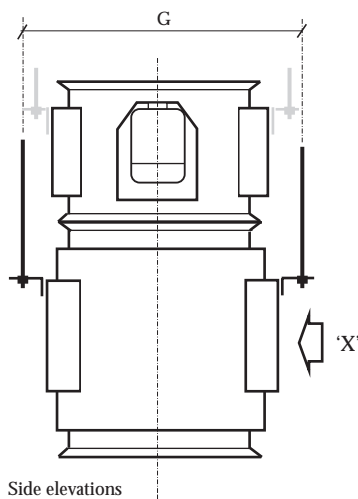
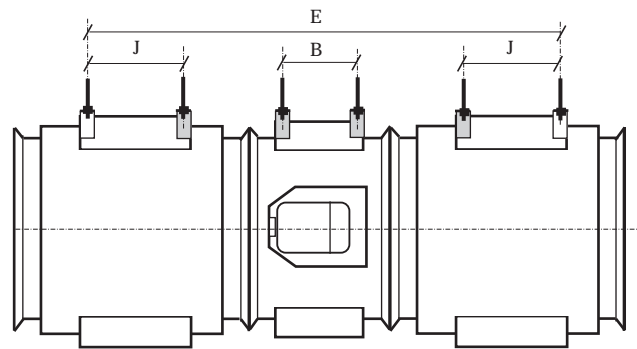
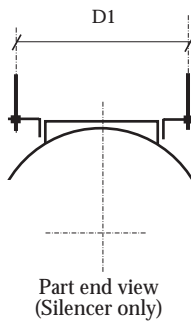
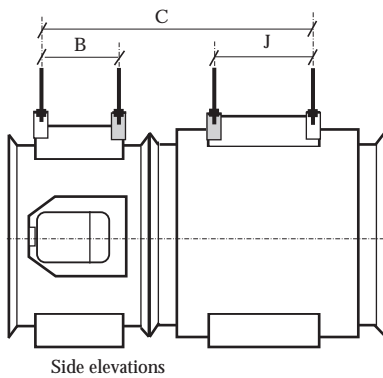
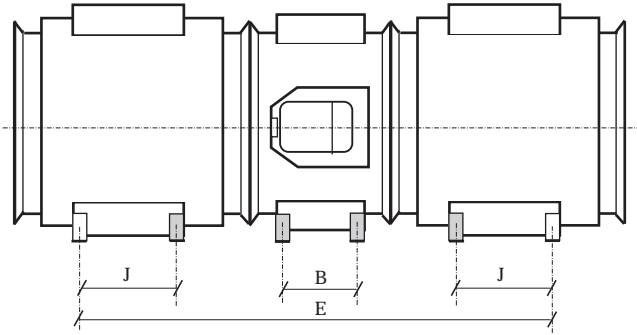
Unit + one silencer



NOTE:
Outer mountings only required on units up to 630. Additional mounts for heavier units shown shaded. Call NuAire for full details.



Unit + two silencers



INSTALLATION NOTES:

For internal use it is good practice that the unit be installed so that the motor 'tunnel' is vertical to provide a natural vertical movement of air cooling the motor. In this attitude, the mounting feet would be fixed to the mounting pad 'faces'.

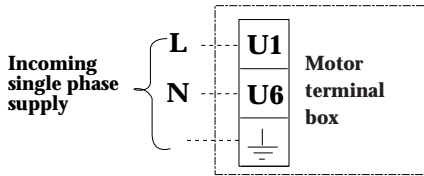
For external use it is good practice that the unit be installed with the motor 'tunnel' horizontal. In this attitude, the mounting feet would be fixed to the mounting pad sides.

NOTE:
4 Drop rods only required on units up to 630. Additional rod positions are shown shaded.

