



شركة مصنع عالم الناصريه المحدودة

AL NASSERIAH WORLD FACTORY COMPANY LTD

NON RETURN DAMPERS



NON RETURN DAMPERS

ANA Non Return Dampers :

One way discharge unit designed for pressurized rooms and ducts to reduce the load on Internal HVAC units and to keep the pressure levels maintained at it's maximum.



ANA NRD Construction

Body :

Constructed from Extruded Aluminum alloy Profile **6063** or Galvanized Steel Grade **90** upon customer's request.

Blades :

Constructed from Extruded Aluminum, Aluminum alloy sheet **6063 and** Galvanized Steel Grade **90** upon customer's request. fixed horizontally to the body.

Performance :

The Non Return Dampers are rated as Gravity Relief Damper (max 2000 fpm), Back Draft Damper (max 2500 fpm) and Pressure Relief Damper (max 3000 fpm)

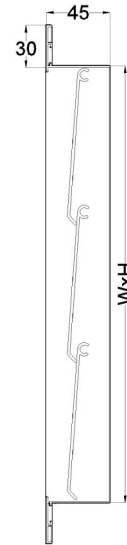
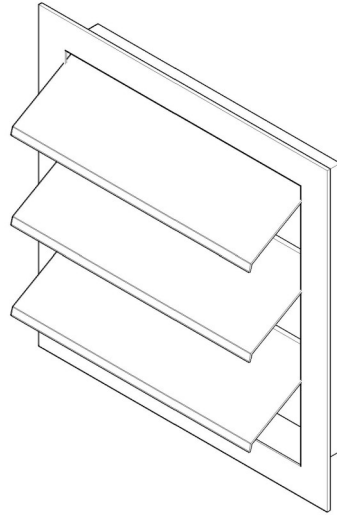
Finish :

Electrostatic powder coating is used for gravity relief damper (wall mounted) with standard white color for the body and the blades (**RAL 9016**), Other types are mill finish.

NON RETURN DAMPERS

ANA Gravity Relief Damper

Model : NGRD - X

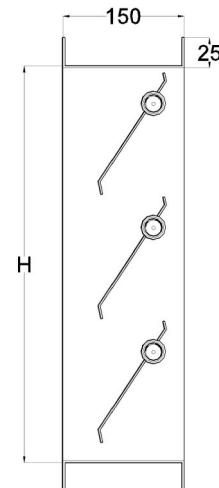
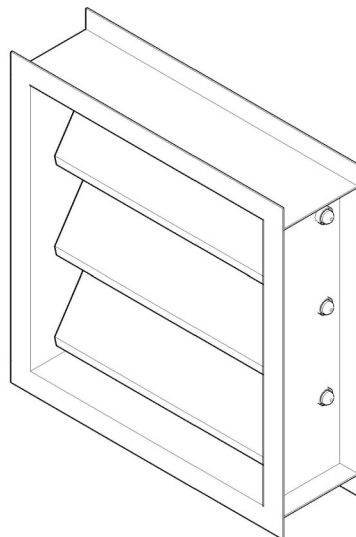


- Frame and Blades are made of extruded aluminum alloy **6063**. (For Duct mounted gravity relief damper, the Body can be changed to galvanized steel grade **90** with a thickness of **(1mm-gauge 20)**).
- Light back draft damper, with air operated blades.
- Opening of the blades is controlled by the air velocity (**max 2000 fpm**), and fully closed by a stopper.

* X - Wall Mounted (W) and Duct Mounted (D)

ANA Back Draft Damper

Model : NBDD

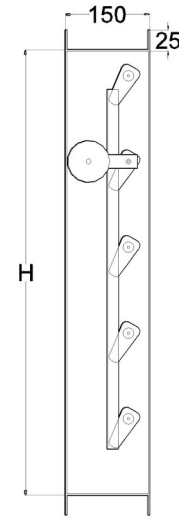
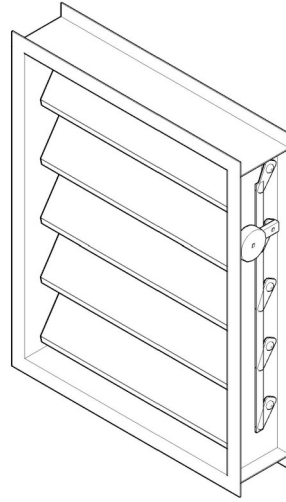


- Body and Blades is made of galvanized steel grade **90** with a **(1.5mm- 16 gauge)** thickness. (Body and blades can be changed to aluminum upon request with a thickness of **1.2 mm**).
- Air operated blades fixed in the body with **(13 mm)** diameter plastic bushings.
- Opening of the blades is controlled by the air velocity (**max 2500 fpm**), and fully closed by a stopper.

