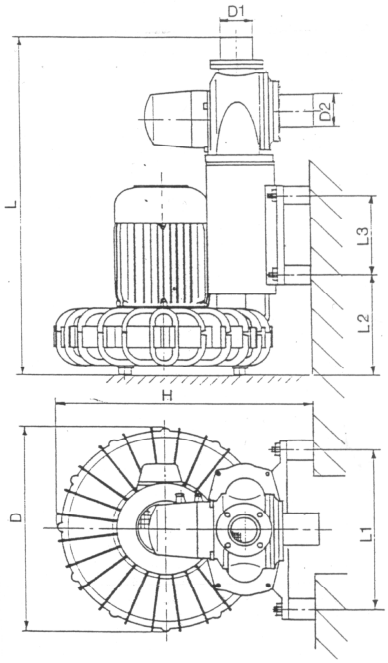
Datasheet

Three-phase-blower



	L	D	H	D1	D2	L1	L2	L3	
SD4	557	358	425	55	55	220	171	120	**mm**
SD6	673	396	472	65	65	310	202	160	**mm**
SD7	845	460	540	80	80	365	206	260	**mm**
SD80	870	500	582	80	80	365	227	260	**mm**

Use:

The three-phase-blower generates the air, which is necessary to operate a Pneumatic Tube System by suction or pressure. As soon as all pending sending processes are finished, the three-phase-blower disconnects automatically. A three-position-valve at the blower allows to switch from pressure to suction within a split-second. The three-phase-blower is produced in a stable, noise-reduced cast aluminium.

Installation:

The three-phase-blower is installed at the floor or on a console at the wall (most of all in a plant room).

Technical data:

Enclosure: IP 54

Frequency: 50 Hz

Allowed ambient temperature: -20°C till + 40°C

Data	SD4	SD6	SD7	SD80
CAPACITY in kW	0,95	2,3	2,9	4,0
VOLTAGE in V (50Hz)	230 / 400	230 / 400	230 / 400	230/400
CURRENT in A	4,2 / 2,3	9,0 / 5,2	11,8 / 6,8	9,0
ROTATIONAL SPEED U/min	2760	2870	2850	2900
AIR VOLUME m^3/min	2,8	4,6	6,5	9,0
PRESSURE max in mbar	180	300	180	200
INITIAL CURRENT in A Ik/In	~ 5,8	~ 6,0	~ 7,0	~ 5,6
RUN-UP TIME in second	~ 4	~ 4	~ 4	~ 4
NOISE LEVEL dB A *	73	79	78	82
HEAT EMISSION kW/h	0,25	0,55	0,6	1,2
COOLING AIR f. motor m^3/h	105	150	210	440
WEIGHT (without RAGZ)	22	33	53	81
(with RAGZ) #	29	40	62	90
DIMENSION SHEET				
(without RAGZ)	42 741 392	42 741 396		
(with RAGZ) #	42 741 393	42 741 397	42 741 411	42 741 411
ART.No. (without RAGZ)	741 390	741 394	741 402	741 403
(with RAGZ) #	741 391	741 395	741 401	741 405

