

Iris Control Damper (ICD)

For adjustment and measuring of airflow

Features

- Quick and simple installation and maintenance
- Extended spigot connections
- 100% opening capacity
- Low noise generation
- Air tightness to DW144 Class C
- Linear choking for simple operation
- High accuracy and excellent adjustment properties



*action*air

Dampers Controls Fancoils

Ruskin Air Management Limited

www.ruskinuk.co.uk

Iris Control Damper (ICD)



Quick, silent and efficient is the simple summary of the features of the Actionair Iris Control Damper (ICD) for the adjustment and measuring of airflow.

Introduction

Quick and simple installation and maintenance.

Balancing the airflow is normally a time consuming operation when commissioning a ventilation system.

The linear choking characteristics of the Actionair Iris Control Damper (ICD), simplifies this operation. Adjustment and measuring is carried out in the same operation, reducing the on site time to achieve correct airflow. The result is a permanent comfortable indoor climate.

The Actionair ICD is delivered locked in the fully open position, facilitating pressure testing of the system. A graduated scale of 'K' factors is located on the outer edge of the damper so as not to be obscured by insulation and each damper is supplied with full mounting and adjustment instructions to make the installation quick and simple. Every Actionair ICD is factory calibrated. Extended spigot connections are a standard feature to avoid damage to the seal when riveting to ducting.

100% Opening capacity

The ICD can be fully opened.

Low Noise Generation

The design of the adjustment function together with the geometry of the ICD, results in low noise generation under volume control.

A conventional damper will increase the air velocity along the duct walls resulting in high generated noise under volume control. The 'Iris' aperture is close to ideal from a flow technology aspect. The Iris Control Damper (ICD) increases the air velocity with low levels of noise generation provided the instructions are followed in relation to the location of bends and junctions.

The correct properties

The construction is simple, but gives excellent adjustment properties.

The ICD is manufactured to air tightness class C and can work equally well with the airflow in either direction, eliminating the risk of incorrect installation.

Function

The Actionair ICD is an iris damper for measuring and adjusting the air flow. The ICD has the following specifications: low noise level, centrally-formed air flow and fixed test points for precise measurements. The damper also has an adjustment aperture which can be opened completely. Available in sizes 100 to 630mm diameters. Maximum temperature for ICD is 70°C.

Design

The damper is manufactured from galvanised sheet steel and is fitted with a rubber seal tested for air-tightness.

Exhaust ventilation

Using the ICD damper for exhaust Ventilation by diffusion offer many advantages over other forms

of ventilation and one of them is the simplicity in design and layout of exhaust air.

The dynamics of an extracted air flow is independent of geometry and direction at all distances greater than a couple of diameters from the opening. As long as the extracted air volume equals the supply air volume it doesn't matter where the extract opening is located nor does the number of openings applied.

When you are using dampers with good control abilities and enough pressure drop like ICD, these can be combined with a supply diffuser to form functional exhaust installations. By using the same diffuser for supply and exhaust you can achieve an aesthetic ceiling profile.

Mounting

The ICD adjustment damper must be installed in accordance with the distances required to minimise air-flow deviation. The ICD enables the taking of precise air-flow measurements at all points including points close to duct deviations such as T junctions and bends and points in front of other supply air devices.

Protective distance

before bends	1 x Diameter.
after bends	1 x Diameter.
before T-pipes	3 x Diameter.
after T-pipes	1 x Diameter.
before supply-air devices	3 x Diameter.

Specification

Actionair ICD

The Actionair ICD Iris Control damper, housed in a galvanised sheet steel casing with circular extended spigots for ease of duct connection.

The simplicity of the Actionair ICD design with linear choking, provides quick and efficient airflow adjustment and measurement with low noise generation.

Note: Maximum damper differential pressure is as indicated on Performance Data charts, pages 4, 5 and 6.

