ISTIQ

NOISE CONTROL SDN BHD

Noise Control Products & Solutions

ACOUSTIC SPECIALIST

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Circular Silencer

Application Notes

One of the exploitable way to reduce noise from ventilation fan is by applying **CIRCULAR SILENCER** on to it. Being cylindrical, the silencer can be merely mounted with method of 'on-fan' or 'in-duct' type of applications.

The usage and purpose of using this silencer is the same as their counterpart - duct silencer. However, **CIRCULAR SILENCER** provide lesser pressure drop and the installation is fast.

Noise from the fans travel in both direction - intake and discharge. It is important to install the **CIRCULAR SILENCER** at both of these sides.

Construction

The casing of **ISTIQ CIRCULAR SILENCER** are constructed from galvanized iron (G.I) sheet metal as our standard that resembles a piece of air conditioning ductwork. The inner casings are made of perforated (G.I) and acoustic infill that meets Class 0 in building regulation when tested in accordance to BS 476: Part 4: 1970 (1980), is placed in between them.

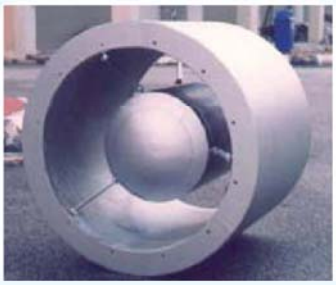
Application on LWSR pumps (before)

Application on LWSR pumps (after)

Different density and type of acoustic infill is used depending on the application to ensure excellent performance. The percentage of perforation of galvanized sheets, which hold the infill, was choosen to give the optimum overall insertion loss.

Features

ISTIQ CIRCULAR SILENCER are available in two different models - iP and iOP which is basically the silencer with pod and without pod respectively.



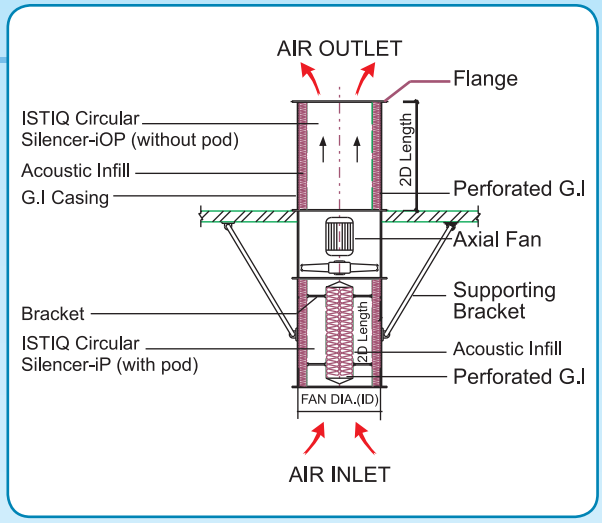
Silencer with Pod

Silencer without Pod

Model iOP (without pod) is a straight through design providing good acoustic performance with negligible pressure loss. For better performance, Model iP (with pod) is recommended in the application. Nevertheless the consideration of the pressure drop need to be taken into account cautiously.

Dimensions

ISTIQ CIRCULAR SILENCER are available from 300 mm diameter upwards and are supplied with flange end for direct attachment to various type of fans. The length are available in two standard sizes which are 1D (diameter) length and 2D (diameter) length. However, other length are also available on request.



Application on Axial Fan.

Acoustic Performance

Circular Silencer Performance

The Insertion Loss of the Silencers performance below have been determined in accordance to BS 4718 : 1971 - Method of Test for Silencers for Air Distribution System.

Data of Insertion Loss (dB)

Diameter (mm)	Length	Model	Octave Center Frequency Band (Hz)							
			63	125	250	500	1k	2k	4k	8k
300 to 590	1 D	iOP	2	4	6	11	16	12	8	9
		iP	4	6	8	13	20	23	21	18
	2 D	iOP	4	7	12	17	23	19	15	13
		iP	7	10	15	24	32	37	30	28
600 to 790	1 D	iOP	3	5	8	15	16	10	9	8
		iP	4	6	11	17	23	22	20	12
	2 D	iOP	5	8	14	23	25	16	14	11
		iP	7	11	16	30	38	35	33	24
950 to 1200	1 D	iOP	3	4	10	13	15	9	8	7
		iP	4	5	11	20	22	16	15	13
	2 D	iOP	5	8	14	21	19	15	13	12
		iP	7	11	19	30	33	29	24	18
1500 to 2400	1 D	iOP	4	5	10	15	13	9	8	7
		iP	5	7	11	23	19	16	13	10
	2 D	iOP	8	10	15	20	21	14	11	10
		iP	9	13	23	25	26	27	18	16

