AIRTECHNIC
www.airtechnic.gr
Air-Conditioning & Ventilation Components & Systems

Circular Volume Damper

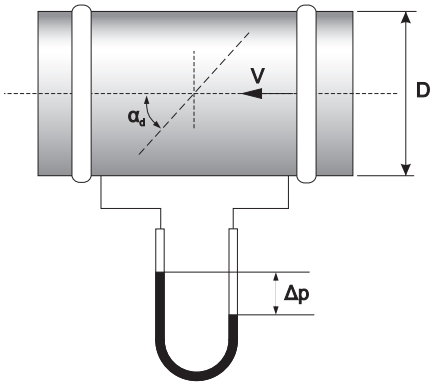
CDA

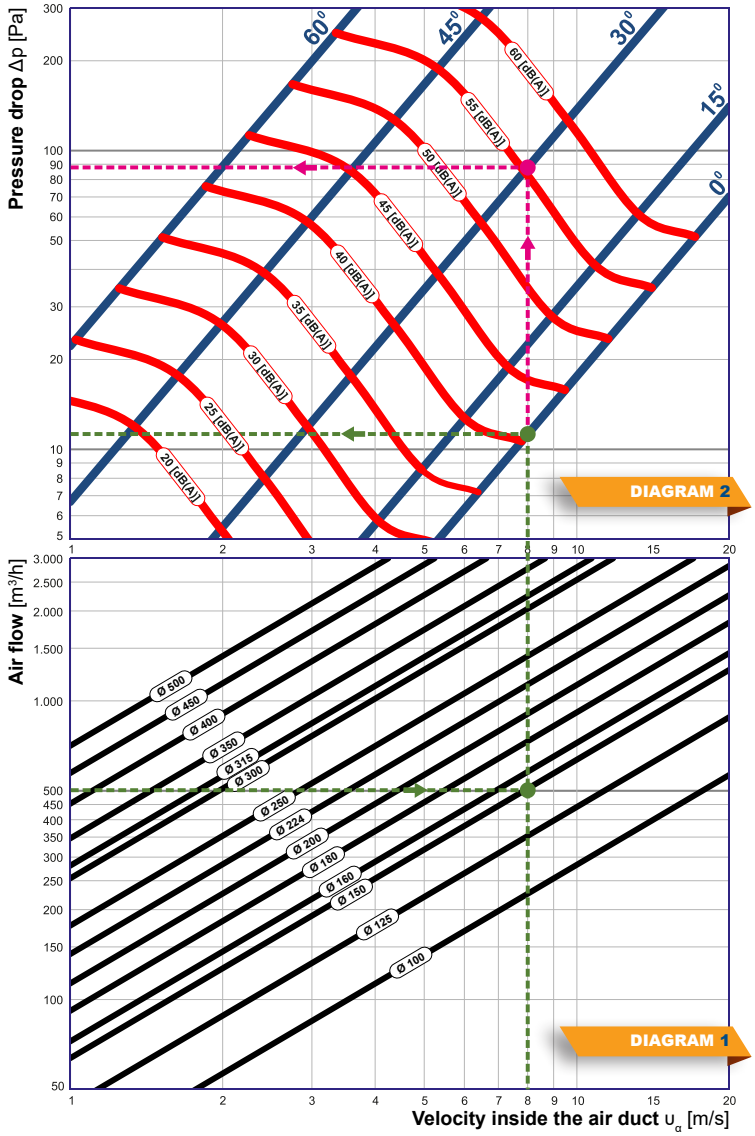
FOR AIR-DUCT INSTALLATION

Circular damper CDA

Circular dampers are manufactured according to the standard dimensions of the air duct in which they will be placed. They are comprised from a circular casing and a circular blade which can rotate from 90º (blade vertical at the volume flow / closed damper) up to 0º (blade parallel at the volume flow / open damper). The case and blade are manufactured from galvanised steel sheet (or from aluminium, copper and stainless steel sheet). They have a metallic regulator (or plastic upon request).

Circular dampers are used in air-conditioning and ventilation systems when it is required to regulate the volume flow or for pressure control. The air volume and the blade angle can be adjusted either manually or automatically using ON - OFF actuators 230V (or 24V) or analog 24V actuators and it can be combined with suitable thermostats and automation systems.
A characteristic application example is the installation of dampers in supply or return air ducts in order to counterbalance and regulate the air supply in each branch of the duct system and in each area of the installation as well.





Selection example 1 :

Which is the diameter of a circular volume damper when the air flow is 500 m³/h?

Inside a circular air duct the nominal velocity range is from 7 to 9 m/s. Assuming that, for fully open damper (0º), a velocity of 8 m/s in the air duct system is satisfying, we establish from diagram 1 that, for air flow of 500 m³/h, the damper must have a diameter (*) equal to 150 mm. Therefore from diagram 2, for damper 150 mm in diameter and air flow of 500 m³/h, we calculate that the pressure drop is equal to 11,2 Pa and taking into account the noise correction factor for diameter 150 mm, we calculate that the produced noise is equal to 40,7 dB(A).
(*) The selected diameter will be in accordance with any construction limitations that may exist in the area of installation.

