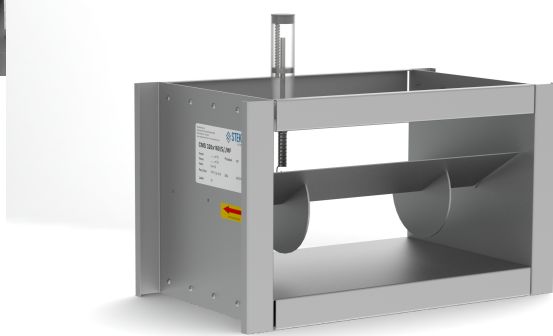




Mechanical Constant Flow Damper
CM-R / CM-Q

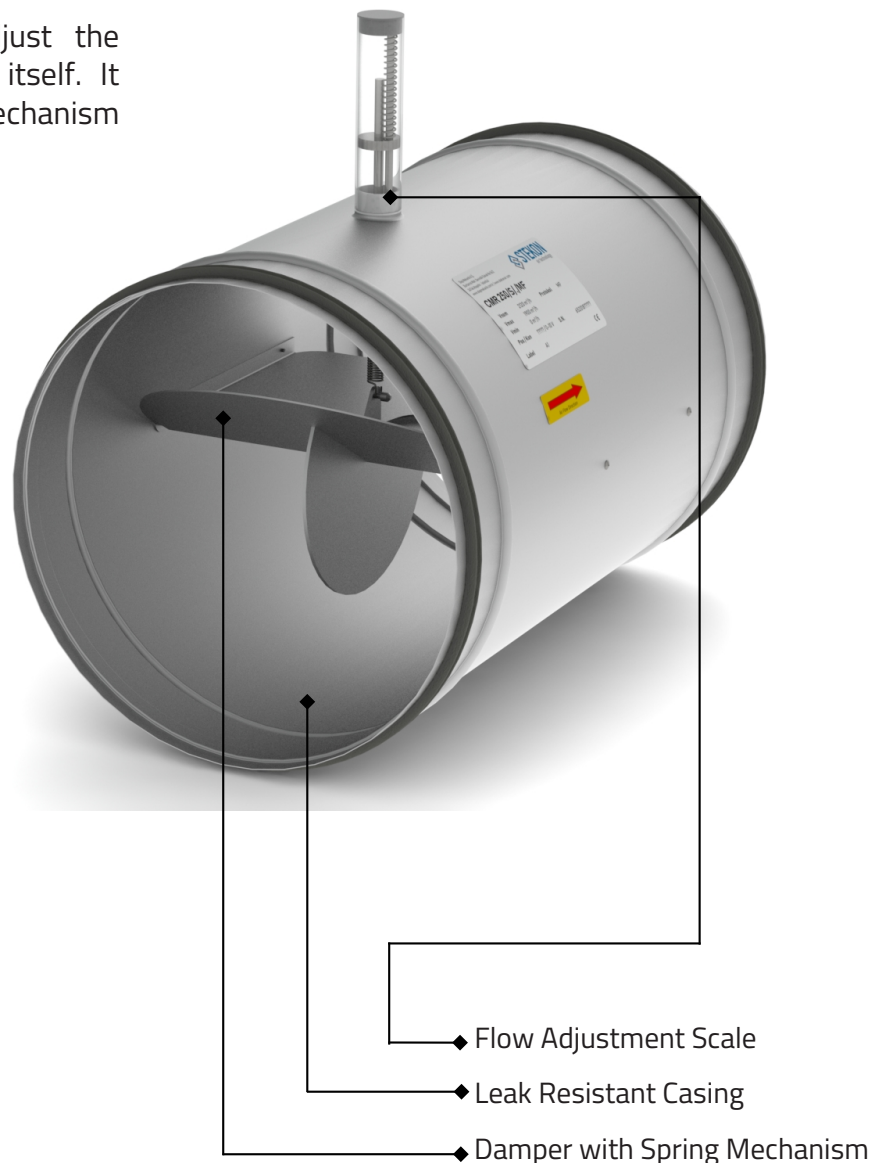
Mechanical Constant Flow Damper CM-Q/R

Model: **CM-R** (Circular mechanical constant flow damper)
CM-Q (Rectangular mechanical constant flow damper)

Mechanical Constant Flow Damper adjust the required air flow rate mechanically by itself. It controls with its spring operated mechanism without adhering to any electrical power.

The controller operates from the minimum response pressure difference up to maximum pressure of 1000Pa and air velocity range 2 -10 m/s. Over this entire pressure range, the maximum flow rate deviation is +/-10%. The required air flow rate can be changed via an allen wrench on the unit easily.

Product external casing is manufactured from galvanized sheet, its internal components are galvanized and aluminium sheet.