Sound Power Level

Sound power level, L_w

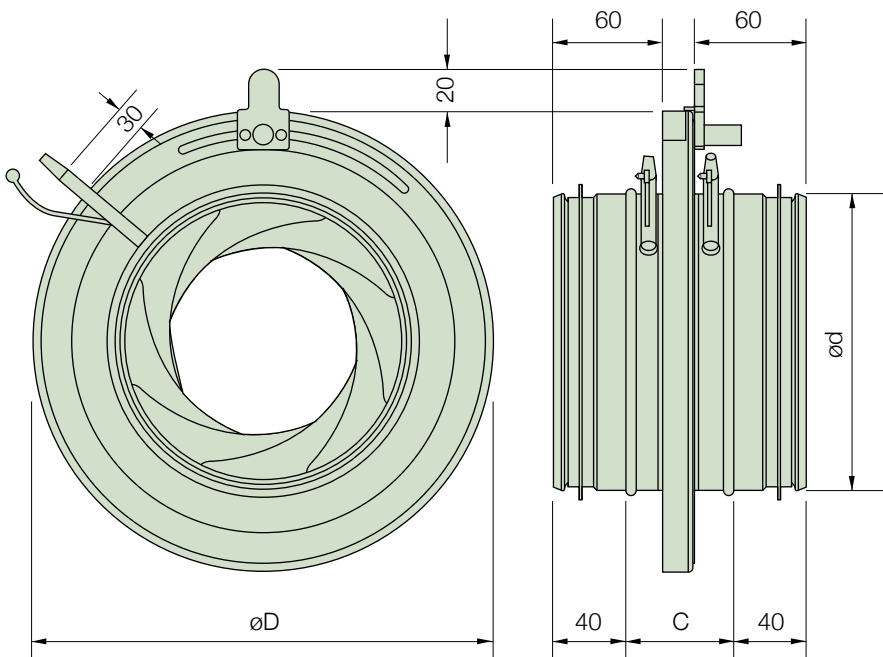
L_w (dB) = L_{wA} + K_{ok} (L_{wA} = diagram K_{ok} = table)

correction factor K_{ok}

ICD Size	Mid-frequency band, Hz						
	63	125	250	500	1K	2K	4K
100	11	10	3	-2	-8	-16	-24
125	7	8	2	-4	-11	-19	-27
150	8	7	1	-5	-11	-18	-27
160	9	6	1	-5	-11	-18	-27
200	9	5	1	-5	-12	-17	-24
250	6	1	-4	-3	-12	-17	-24
315	3	1	-4	-4	-9	-14	-23
400	3	1	-4	-4	-9	-13	-19
500	14	8	2	-3	-11	-17	-26
630	12	6	1	-3	-8	-11	-14
Tolerance	±6	±5	±2	±2	±2	±2	±3