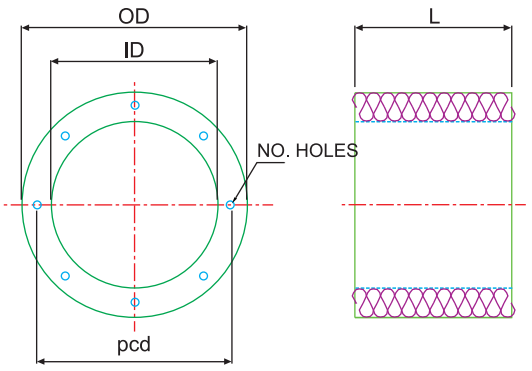
Pressure Drop in Pascal (Pa)

Airflow in m3/s		Model iP - 1D							
		0.4	0.6	1.0	2.0	4.0	6.0	10.0	20.0
Diameter (mm)	315	6	14	41	163				
	355		11	32	135				
	400		5	15	62				
	450			13	50	203	467		
	500			6	25	100	231		
	560			4	15	61	141		
	630				8	34	81	277	
	710				8	32	71	238	
	900					11	26	87	256
	1000					8	20	65	256
	1120						13	45	172
	1250						6	21	81
	1400							11	46
	1600							6	26
	1800							19	84
	2000							11	48

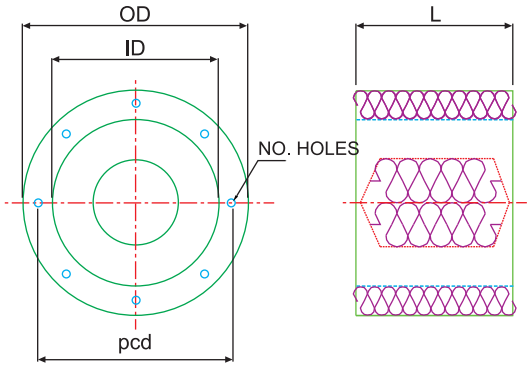
Airflow in m3/s		Model iP - 2D							
		0.4	0.6	1.0	2.0	4.0	6.0	10.0	20.0
Diameter (mm)	315	9	22	61	244				
	355	8	19	56	238				
	400			48	201				
	450			19	78	312	700		
	500			9	39	154	346		
	560			5	20	83	223		
	630				14	51	122	407	
	710				13	48	116	364	
	900					18	42	139	555
	1000					13	31	102	405
	1120						22	72	271
	1250						10	34	128
	1400							17	66
	1600							14	60
	1800							10	40
	2000							7	32

Details Construction

MODEL iOP



MODEL iP



Dimensions								Weight (kg)			
Diameter (mm)	OD	ID	pcd	L - 1D	L - 2D	No of Holes	Tread Size	iP-1D	iP-2D	iOP-1D	iOP-2D
315	522	322	356	300	600	8	M8	10	15	15	20
355	561	361	395	350	700	8	M8	15	20	20	30
400	604	404	438	400	800	12	M8	20	30	25	35
450	653	453	487	450	900	12	M8	25	35	35	45
500	707	507	541	500	1000	12	M8	30	40	40	60
560	764	564	605	550	1100	16	M10	35	50	50	70
630	838	638	674	600	1200	16	M10	45	60	60	85
710	915	715	751	700	1400	16	M10	50	75	75	100
900	1098	898	934	800	1600	24	M10	70	105	100	135
1000	1207	1007	1043	1000	2000	24	M10	95	135	125	190
1120	1330	1130	1174	1100	2200	24	M10	115	160	145	220
1250	1467	1267	1311	1250	2500	24	M10	135	185	165	245
1400	1622	1421	1465	1400	2800	24	M10	215	425	270	525
1600	1793	1593	1637	1600	3200	32	M10	255	495	325	625