\# Motorvalve with 3 positions

* Max. noise level in dB A, measured in an 1 m distance

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SIDE-CHANNEL-BLOWER CALCULATION:		**tube volume, air speed, compressive foirce**								Input field							
										Calcul.-field							
Tube destination / tube diameter:	D	**110**	[OD/ND]				Static friction factor:		μ_o	0,15							
Inside tube diameter:	D_i	105,4	[mm]	2,3	S [mm]		Dynamic friction factor:		μ	0,01							
Total tube length:	L_{ges}	300	[m]				Static friction force minimu		$F_{Hr\ min.\ [N]}$	2,207							
Carrier weight - minimum:	$m_{min.}$	1,5	[kg]	14,72	[N]		Staatic friction force maxir		$F_{Hr\ max.\ [N]}$	3,679							
Carrier weight - maximum:	$m_{max.}$	2,5	[kg]	24,53	[N]		Dynamic friction force min		$F_{Gr\ min.\ [N]}$	0,147							
							Dynamic friction force ma		$F_{Gr\ max.\ [N]}$	0,245							
Tube inside cross-section area	A	0,873	[dm^2]														
Tube inside volume per meter:	V	8,725	[dm^3]				(1) This (theoretical) calculated force must be subtracted										
Tube inside volume total:	V	**2,618**	[m^3]				from the pressure force!										
							OD = tube outside diameter / ND = Tube nominal (inside) diameter										
BLOWER - Type:		**SD4n-Fu**	**SD4n-Fu**	**SD4n-Fu**	**SD4n-Fu**	**SD7-Fu**	**SD7-Fu**	**SD4n**	**SD4n**	**SD4n**	**SD4n**	**SD4n**	**SD4n**	**SD6**	**SD6**	**SD6**	**SD6**
BLOWER w. valve / Order number:	**[-]**	**- - -**	**- - -**	**- - -**	**- - -**	**- - -**	**- - -**	**741.391**	**741.391**	**741.418**	**741.418**	**741.420**	**741.420**	**741.395**	**741.395**	**741.425**	**741.425**
BLOWER w/o. valve / Order number:	**[-]**	**741.501**	**741.505**	**741.502**	**741.506**	**741.503**	**741.504**	**741.390**	**741.390**	**741.451**	**741.451**	**741.458**	**741.458**	**741.394**	**741.394**	**- - -**	**- - -**
Efficiency classes - efficiency factor:		Not IE2	Not IE2	Not IE2	Not IE2	Not IE2	Not IE2	IE2-79,6	Not IE2	IE2-84,0	Not IE2	IE2-84,0	Not IE2	IE2-83,2	Not IE2	IE2-85,5	Not IE2
		80 Hz	80 Hz	80 Hz	80 Hz	80 Hz	80 Hz	50 Hz	60 Hz	60 Hz	60 Hz	60 Hz	60 Hz	50 Hz	60 Hz	60 Hz	60 Hz
Motor power:	[KW]	**1,50**	**2,20**	**3,00**	**4,00**	**4,00**	**7,50**	**1,10**	**1,60**	**1,32**	**1,60**	**1,32**	**1,60**	**2,20**	**3,00**	**2,64**	**3,00**
Delta connection voltage:	[V]	230	230	400	400	400	400	230	249-305	208	187-229	230	208-254	230	249-305	230	208-254
Delta connection current:	[A]	4,35	9,20	7,00	9,00	9,70	17,00	4,00	5,20-4,94	5,00	6,93-6,58	4,45	6,24-5,92	7,50	9,01-9,35	9,20	10,81-11,22
Star connection voltage:	[V]	- - -	- - -	- - -	- - -	- - -	- - -	400	432-528	360	324-396	400	360-440	400	432-528	400	360-440
Star connection current:	[A]	- - -	- - -	- - -	- - -	- - -	- - -	2,30	3,00-2,85	2,85	4,00-3,80	2,60	3,60-3,42	4,35	5,20-5,40	5,30	6,24-6,48
Frequency:	[Hz]	80	80	80	80	80	80	50	60	60	60	60	60	50	60	60	60
Rotation speed:	[1/min]	4650	4625	4660	4670	4665	4730	2830	3390	3400	3390	3400	3390	2870	3445	3480	3445
Blower volume performance:	[m^3/min]	**4,30**	**4,30**	**4,30**	**4,30**	**10,50**	**10,50**	**2,80**	**3,40**	**3,40**	**3,40**	**2,90**	**3,40**	**4,60**	**5,40**	**5,40**	**5,40**
Blower differential pressure:	[mbar]	45	200	275	370	70	240	185	240	180	240	160	240	300	300	230	300
Filling time for total tube (theoretical):	[min]	0,609	0,609	0,609	0,609	0,249	0,249	0,935	0,770	0,770	0,770	0,903	0,770	0,569	0,485	0,485	0,485
Filling time for total tube (theoretical):	[min:sec]	0:36	0:36	0:36	0:36	0:14	0:14	0:56	0:46	0:46	0:46	0:54	0:46	0:34	0:29	0:29	0:29
Air-speed (theoretical):	**[m/sec]**	**8,214**	**8,214**	**8,214**	**8,214**	**20,057**	**20,057**	**5,349**	**6,495**	**6,495**	**6,495**	**5,540**	**6,495**	**8,787**	**10,315**	**10,315**	**10,315**
Pressure force cross section area:	F [N]	**39,26**	**174,50**	**239,94**	**322,83**	**61,08**	**209,40**	**161,41**	**209,40**	**157,05**	**209,40**	**139,60**	**209,40**	**261,75**	**261,75**	**200,68**	**261,75**