Dimensions

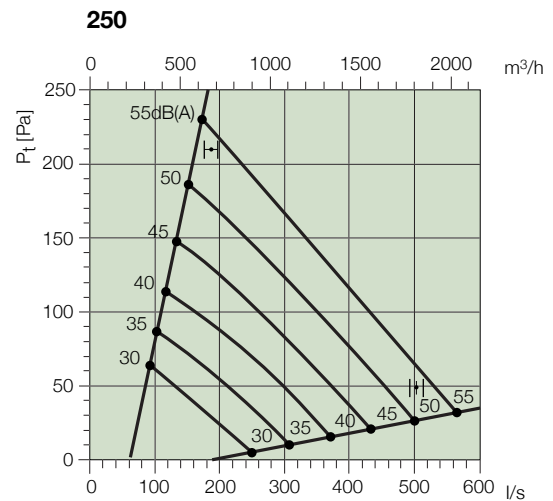
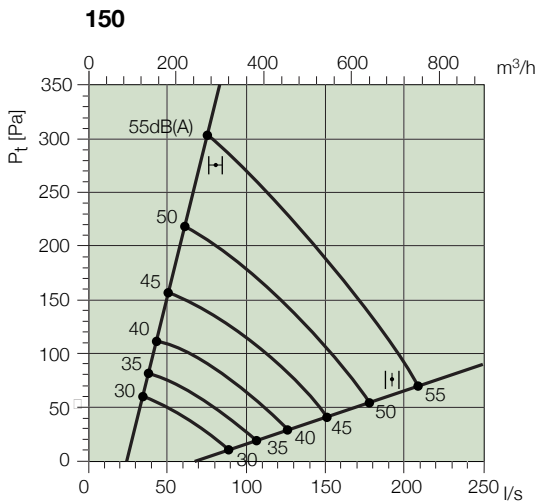
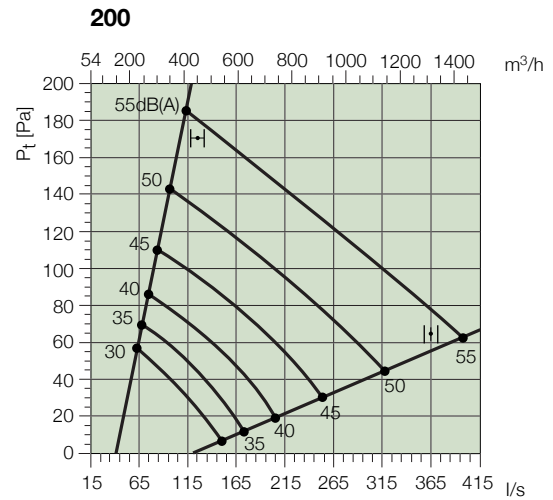
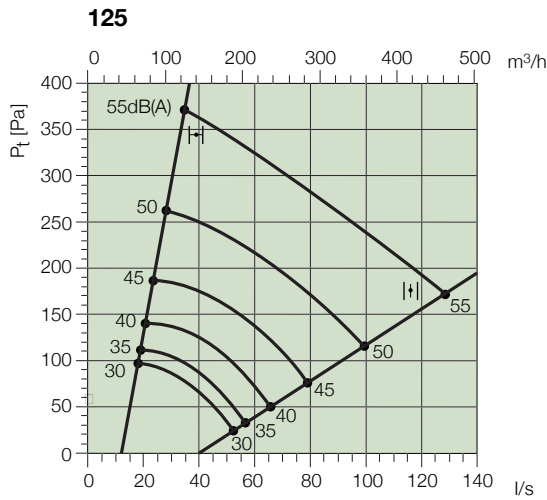
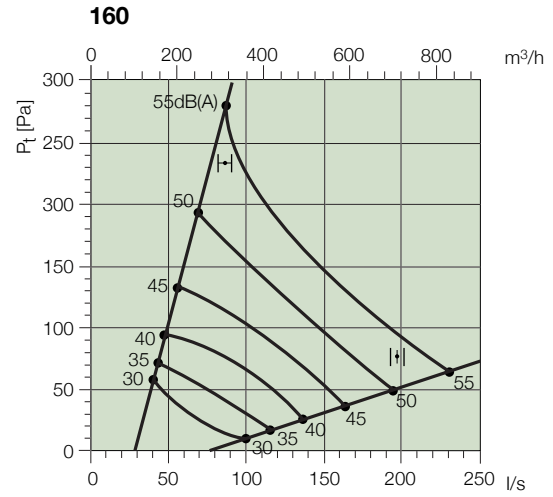
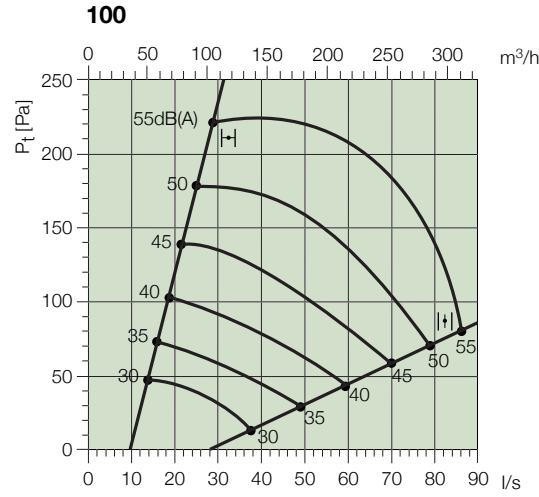


ICD Size	ød	C	øD	Part Number	Weight Kg
100	99	54	163	XSGR05101	0.80
125	124	63	210	XSGR05102	1.09
150	149	54	230	XSGR05103	1.30
160	159	60	230	XSGR05104	1.30
200	199	62	285	XSGR05105	1.81
250	249	62	333	XSGR05106	2.70
315	314	63	406	XSGR05108	3.42
400	399	70	560	XSGR05109	7.33
500	499	60	644	XSGR05110	8.33
630	629	60	811	XSGR05111	10.00