Electrical Information

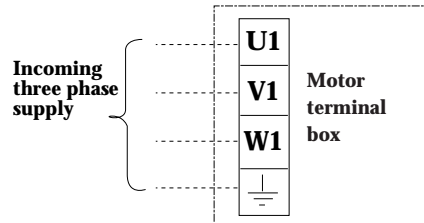
Wiring Details

1 PHASE SINGLE SPEED



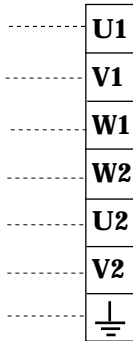
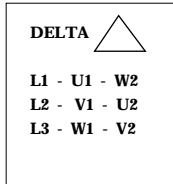
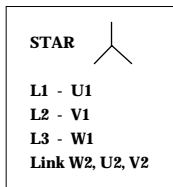
230V 1 phase 50Hz supply

3 PHASE FOR D.O.L. STARTING

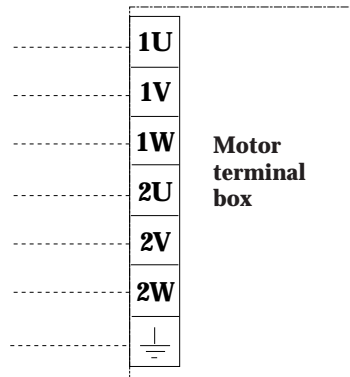


400V 3 phase 50Hz supply

3 Phase for Star / Delta starting (4kW and above)



2 SPEED TAP/ PAM WOUND MOTOR (D.O.L. starting both speeds)



NOTE:

LOW SPEED - Supply: 1U 1V 1W

HIGH SPEED - Supply: 2U 2V 2W
LINK 1U 1V 1W

400V 3 phase 50Hz supply

Speed Controls, Starters & Isolators (see easy selection tables) Dimensions(mm)

| Unit type or code | Transformer speed controls | | | | | | | | Isolators | Starters | MicroSave controls | |
|-------------------|----------------------------|----------|----------|----------|-----------|------------|-----------|-----------|-----------|----------|--------------------|-----------|
| | SP CON 4 | SP CON 5 | SP CON 6 | SP CON 7 | 3SP CON 1 | 3SP CON 1A | 3SP CON 2 | 3SP CON 4 | | | | 3SP CON 7 |
| Depth | 75 | 105 | 105 | 110 | 110 | 110 | 110 | 135 | 135 | 90 | 47 | 37 |
| Height | 140 | 185 | 185 | 255 | 253 | 253 | 253 | 309 | 309 | 135 | 148 | 87 |
| Width | 315 | 315 | 315 | 190 | 188 | 188 | 188 | 262 | 262 | 95 | 88 | 147 |

MICROSAVE Controls

DuctMaster Bifurcated is compatible with Microsave Starters and Speed Controls:

SEE INSIDE REAR COVER For further details refer to:
Microsave/Masterclass Selection Guide Leaflet No. 670588 and
Technical Data Sheet Nos. 670578 'Speed Controls' 670579 'Starters'.

For Microsave wiring information please refer to:
Microsave Starter controls Leaflet No. 670579
Microsave Speed controls Leaflet No. 670578

NUAIRE



DECLARATION OF CONFORMITY

NuAire Limited,
Western Industrial Estate,
Caerphilly, Mid Glamorgan,
CF83 1XH. United Kingdom.
Telephone: 01222 885911
Fax: 01222 887033
Email: info @ nuaire.co.uk



Leaflet

OCTOBER 1998

*We declare that the machine named below
conforms to the requirements of EC Council Directives
relating to Electromagnetic Compatibility and
Safety of Electrical Equipment.*

| | |
|--|---|
| Designation of machinery :- | DUCTMASTE BIFURCATED FAN |
| Machinery Types :- | DCB |
| Relevant EC Council Directives :- | 89/336/EEC, 92/31/EEC (EMC) 73/23/EEC, 93/68/EEC (Low Voltage Directive) |
| Applied Harmonised Standards :- | E50081-1, EN50082-1, EN60204-1 EN60335-2-80 |
| Basis of Self Attestation :- | Quality Assurance to BS EN ISO 9001 BSI Registered Firm Certificate No. FM 149 |