SIDE-CHANNEL-BLOWER CALCULATION:														
Tube destination / tube diameter:	D													
Inside tube diameter:	D_i													
Total tube length:	L_{ges}													
Carrier weight - minimum:	$m_{min.}$													
Carrier weight - maximum:	$m_{max.}$													
Tube inside cross-section area	A													
Tube inside volume per meter:	V													
Tube inside volume total:	V													
BLOWER - Type:		**SD6**	**SD7**	**SD7**	**SD7**	**SD7**	**SD7**	**SD7**	**SD7**	**SD80**	**SD80**	**SD80**	**SD90**	**SD90**
BLOWER w. valve / Order number:	**[-]**	**741.427**	**741.401**	**741.401**	**741.436**	**741.437**	**741.437**	**741.400**	**741.400**	**741.405**	**741.405**	**741.408**	**741.406**	**741.406**
BLOWER w/o. valve / Order number:	**[-]**	**- - -**	**741.402**	**741.402**	**- - -**	**- - -**	**- - -**	**- - -**	**- - -**	**741.403**	**741.403**	**- - -**	**- - -**	**- - -**
Efficiency classes - efficiency factor:		IE2-85,5	IE2-84,6	Not IE2	IE2-87,5	IE2-87,5	Not IE2	IE2-87,5	Not IE2	IE2-84,6	Not IE2	IE2-88,5	IE2-84,6	Not IE2
		60 Hz	50 Hz	60 Hz	60 Hz	60 Hz	50 Hz	60 Hz	50 Hz	50 Hz	50 Hz	60 Hz	50 Hz	60 Hz
Motor power:	[KW]	**2,68 (3,6hp)**	**3,00**	**4,00**	**3,65 (4,9hp)**	**3,60**	**3,50**	**3,60**	**3,60**	**4,00**	**5,50**	**4,85 (6,5hp)**	**5,50**	**7,80**
Delta connection voltage:	[V]	208	400	432-528	208	230	173-212	277	208-254	400	360-440	208	400	432-528
Delta connection current:	[A]	10,30	6,00	7,00-6,90	13,90	12,60	14,55-14,34	10,40	12,12-11,95	7,90	11,00-10,20	17,70	10,50	12,70-11,50
Star connection voltage:	[V]	360	- - -	- - -	360	400	300-367	480	360-440	- - -	- - -	360	- - -	- - -
Star connection current:	[A]	5,90	- - -	- - -	8	7,3	8,40-8,28	6,00	7,00-6,90	- - -	- - -	10,2	- - -	- - -
Frequency:	[Hz]	60	50	60	60	60	50	60	50	50	50	60	50	60
Rotation speed:	[1/min]	3480	2890	3470	3500	3500	2880	3500	2880	2935	2905	3525	2940	3535
Blower volume performance:	[m^3/min]	**5,40**	**6,50**	**8,00**	**8,00**	**8,00**	**6,50**	**8,00**	**6,50**	**9,00**	**9,00**	**11,00**	**14,50**	**17,50**
Blower differential pressure:	[mbar]	230	200	200	200	200	220	200	220	200	300	175	160	160
Filling time for total tube (theoretical):	[min]	0,485	0,403	0,327	0,327	0,327	0,403	0,327	0,403	0,291	0,291	0,238	0,181	0,150
Filling time for total tube (theoretical):	[min:sec]	0:29	0:24	0:19	0:19	0:19	0:24	0:19	0:24	0:17	0:17	0:14	0:10	0:08
Air-speed (theoretical):	**[m/sec]**	**10,315**	**12,416**	**15,282**	**15,282**	**15,282**	**12,416**	**15,282**	**12,416**	**17,192**	**17,192**	**21,012**	**27,698**	**33,428**
Pressure force cross section area:	F [N]	**200,68**	**174,50**	**174,50**	**174,50**	**174,50**	**191,95**	**174,50**	**191,95**	**174,50**	**261,75**	**152,69**	**139,60**	**139,60**