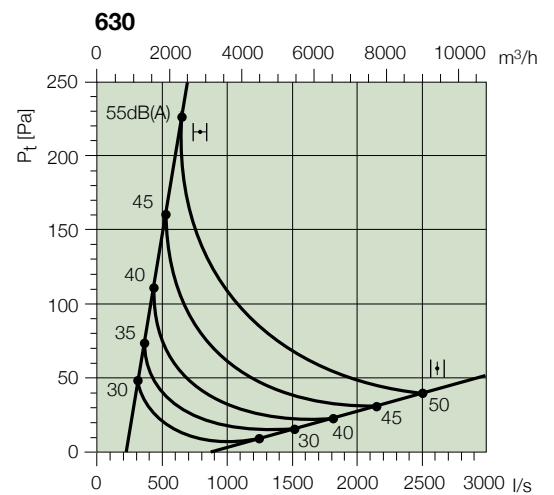
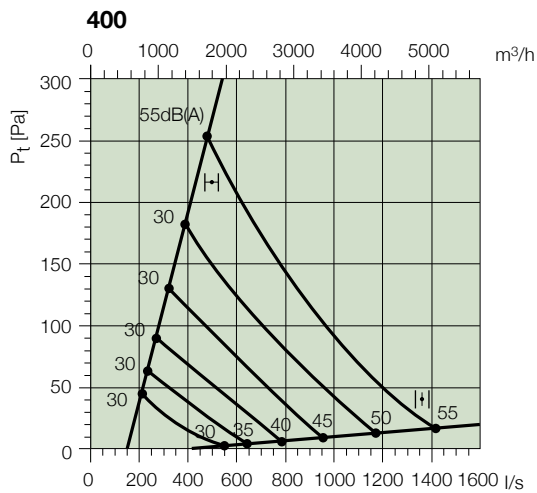
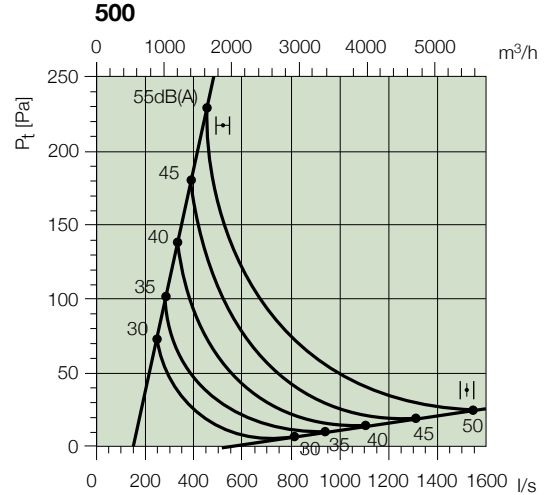
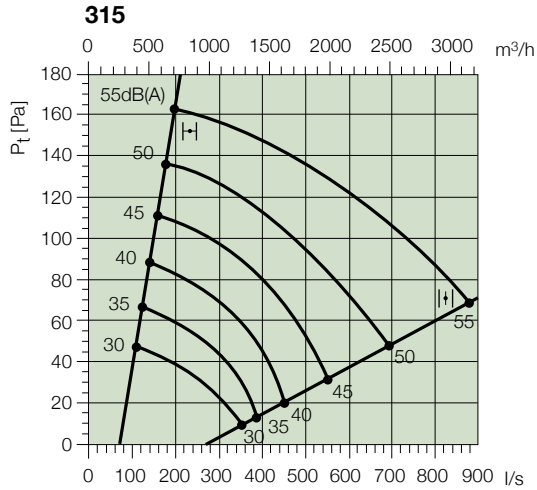
The compact measurements of the Actionair ICD, are an advantage as space is often limited.

The diagram shows Air volume (l/s and m³/h), static pressure (Pa) and sound power level [dB(A)], including aperture damping.

Performance Data



Performance Data



Ordering Information

Example

Quantity	Size	Description	PART No.
10	100	ICD	XSGR05101

Iris Shut Off Damper (ISD)



Specification

Actionair ISD

The Actionair ISD Iris Shut Off Damper, housed in a galvanised sheet steel casing with circular extended spigots for ease of duct connection.

The simplicity of the Actionair ISD design with linear choking, provides quick and

efficient airflow adjustment and measurement, low noise generation and more choking ability than Actionair ICD.