Signature of manufacture representatives :-

| | Name: | Position: | Date: |
|----|---|------------------------|--------------|
| 1) |  C. Biggs | Technical Director | 2. 4. 98 |
| 2) |  Michael J. Fussell | Manufacturing Director | 2. 4. 98 |

DECLARATION OF INCORPORATION & INFORMATION FOR SAFE INSTALLATION, OPERATION & MAINTENANCE

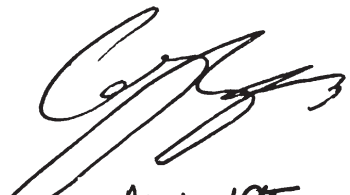

OCTOBER 1998

We declare that the machinery named below is intended to be assembled with other components to constitute a system of machinery.

The machinery shall not be put into service until the system has been declared to be in conformity with the provisions of the EC Council Machinery Directive.

| | |
|--|--|
| Designation of machinery :- | DUCTMASTER BIFURCATED FAN |
| Machinery Types :- | DCB |
| Relevant EC Council Directives :- | 98/37/EC (Machinery Directive) 93/44/EEC (Amendment to the Machinery Directive) |
| Applied Harmonised Standards :- | EN292-1, EN292-2, EN294, EN29001 |
| Applied National Standards :- | BS848 Parts One, Two and Five |

Signature of manufacture representatives :-

| | Name: | Position: | Date: |
|----|---|------------------------|--------------|
| 1) |  C. Biggs | Technical Director | 3.1.98 |
| 2) |  M. Fussell | Manufacturing Director | 3.1.98 |

INFORMATION FOR SAFE INSTALLATION, OPERATION AND MAINTENANCE OF NUAIRE VENTILATION EQUIPMENT

To comply with EC Council Directives 89/392/EEC Machinery Directive & 93/44/EEC Amendment to the Machinery Directive.

To be read in conjunction with the relevant Product Documentation (see 2.1)

1.0 GENERAL

- 1.1 The equipment referred to in this **Declaration of Incorporation** is supplied by NuAire to be assembled into a ventilation system which may or may not include additional components.
The entire system must be considered for safety purposes and it is the responsibility of the installer to ensure that all of the equipment is installed in compliance with the manufacturers recommendations and with due regard to current legislation and codes of practice.

2.0 INFORMATION SUPPLIED WITH THE EQUIPMENT

- 2.1 Each item of equipment is supplied with a set of documentation which provides the information required for the safe installation and maintenance of the equipment. This may be in the form of a Data sheet and/or Installation and Maintenance instruction.
2.2 Each unit has a rating plate attached to its outer casing. The rating plate provides essential data relating to the equipment such as serial number, unit code and electrical data. Any further data that may be required will be found in the documentation. If any item is unclear or more information is required, please contact NuAire.
2.3 Where warning labels or notices are attached to the unit the instructions given must be adhered to.

3.0 TRANSPORTATION, HANDLING AND STORAGE

- 3.1 Care must be taken at all times to prevent damage to the equipment. Note in particular that shock to the unit may result in the balance of the impeller being affected.
3.2 When handling the equipment, care should be taken with corners and edges and that the weight distribution within the unit is considered. Lifting gear such as slings or ropes must be arranged so as not to bear on the casing.
3.3 Equipment stored on site prior to installation should be protected from the weather and steps taken to prevent ingress of contaminants.

4.0 OPERATIONAL LIMITS

- 4.1 It is important that the specified operational limits for the equipment are adhered to *e.g. operational air temperature, air borne contaminants and unit orientation.*
4.2 Where installation accessories are supplied with the specified equipment eg. wall mounting brackets. They are to be used to support the equipment only. Other system components must have separate provision for support.
4.3 Flanges and connection spigots are provided for the purpose of joining to ductwork systems. They must not be used to support the ductwork.