CM-. | Mechanical Constant Flow Damper

CM-R



CM-R/D

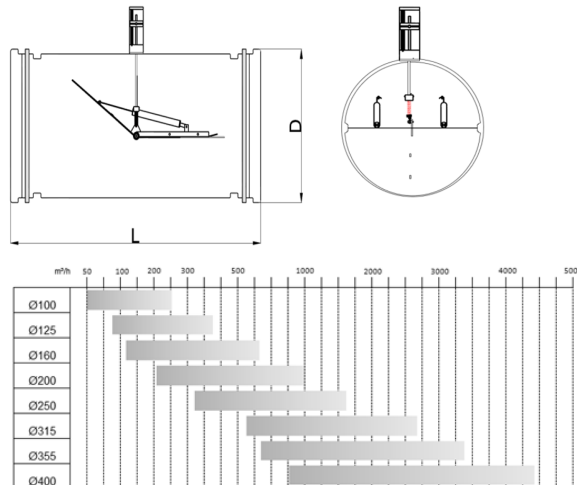


CM-Q

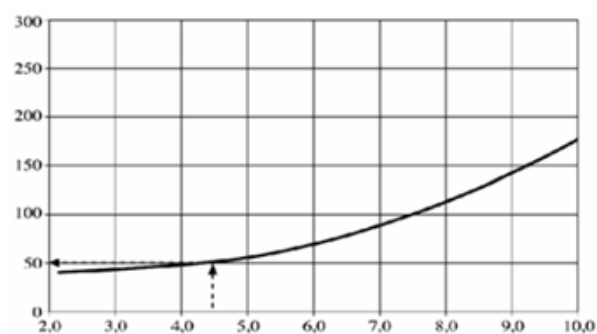


Circular mechanical constant flow damper

Standard Dimensions		Minimum	Maksimum
ØD, mm	L, mm	Flow, m³/h	Flow, m³/h
Ø100	240	50	250
Ø125	240	80	400
Ø160	240	130	670
Ø200	280	210	1000
Ø250	280	330	1650
Ø315	450	540	2700
Ø355 *	450	690	3400
Ø400	450	880	4400



Static Minimum Reaction Pressure Difference



y = Differential Pressure (Pa)
x = Air Speed (m/s)

When designing the duct system, the static minimum reaction pressure difference should be considered.

Example: Provided ;

Constant Flow Damper : CM-R

Size : Ø160

Air Velocity : 4,5m/s

Air Volume : 325 m³/h

Static minimum reaction pressure difference according to the graphic:

Δp : 50 Pa

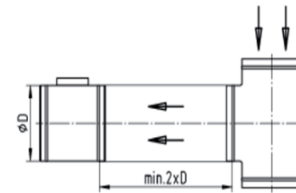
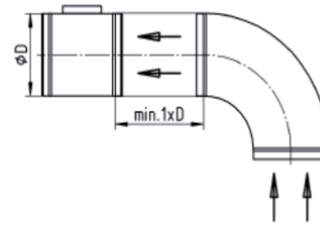
CM/. | Mechanical Constant Flow Damper

Installation

During installation, the air flow direction label on the unit must be paid attention first.

The spigot connection of the constant volume damper, allows it to be removable when required.

Constant volume damper can be installed in vertical or horizontal position. For the vertical application, additional precautions should be done for a better and safer installation.



When installing the device on the main duct branches, minimum 2D distance should be left before the unit.

And for the corner duct applications minimum 1D distance should be enough.

For the constant volume damper to be working properly, you should be sure that the duct system is cleared off the particles and dust.

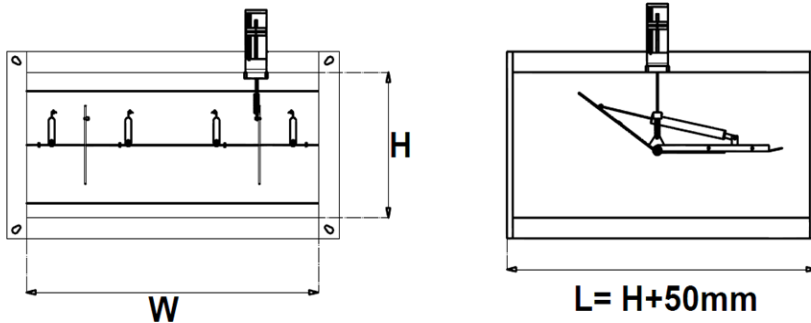
Maintenance : In normal conditions non of the elements on the constant volume damper need any maintenance and are protected against corrosion and ageing.