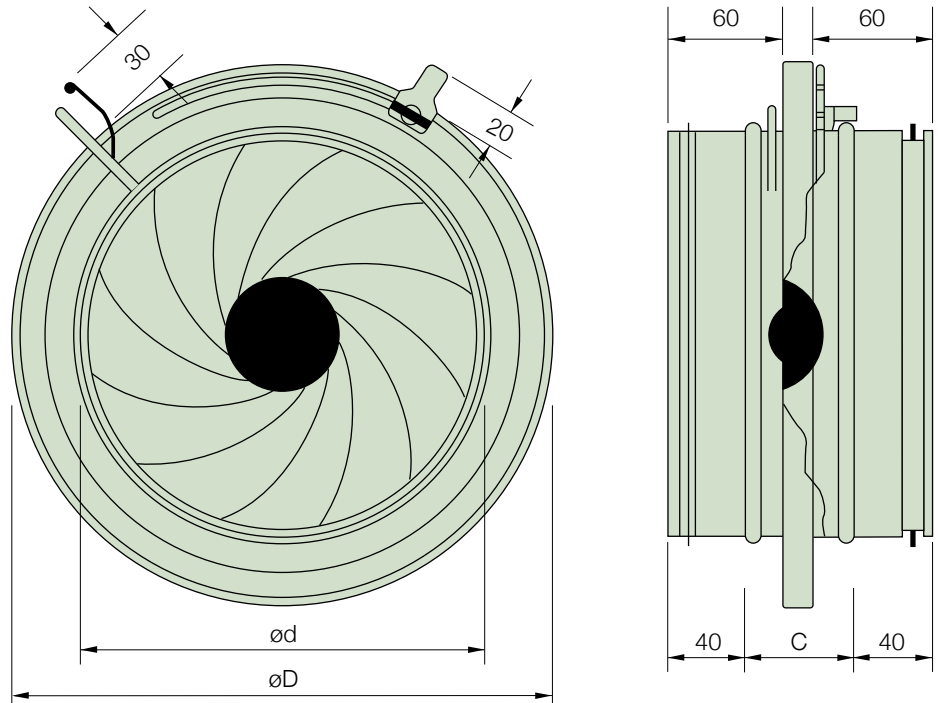
When using the Actionair ISD we recommend the installation of the Actionair Access/Shield CDS Access Door with the unit.

Sound power level, L_w

$$L_w \text{ (dB)} = L_{wA} + K_{Ok} \text{ (} L_{wA} = \text{diagram } K_{Ok} = \text{table) correction factor } K_{Ok}$$

ISD Size	Mid-frequency band, Hz						
	63	125	250	500	1K	2K	4K
160	9	6	1	-5	-11	-18	-27
200	9	5	1	-5	-12	-17	-24
250	6	1	-4	-3	-12	-17	-24
315	3	1	-4	-4	-9	-14	-23
400	3	1	-4	-4	-9	-13	-19
Tolerance	±6	±5	±2	±2	±2	±2	±3