Selection example 2 :

How much will the pressure drop increase if the blades of the volume damper, of example 1, change from fully open position to angle 30º?

In example 1, we calculated that damper with 150 mm in diameter, has a pressure drop of 11,2 Pa when its blades are in fully open position (0º), and the air flow is 500 m³/h. If the blade angle changes to 30º then, according to diagram 2, the new pressure drop will be 88 Pa.

Selection example 3 :

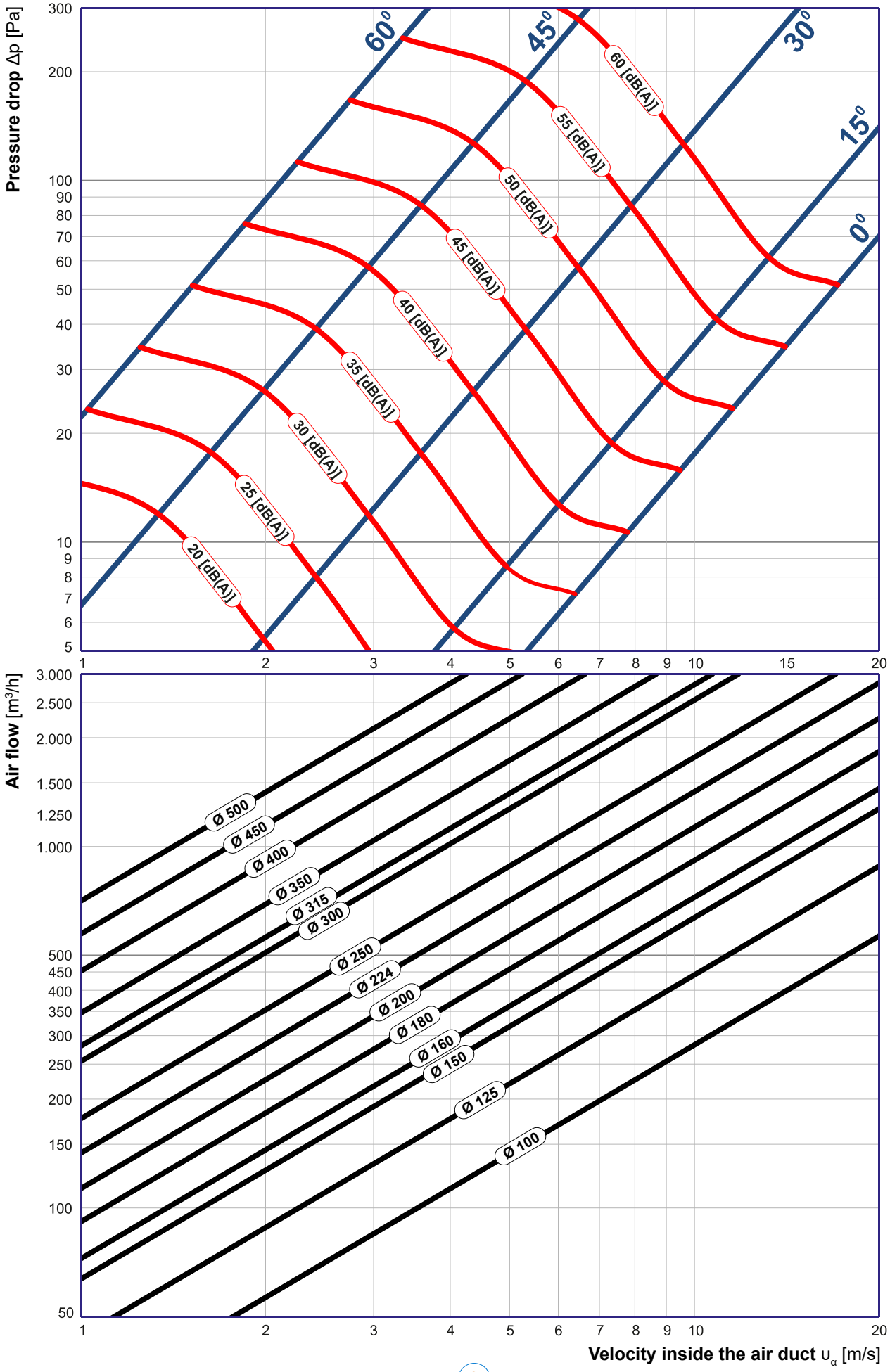
How much is the pressure drop and noise level, in a fully open circular volume damper 224 mm in diameter, if the air flow is 1.000 m³/h?

From diagram 1 & 2, for air flow of 1.000 m³/h and damper diameter 224 mm, we calculate that the pressure drop is equal to 8,9 Pa. The produced noise is calculated from diagram 2, taking into account the noise correction factor for diameter of 224 mm and it is equal to 37,7 + 4 = 41,7 dB(A).

