

Heavy Duty Pressure Relief Damper – PRD-150

Model: PRD-150

The Holyoake PRD -150 is a **Heavy Duty** pressure relief, back draft, or non return damper. Constructed from extruded aluminium, with twin blade seals and side gaskets; it is capable of handling high turbulent air velocities and provides minimal leakage when closed against reverse flow.

Standard Construction

- Frame Options:** (1) **Duct Flange** - Square cut ends.
(2) **Channel Frame** - Mitred corners.
Both from 6063 T5 extruded aluminium, mechanically locked with heavy duty fixings.
- Blades:** 6063 T5 cavity extrusion providing partial airfoil section.
- Linkage:** Concealed in frame, with stainless steel link pins and aluminium control bars.
- Axles & Cranks:** Hexagonal.
- Bearings:** Two piece moulded glass reinforced nylon, pressed into frame, with the outer sleeve locked with locating ribs (-8 - 220°C).
- Blade Seal:** Extruded EPDM (0-80°C).
- Side Seal:** Flexible (convex) aluminium.
- Control Shaft:** Hexagonal shaft complete with control plate.
- Blade Rotation:** Parallel only
- Finish:** Mill standard, anodized and powercoat options available.
- Minimum Size:** Duct Flange 150 mm Wide x 176 mm High (Airstream size)*.
Channel Frame 200 mm Wide x 232 mm High (Nominal, overall case size)*.
- Maximum Size:** Duct Flange 750 mm Wide x 1490 mm High (Airstream size)*.
Channel Frame 800 mm Wide x 1546 mm High (Nominal, overall case size)*.

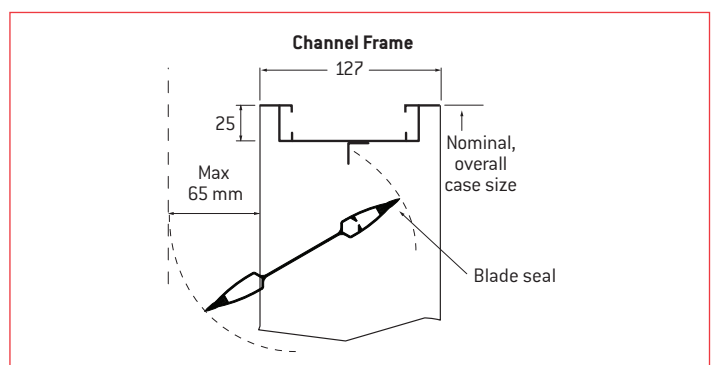
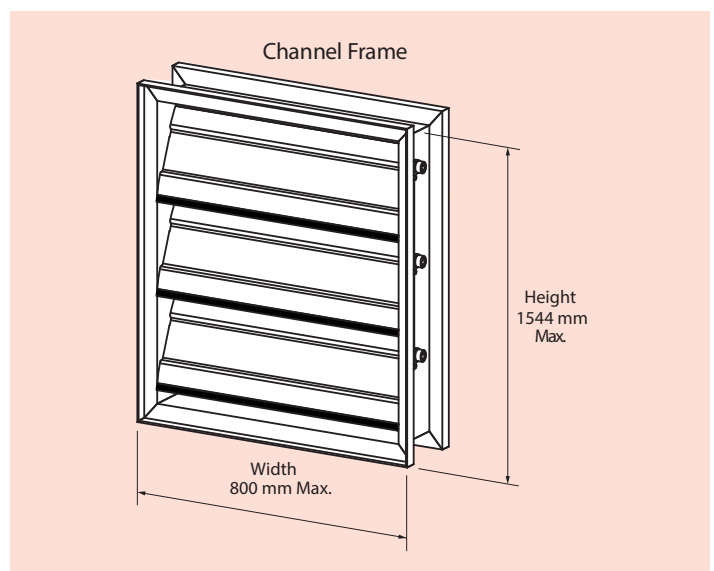
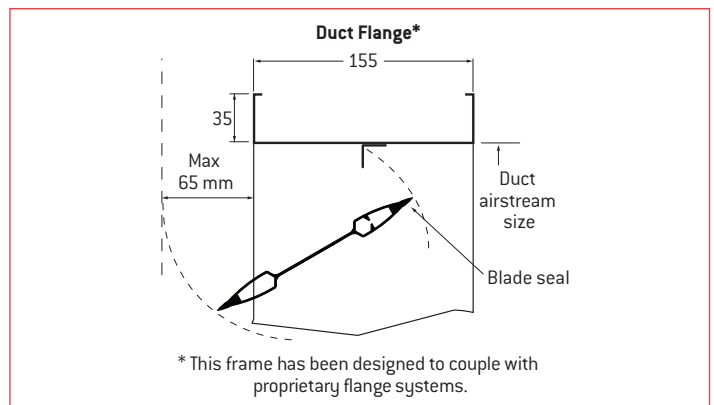
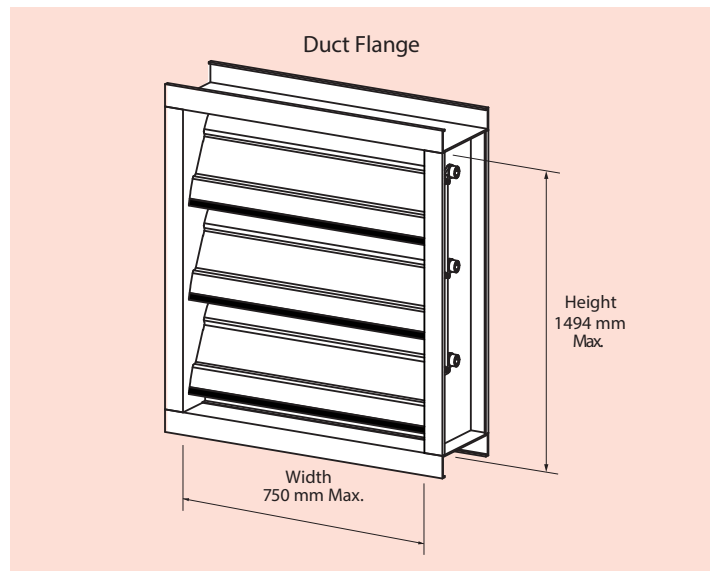
*** Important: Only complete blade module heights can be ordered, see table overleaf.**