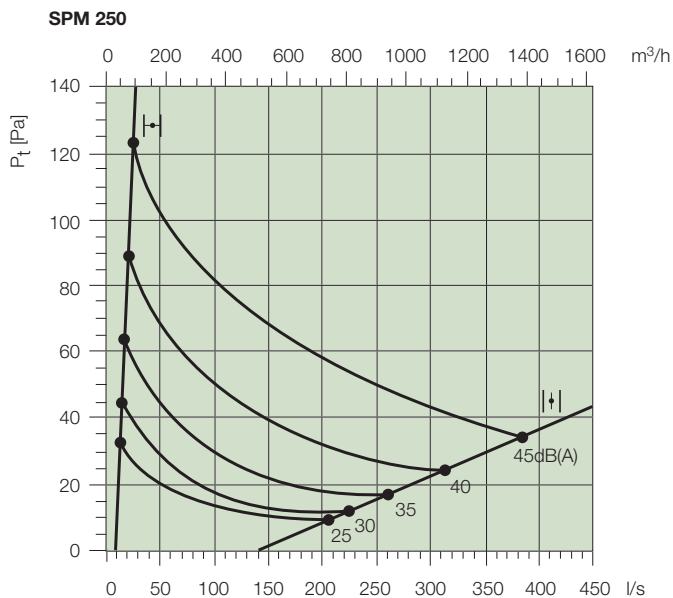
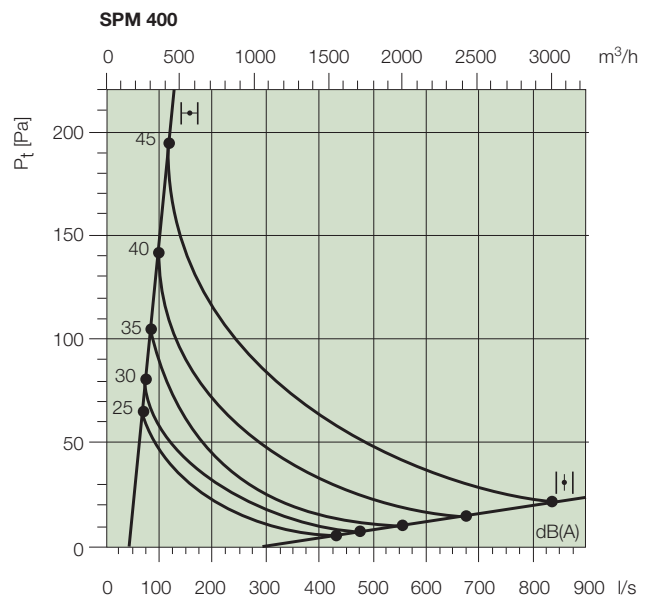
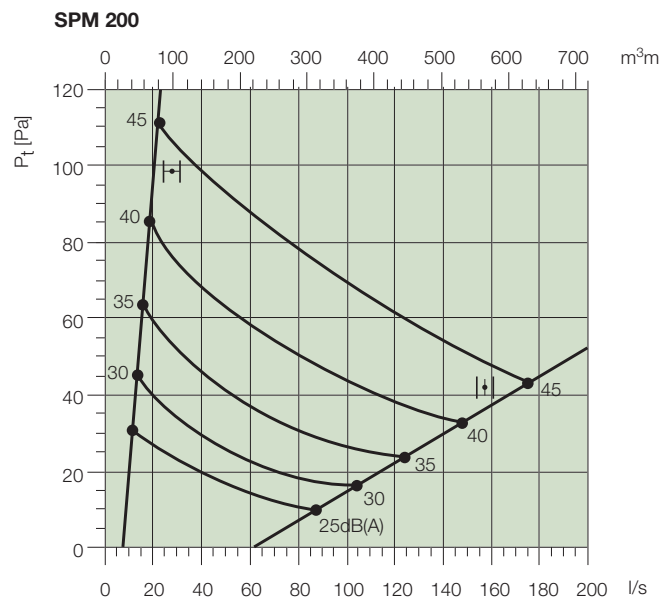
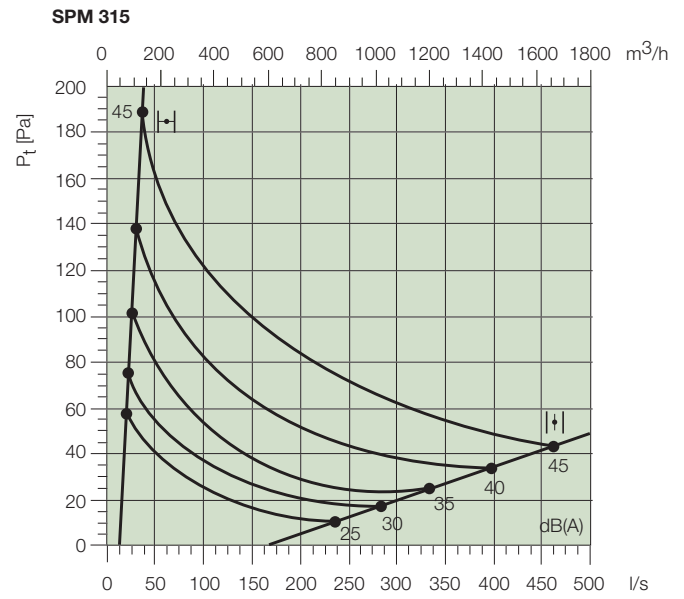
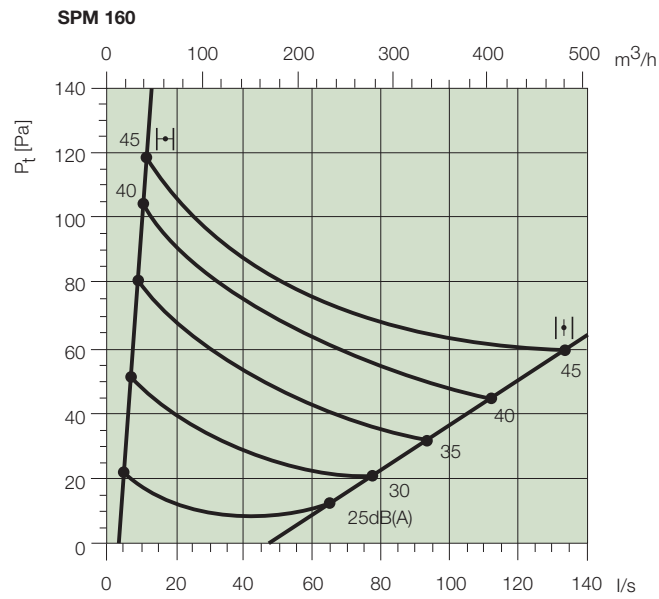
Dimensions



The compact measurements of the Actionair ISD, are an advantage as space is often limited.