NON RETURN DAMPERS

ANA Pressure Relief Damper

Model : NPRD



- Body and Blades is made of galvanized steel grade **90** with a **(1.5mm- 16 gauge)** thickness .
- Air operated blades fixed in the body with **(13 mm)** diameter plastic bushings and a special linkage to hold the counter weight.
- Opening of the blades is controlled with adjustable air velocity **(max 3000 fpm)** by the counter weight which is selected upon the needed opening pressure , and fully closed by a stopper.

ANA NRD Selection

- Back draft dampers and gravity shutters sizes can be selected by the air flow and the desired velocity using air flow equation :

$$A = \frac{Q}{V}$$

- A : is the area of the back draft damper or the gravity shutter.
- Q : is the air stream flow where the damper starts to open.
- V : is the air stream velocity at the opening flow.

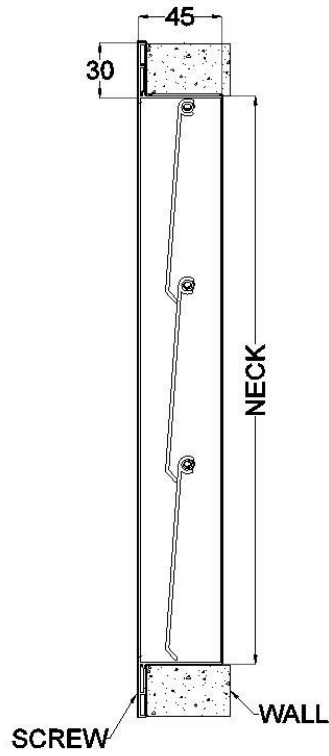
- For pressure relief damper selection, two data is required to chose the counter weight (size and pressure of the opening point or the airflow).

$$M_C = M_t - M_b = \frac{PA}{g}$$

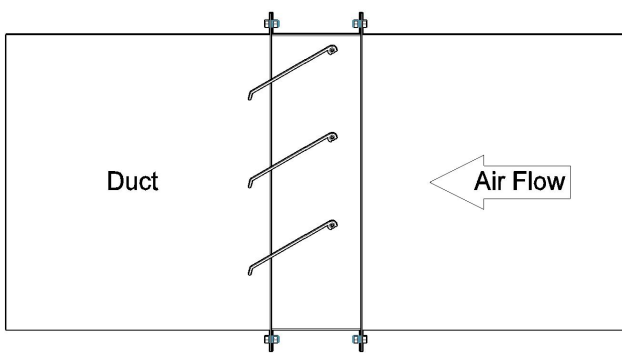
- M_c : Counter weight mass.
- M_t : The total mass of counter weight and blades.
- M_b : Mass of the blades.
- P : Opening point pressure.
- A : Area of the pressure relief damper.
- g : gravitational acceleration.

NON RETURN DAMPERS

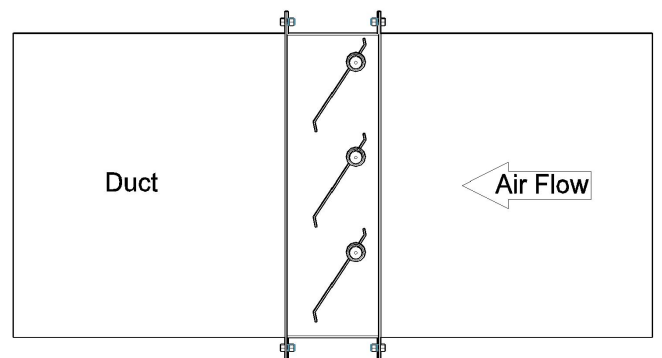
ANA NRD Installation :



NGRD-W



NGRD-D



NBDD