



# RTWK

## Swirl diffuser, conical

## Supply

## Surface-mounted, T-bar mounted, suspended

## Manual, servomotor or thermal operation

### Use

The round, conical RTWK swirl diffuser is suitable for supplying cooled or heated air with a large temperature difference in respect of the room temperature. The housing consists of a cylindrical cone with six swirl blades that can be adjusted manually, with a servomotor or thermally. Any required supply-air direction can be adjusted from horizontal to vertical. The grid can be supplied with a separately supplied plenum box which is standard equipped with 8 mm hanging holes in the raised edge of the plenum. The diffuser is extremely suitable for air-heating systems in rooms with high ceilings. The large penetration depth makes it possible to use a lower air capacity.

### Characteristics

Max. number of air changes:	up to 15 x
Undertemperature:	up to 10 K
Overtemperature:	up to 15 K

### Version

#### Swirl diffuser

cylindrical cone:	aluminium
post-treatment:	epoxy
colour:	white RAL 9010

#### RTWK

swirl blades:	steel
post-treatment:	epoxy
colour:	white RAL 9010 or optional (additional cost), except for RTWK-N

#### RTWK-N

swirl blades:	Nylon
post-treatment:	wet-paint finish
colour:	white RAL 9010

#### Plenum box

material:	sendzimir galvanised steel
internal insulation:	1/2" duct liner
post-treatment:	none

### Available types

#### RTWK----

- R** round
- T** supply
- W** adjustable
- K** conical

#### - Ceiling version

- Z** surface-mounted (model 160-800)
- T** modular steel ceiling panel 595 x 595 (model 160-315)
- D** modular steel ceiling panel 620 x 620 (model 160-315)
- F** modular steel ceiling panel 670 x 670 (model 160-315)

#### - Blades/mechanism

- N** nylon/ABS (standard manual, suitable for servomotor)
- O** steel/ABS (manual only)
- N** steel/ABS (standard manual, suitable for servomotor)
- S** steel/aluminium (standard manual, suitable for servomotor)

#### - Operation (from model 200)

- M** Belimo 0-10 V DC (L/N/S)M24ASR
- N** Belimo 2 settings (L/N/S)M24A
- O** manual
- T** thermal spring (for steel blade + aluminium mechanism only)

#### - Version

- O** round top connection
- R** internally insulated plenum box (supplied separately)
- U** uninsulated plenum box (supplied separately)