ISD Size	ød	C	øD	Part Number	Weight Kg
160	159	60	230	XSGR05131	1.50
200	199	62	285	XSGR05132	1.91
250	249	62	333	XSGR05133	2.80
315	314	63	406	XSGR05135	3.63
400	399	70	560	XSGR05136	7.56

Performance Data



Ordering Information

Example

Quantity	Size	Description	Part Number
10	250	ISD	XSGR05133

Options

Actionair ICD-M (Motorised)

Where the ventilation requirements are variable, dependent on say temperature or CO², the Actionair ICD-M, motorised unit may be used. The motor will receive a signal from the installed sensor and vary the air supply accordingly.

The maximum/minimum opening position can be adjusted manually using the release button on the unit. Once set the damper will return to automatic operation.



ICD-M Size	Motor Options								
	24V On/Off	Part Number	Weight Kg	240V On/Off	Part Number	Weight Kg	24V Modulating On/Off	Part Number	Weight Kg
100	NM24A	XSGR05113	2.20	NM230A	XSGR05114	2.20	NM24A-SR	XSGR05115	2.20
125	NM24A	XSGR05116	2.50	NM230A	XSGR05117	2.50	NM24A-SR	XSGR05118	2.50
160	NM24A	XSGR05119	3.20	NM230A	XSGR05120	3.20	NM24A-SR	XSGR05121	3.00
200	NM24A	XSGR05122	4.00	NM230A	XSGR05123	4.00	NM24A-SR	XSGR05124	3.20
250	SM24A	XSGR05125	4.95	SM230A	XSGR05126	4.95	SM24A-SR	XSGR05127	3.50
315	SM24A	XSGR05128	5.20	SM230A	XSGR05129	5.20	SM24A-SR	XSGR05130	3.80

Ordering Information

Example

Quantity	Size	Description	Motor Option	PART No.
10	100	ICD-M	NM24A-SR	XSGR05115

Actionair ISD-M (Motorised)

Where the ventilation requirements are variable, dependant on say temperature or CO², and complete closing is required, the Actionair ISD-M motorised unit may be used. The motor will receive a signal from the installed sensor and vary the air supply accordingly.

The maximum/minimum opening position can be adjusted manually using the release button on the unit. Once set the damper will return to automatic operation.

When using the Actionair ISD-M we recommend the installation of the Actionair CDS Access Door with the unit.

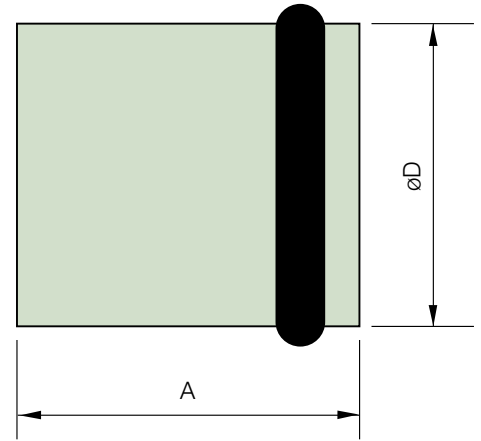
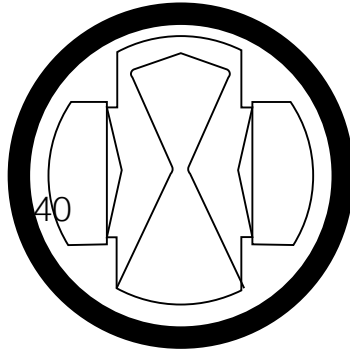
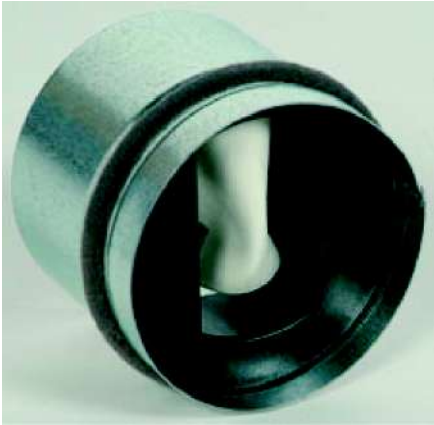


ICD-M Size	Motor Options								
	24V On/Off	Part Number	Weight Kg	240V On/Off	Part Number	Weight Kg	24V Modulating On/Off	Part Number	Weight Kg
160	NM24A	XSGR05137	2.40	NM230A	XSGR05138	2.40	NM24A-SR	XSGR05139	3.40
200	NM24A	XSGR05140	3.90	NM230A	XSGR05141	3.90	NM24A-SR	XSGR05142	4.30
250	SM24A	XSGR05143	5.80	SM230A	XSGR05144	5.80	SM24A-SR	XSGR05145	5.80
315	SM24A	XSGR05146	7.80	SM230A	XSGR05147	7.80	SM24A-SR	XSGR05148	7.80

Ordering Information**Example**

Quantity	Size	Description	Motor Option	PART No.
10	160	ISD-M	NM24A-SR	XSGR05139

Accessories



Actionair MR Constant Airflow Device

The Actionair MR Constant airflow device housed in a galvanised sheet steel casing with silicon bellows with a polycarbonate centre, dimensioned so as to maintain a constant air volume.