5.0 INSTALLATION REQUIREMENTS

- In addition to the particular requirements given for the individual product, the following general requirements should be noted.*
5.1 Where access to any part of equipment which **moves**, or can become **electrically live** are not prevented by the equipment panels or by fixed installation detail (eg ducting), then guarding to the appropriate standard must be fitted.
5.2 The electrical installation of the equipment must comply with the requirements of the relevant local electrical safety regulations.

6.0 COMMISSIONING REQUIREMENTS

- 6.1 General pre-commissioning checks relevant to safe operation consist of the following -
Ensure that no foreign bodies are present within the fan or casing
Check electrical safety. *e.g. Insulation and earthing.*
Check guarding of system.
Check operation of Isolators/Controls.
Check fastenings for security.
6.2 Other commissioning requirements are given in the relevant product documentation.

7.0 OPERATIONAL REQUIREMENTS

- 7.1 Equipment access panels must be in place at all times during operation of the unit, and must be secured with the original fastenings.
7.2 If failure of the equipment occurs or is suspected then it should be taken out of service until a competent person can effect repair or examination. (Note that certain ranges of equipment are designed to detect and compensate for fan failure).

8.0 MAINTENANCE REQUIREMENTS

- 8.1 Specific maintenance requirements are given in the relevant product documentation.
8.2 It is important that the correct tools are used for the various tasks required.
8.3 If the access panels are to be removed for any reason the electrical supply to the unit must be isolated.
8.4 A minimum period of two minutes should be allowed after electrical disconnection before access panels are removed. This will allow the impeller to come to rest.
NB: Care should still be taken however since airflow generated at some other point in the system can cause the impeller to "windmill" even when power is not present.
8.5 Care should be taken when removing and storing access panels in windy conditions.

3 YEAR WARRANTY

The three year warranty starts from the date of delivery and includes parts and labour for the first year.

The labour element is subject to full, free and safe access to the equipment as recommended by the CDM regulations.

The remaining two years covers replacement parts only.

NOTE:

Installation & Maintenance of the equipment must be as directed in the instructions provided with the unit.

Controls Application Service (CAS)

A team of Engineers and technicians is available to provide pre and post order support.

We are on hand to provide help and advice from the most basic use of any NuAire equipment to the more complex applications, maximising on the versatility of our SMART and NetLink control products.

Telephone: 01222 858585

Facsimile: 01222 858586

Spares

In view of the fact that the product incorporates sealed for life bearings and utilises no consumables we would not recommend a stock holding of spares.

In the unlikely event that a failure should occur contact our service department and quote the fan rating label details.

Service

As a manufacturer NuAire provides you with factory trained Service Engineers.

Our Engineers are supported by a comprehensive range of spare parts 'off the shelf'.

If you are an industrial or commercial user, you may be interested in details of NuAire's regular maintenance Service Contracts. This is a worthwhile service that helps you get the most from our products.

Our Service Department will be happy to give you more information.

Please Telephone: **01222 858271**

WARNING!

1. DO NOT REVERSE IMPELLER DIRECTION FOR OPERATION AS THE PERFORMANCE OF THE UNIT IS DRASTICALLY REDUCED.
2. DO NOT ALTER THE BLADE ANGLE OF THE IMPELLER WITHOUT THE PERMISSION OF NUAIRE.

THE ABOVE MAY INVALIDATE YOUR WARRANTY

Technical or commercial considerations may, from time to time, make it necessary to alter the design, performance and dimensions of equipment and the right is reserved to make such changes without prior notice.

NB
If you have any comments or queries on any of our products or services please write to the Marketing Services Manager at the main address above.

NUAIRE

**Western Industrial Estate, Caerphilly,
Mid Glam CF8 1XH United Kingdom.
Telephone: 02920 885911
Facsimile: 02920 887033**

Leaflet No. 670679