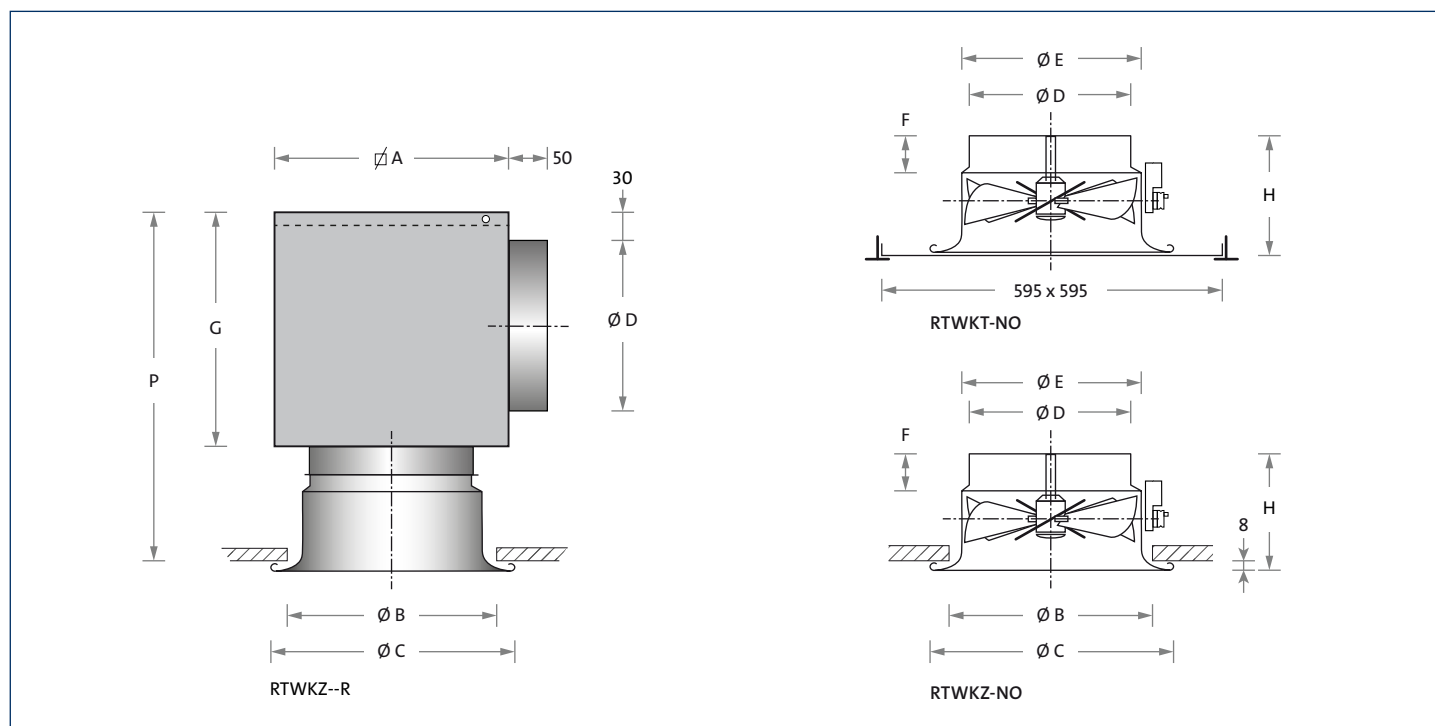
#### Optional

ball-protection grid:	steel
post-treatment:	epoxy
colour:	white RAL 9010

#### Servomotor

make:	Belimo
control:	open/close or 0-10 V DC
power:	24V AC

## Dimensions



## Available dimensions and sizes

model	A	H	F	B	C	E	D	G	P
160	220	155	65	270	300	198	158	206	375
200	260	180	60	320	350	248	198	245	439
250	310	205	70	370	400	298	248	296	515
315	375	230	70	470	500	398	313	361	605
400	460	270	105	585	615	465	398	446	730
500	560	320	95	750	780	565	498	546	880
630	700	390	105	905	935	665	628	676	1080
800	*	390	0	990	1020	798	798	*	*

\* Sizes on request.

## Weight

model	type
	without plenum
	kg
160	1.3
200	2.0
250	2.7
315	3.8
400	6.3
500	8.9
630	14.5
800	30.0

## Note

- The listed dimensions are in mm.

## Fitting

However, the disruption of the flow due to bends and branches must be taken into account. For an optimum flow, we recommend a flow in the diffusers after a bend or a branch with a 1.5 x D straight length in the size of the diffuser connection.

## Selection details

### RTWK

air volume		model																									
		160			200			250			315			400			500			630			800				
m <sup>3</sup> /s	m <sup>3</sup> /h	V <sub>h</sub> m/s	Δp <sub>s</sub> Pa	L <sub>pA</sub> dB(A)	V <sub>h</sub> m/s	Δp <sub>s</sub> Pa	L <sub>pA</sub> dB(A)	V <sub>h</sub> m/s	Δp <sub>s</sub> Pa	L <sub>pA</sub> dB(A)	V <sub>h</sub> m/s	Δp <sub>s</sub> Pa	L <sub>pA</sub> dB(A)	V <sub>h</sub> m/s	Δp <sub>s</sub> Pa	L <sub>pA</sub> dB(A)	V <sub>h</sub> m/s	Δp <sub>s</sub> Pa	L <sub>pA</sub> dB(A)	V <sub>h</sub> m/s	Δp <sub>s</sub> Pa	L <sub>pA</sub> dB(A)	V <sub>h</sub> m/s	Δp <sub>s</sub> Pa	L <sub>pA</sub> dB(A)		
0.030	<b>108</b>	1.5	2	-																							
0.040	<b>144</b>	2.0	4	-																							
0.050	<b>180</b>	2.5	6	23	1.6	3	-																				
0.060	<b>216</b>	3.0	9	28	2.0	3	-	1.3	1	-																	
0.070	<b>252</b>				2.2	5	-	1.4	2	-																	
0.080	<b>288</b>				2.7	6	20	1.7	2	-																	
0.100	<b>360</b>				3.4	10	27	2.1	4	-	1.3	2	-														
0.125	<b>450</b>				4.2	15	34	2.7	6	21	1.7	2	-														
0.150	<b>540</b>				5.0	22	39	3.2	9	27	2.0	3	-														
0.200	<b>720</b>				6.7	39	47	4.2	15	36	2.7	6	21	1.6	2	-											
0.250	<b>900</b>							5.3	24	42	3.3	10	28	2.0	4	-											
0.300	<b>1080</b>							6.4	34	48	4.0	14	34	2.4	5	21	1.6	2	-								
0.400	<b>1440</b>										5.3	24	42	3.3	10	30	2.1	4	-								
0.500	<b>1800</b>										6.6	38	49	4.1	15	37	2.6	6	24	1.6	2	-					
0.600	<b>2160</b>													4.9	22	42	3.1	9	29	2.0	3	-					
0.800	<b>2880</b>													6.5	38	51	4.2	15	38	2.6	6	23					
1.000	<b>3600</b>																5.2	24	45	3.3	10	30					
1.250	<b>4500</b>																			4.0	15	36	2.5	5	22		
1.500	<b>5400</b>																			4.9	22	42	3.0	8	27		
2.000	<b>7200</b>																						4.0	14	36		

## General

- The pressure loss is given without volume unit or plenum box.
- The assumed room attenuation is 10 dB.
- The sound pressure is given for a blade angle of 45 degrees.
- V<sub>h</sub> = neck velocity.

## Fitting height

model	fitting height														fitting height m
160															2.2 - 3.0m
200															2.5 - 3.5m
250															3.1 - 4.8m
315															3.5 - 5.8m
400															4.5 - 7.0m
500															5.8 - 14.0m
630															8.0 - 25.0m
800															9.0 - 30.0m
	2	3	4	5	6	7	8	9	10	15	20	25	30	35	m

## Selection method

- The model size is determined with the tables. It is permitted to interpolate the interim values.
- Check the recommended fitting height (the underside of the diffuser in relation to the floor) in the "Fitting height" table above.
- Please ask our sales department for more information.

## Blade angle adjustment