Features

- Heavy Duty Robust blades.
- Aluminium Construction.
- Vertical, or Horizontal mounting (Blades must always be horizontal).
- Twin blade edge seals.
- Aluminium blade side seal gaskets.
- Linked blades, to avoid flutter.
- Gravity operation.

Options

- Duct flange, or channel frame.
- Blade adjustment weights.
- High temperature blade seals (Max 225°C).



PRD-150 – Performance Data

Model: **PRD-150**

Pressure Control

To maintain pressure control the blades remain closed under gravity. To increase the opening pressure, weights can be added to the control shaft, via a lever arm. (Weights are not certified). Factory calibration is not available; therefore, the correct amount of weight and adjustment is determined by on site commissioning, by others.

Although not a precise device this can provide a simple solution to pressure control problems within the parameters indicated above, or the product can be purely utilised as a back draft, or non return valve.

Before ordering a PRD 150 please consult your local Holyoake branch to discuss selection criteria.

Installation

PRD 150 dampers must not be installed with the axes vertical.
PRD 150 dampers must not be mounted in the 'Inverted' position.

Install square and free from racking.

Flanged versions are installed between ducts, so airstream sizes apply.*

Channel versions are installed inside ducts, so nominal sizes apply.*

When used in close proximity to fans, ensure that turbulence does not cause the damper to exceed the maximum velocities (AVERAGE or SPOT).

Maximum Velocity: 15 m/s AVERAGE, 20 m/s SPOT.

Maximum Pressure: 1100 Pa.

Minimum Opening Static Pressure: 30 Pa (Blade Weight Only).

Do not use the PRD 150 as a weather proof louver. When mounted in external walls they should be installed in conjunction with Holyoake OHL series outside louvers, detailed in section F.

*** Important: Only complete blade module heights can be ordered, see table below:**

| *Full Blade Height Dimensions | | |
|-------------------------------|-------------------------------------|----------------------------------|
| Number of Blades | Air Stream Height, Flanged versions | Nominal Height, Channel versions |
| 1 | 176 | 232 |
| 2 | 322 | 378 |
| 3 | 468 | 524 |
| 4 | 614 | 670 |
| 5 | 760 | 816 |
| 6 | 906 | 962 |
| 7 | 1052 | 1108 |
| 8 | 1198 | 1254 |
| 9 | 1344 | 1400 |
| 10 | 1490 | 1546 |