The diagrams above, are an approximate selection method for volume dampers. For more precise calculation, please use the volume damper calculation software KlimaCalc from AIRTECHNIC or contact us.

NOISE CORRECTION FACTORS

Damper Diameter Ø...	100	125	150	160	180	200	224	250	300	315	350	400	450	500
Correction Factor	-2	-1	0	+1	+2	+3	+4	+5	+6	+6	+7	+8	+9	+10



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All dampers can be **powder painted** in **any RAL color**, upon request. For the full range of RAL colors please contact us.

RAL 1007 Daffodil yellow	RAL 2002 Vermillion	RAL 3017 Rose	RAL 5007 Brillant blue	RAL 6003 Olive green	RAL 6024 Traffic green	RAL 8028 …erra brown
RAL 1011 Brown beige	RAL 2003 Pastel orange	RAL 3018 Strawberry red	RAL 5008 Grey blue	RAL 6004 Blue green	RAL 6025 Fern green	RAL 9001 Cream
RAL 1012 Lemon yellow	RAL 2004 Pure orange	RAL 3020 Traffic red	RAL 5009 Azure blue	RAL 6005 Moss green	RAL 6026 Opal green	RAL 9002 Grey white

Color examples

CIRCULAR DAMPERS ORDER

For the proper order of a circular damper please use the following code :

CDA **400** + **G** | **FR.AL**

- **Blank** = frame from galvanized steel
- **FR.AL** = frame from aluminium
- **FR.CN** = frame from copper
- **FR.I** = frame from stainless steel
- **FR.RAL** = frame powder painted in RAL color

- **MA** = with analog actuator 24V
- **MO** = with ON / OFF actuator 230V
- **M.../3** = with 3-position actuator
- **M../A** = with actuator with auxiliary switches
- **G** = with grid
- **Blank** = without additional components

Damper **diameter** [mm]

CDA = circular damper

Examples

CDA 200 +G +MA/A =
Circular, single-leaf airduct damper, 200 mm in diameter, with protection grid, casing and blade manufactured from galvanized steel. The damper will be controlled via analog actuator 24V. The actuator will have auxiliary switches.

CDA 250 | FR.I =
Circular, single-leaf airduct damper, 250 mm in diameter, frame and blade manufactured from stainless steel. The damper will be controlled manually.

CDA 315 +MO | FR.7015 =
Circular, single-leaf airduct damper, 315 mm in diameter, frame powder painted in RAL 7015 and blade manufactured from galvanized steel. The damper will be controlled via ON / OFF actuator 230V.

SPECIFICATION

Circular, single-leaf airduct damper, CDA
Circular, single-leaf airduct damper, ενδεικτικού τύπου **CDA** της **AIRTECHNIC**, manufactured of galvanized steel / painted in RAL… color / aluminium / copper / stainless steel, with circular blade manufactured of galvanized steel. The blade will be able to rotate from 90º (blade vertical at the volume flow / closed damper) up to 0º (blade parallel at the volume flow / open damper). The blade angle adjustment will be achieved manually (**CDA**) with metallic or under request plastic regulator / automatically via actuator On / Off 230V (**CDA+MO**) / automatically via analog actuator 24V (**CDA+MA**). It will be possible to install 3-position actuator [M…/3] / actuator with auxiliary switches [M.../A]. The manufacturer will have performed measurements of the technical characteristics of the grille, in an independent laboratory according to the standard ELOT EN 1751:1998. It will have grid [G]. It will be suitable for placement within an air duct system, for indoor air exhaust or fresh air intake. The factory will be certified according to **ISO 9001:2015** (Quality Management Systems) and according to **ISO 14001:2015** (Environmental Management Systems).
It will be manufactured by **AIRTECHNIC** type **CDA / CDA +G**
It will be manufactured by **AIRTECHNIC** type **CDA +MO**
It will be manufactured by **AIRTECHNIC** type **CDA +MA**

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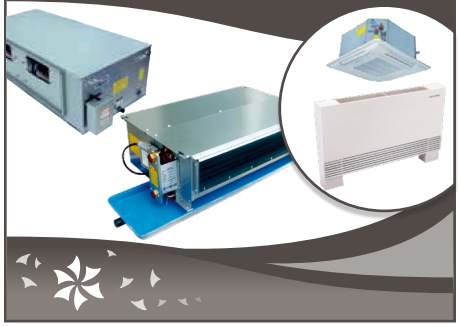
ISO 9001:2015 ISO 14001:2015

AIR HANDLING UNITS

HEAT EXCHANGERS

FAN COIL UNITS



FANS & FAN SECTIONS

FIRE DAMPERS

AIR OUTLETS

STEAM HUMIDIFIERS - DEHUMIDIFIERS

CENTRAL VACUUM SYSTEMS

STAINLESS STEEL CHIMNEYS

AIR FILTERS

AIR CURTAINS

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