The Actionair MR can be vertically or horizontally mounted, either within an Actionair Access/Shield CDS access door or spiral ductwork.

For use with air volumes up to 200 l/s.
Operating temperatures -30 to $+60$ °C

Adjustment is made by setting dividers into 1 of 10 different positions.

MR Size	øD	A	Part Number	Weight Kg
100	98	80	XSGR05149	0.20
125	121	137	XSGR05150	0.45
160	156	137	XSGR05151	0.50
200	196	155	XSGR05152	0.90
250	247	172	XSGR05153	1.50

Accessories

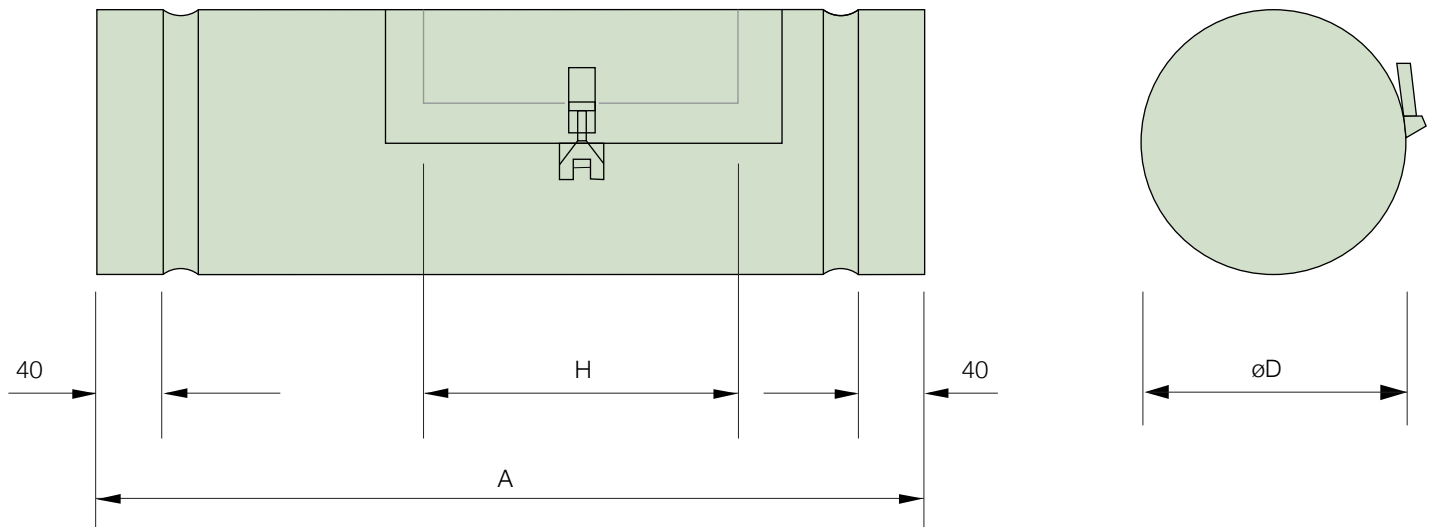


Actionair AccessShield CDS

The access door can be easily opened without tools. The door is fitted with a sealing gasket.

Manufacture is from galvanised mild steel and is available in sizes 100mm diameter to 400mm.

CDS Size	A	H (hole)	øD	Part Number	Weight.
100	290	100	100	XSGQ05155	0.60
125	395	150	125	XSGQ05156	1.10
160	405	160	160	XSGQ05157	1.40
200	445	180	200	XSGQ05158	1.85
250	480	200	250	XSGQ05159	3.20
315	480	200	315	XSGQ05160	3.90
400	480	200	400	XSGQ05161	4.30



Ordering Information

Example

Quantity	Size	Description	PART No.
10	100	CDS	XSGQ05155

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Due to a policy of continuous product development the specification and details contained herein are subject to alteration without prior notice.

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is available for all Actionair products.
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