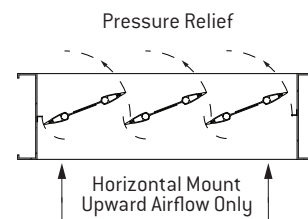
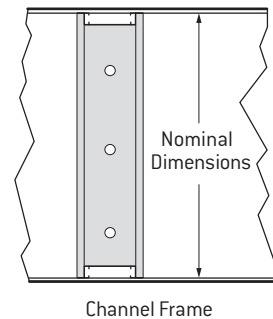
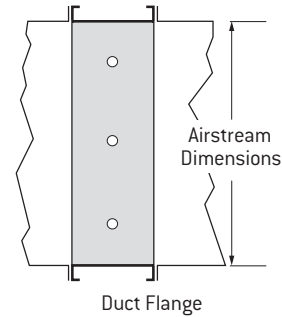
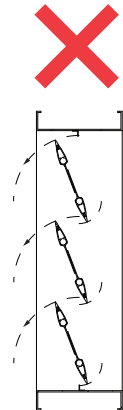
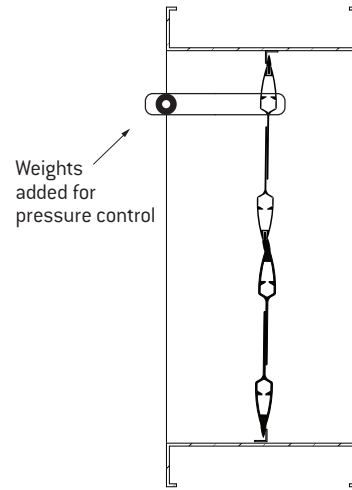
For Airflow Performance and to check suitable sizing, please refer to the HCD 150 performance data on page 304H and 305H. Performance of a given sized PRD 150 is directly proportional to 90 % of the same sized HCD 150. To check PRD 150 size, take the given air flow, add 10% (x1.1) and select size from the relevant HCD 150 section. Ensure the height matches a complete module height, refer to the table above.

Increased opening static pressures can be achieved by adding weight to one of the blades, (lever arm and weights are optional extras, weights are not certified).

The correct amount of weight is determined by on site commissioning (carried out by others).

When PRD 150 dampers are mounted horizontally (floor mounted); upwards airflow only can be accommodated.

| Guide Product Weights | |
|--------------------------------|--------------------------|
| PRD 150 Pressure Relief Damper | Approximate Weight in Kg |
| 500 x 325 Airstream Size | 4.4 |



Product Ordering Key and Suggested Specifications

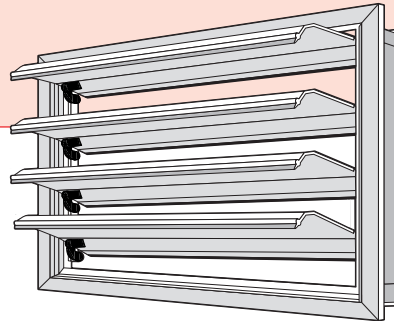
| BDE | FRAME STYLE | W x H | OPTIONS |
|---------------------------------------|---|-------------------|---|
| Back Draft Damper with Extruded Blade | C - Channel Frame DF - Duct Flange FFL - Front Flange - Large FFS - Front Flange - Small RFL - Rear Flange - Large RFS - Rear Flange - Small | Nominal Duct Size | Tension Springs [Normal, Inverted, or Horizontal] |

Back Draft Dampers shall be constructed from extruded aluminium.

Frames shall have mitred corners, be mechanically locked with aluminium gussets and be suitable for internal fixing within ductwork, or have square cut ends and be mechanically joined with screws tapped into screw pipes, for external duct flange mounting.

Blades shall be extruded aluminium with vinyl edge seal and shall be freely pivoted in the frame on moulded acetal cranks and bearing pins, linked by a gang bar, to operate in unison.

All shall be type BDE as manufactured by Holyoake.



| PRD -150 | FRAME STYLE | W x H | Pa | OPTIONS |
|-----------------------------------|---|--|---------------------------|--|
| Heavy Duty Pressure Relief Damper | C - Channel Frame * DF - Duct Flange + | Nominal Overall Case Size* Nominal Duct Size (Airstream)+ | Opening Pressure Required | Lever Arm and Blade Weights. High Temperature Version (Max 210C). |

Heavy Duty Pressure Relief Dampers shall be constructed from extruded aluminium.

Frames shall have mitred corners, be mechanically locked with aluminium gussets and be suitable for internal fixing within ductwork, or have square cut ends and be mechanically joined with screws tapped into screw pipes, for external duct flange mounting.

Blades shall be extruded aluminium with acetal edge seals both sides and be complete with aluminium side seal gaskets. They shall be linked by an aluminium gang bar, to operate together in unison. They shall freely pivot in the frame, on aluminium cranks and axles, within moulded acetal bearings. (Blade adjustment weights may be added if required, via a spindle control bar).

All shall be type PRD -150 as manufactured by Holyoake.