Rectangular mechanical constant flow damper

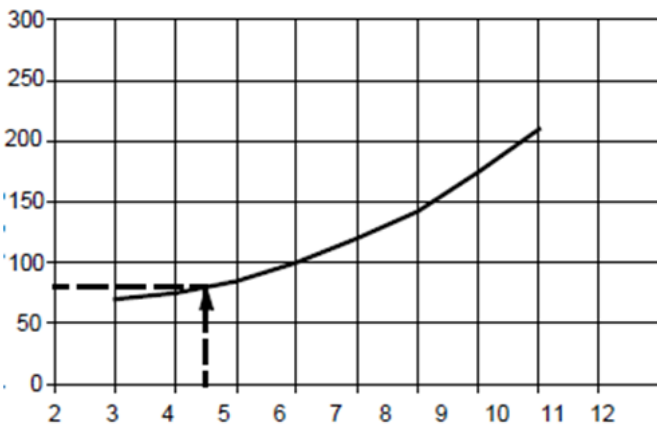
Sizes and Flow Ranges

	W / H	Hava Debisi	H [mm]													
			100	150	200	250	300	350	400	450	500	600	700	800	900	1000
W [mm]	100	min. flow [m³/h]	75	110	150	180	200	250	300	330	360	430	500	570	650	700
		max. flow [m³/h]	350	550	700	900	1000	1250	1400	1600	1800	2150	2500	2900	3250	3600
	150	min. flow [m³/h]	110	150	200	250	300	350	450	490	550	650	750	850	950	1100
		max. flow [m³/h]	550	800	1000	1300	1600	1800	2100	2400	2700	3250	3800	4300	4850	5400
	200	min. flow [m³/h]	150	200	300	350	400	500	550	650	750	850	1000	1150	1300	1450
		max. flow [m³/h]	700	1000	1400	1800	2100	2500	2800	3250	3500	4300	5000	5750	6500	7200
	250	min. flow [m³/h]	180	250	350	450	500	600	700	800	900	1100	1250	1450	1600	1800
		max. flow [m³/h]	900	1300	1800	2200	2600	3100	3500	4000	4400	5400	6300	7200	8100	9000
	300	min. flow [m³/h]	200	300	400	550	600	750	850	950	1000	1250	1500	1750	2000	2150
		max. flow [m³/h]	1000	1600	2100	2700	3200	3700	4300	4800	5300	6400	7500	8500	9500	10800
	400	min. flow [m³/h]	300	450	550	700	850	1000	1100	1300	1400	1700	2000	2300	2600	3000
		max. flow [m³/h]	1400	2100	2800	3500	4300	5000	5700	6500	7100	8600	9900	11500	13000	14000
	450	min. flow [m³/h]	---	490	650	800	950	1100	1300	1450	1600	1950	2250	2600	2900	3250
		max. flow [m³/h]	---	2400	3250	4000	4800	5600	6500	7300	8100	9700	11300	12950	14500	16200
	500	min. flow [m³/h]	---	---	750	900	1000	1200	1400	1600	1700	2100	2500	2900	3250	3600
		max. flow [m³/h]	---	---	3500	4400	5300	6200	7100	8100	9000	10500	12600	14400	16200	18000
	600	min. flow [m³/h]	---	---	850	1100	1250	1500	1700	1950	2100	2600	3000	3450	3900	---
		max. flow [m³/h]	---	---	4300	5400	6400	7500	8600	9700	10500	13000	15100	17300	19400	---
	700	min. flow [m³/h]	---	---	---	1250	1500	1800	2000	2250	2500	3000	3500	4000	---	---
		max. flow [m³/h]	---	---	---	6300	7500	8500	9900	11300	12600	15100	17650	20100	---	---
	800	min. flow [m³/h]	---	---	---	---	1750	2000	2300	2600	2900	3450	---	---	---	---
		max. flow [m³/h]	---	---	---	---	8500	9900	11500	12950	14400	17300	---	---	---	---
	900	min. flow [m³/h]	---	---	---	---	2000	2300	2600	2900	3250	3900	---	---	---	---
		max. flow [m³/h]	---	---	---	---	9500	11000	13000	14500	16200	19400	---	---	---	---
	1000	min. flow [m³/h]	---	---	---	---	---	2500	3000	3250	3600	---	---	---	---	---
		max. flow [m³/h]	---	---	---	---	---	12600	14000	16200	18000	---	---	---	---	---

Sizes



Static Minimum Reaction Pressure Difference



y = Differential Pressure (Pa)
x = Air Speed (m/s)

When designing the duct system, the static minimum reaction pressure difference should be considered.

Example:

Constant Flow Damper : CM-Q

Size : 300x200

Air Velocity : 4,5m/s

Air Volume : 2 m³/h

Static minimum reaction pressure difference according to the graphic:

Δp : 80 Pa

Installation

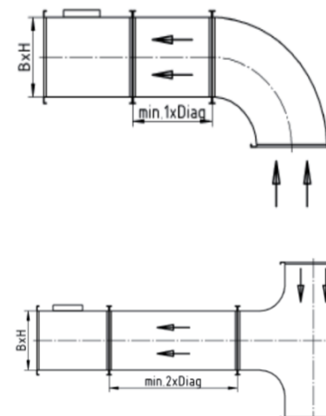
During installation, the air flow direction label on the unit must be paid attention first.

Constant volume damper can be installed in vertical or horizontal position by a simple flange connection.

When installing the device on the main duct branches $2 \times (W \times H)$ straight distance should be left before the unit.

And for the corner duct applications minimum $1 \times (W \times H)$ distance should be left before the unit.

For the constant volume damper to be working properly, you should be sure that the duct system is cleared off the particles and dust.



Maintenance : In normal conditions non of the elements on the constant volume damper need any maintenance and are protected against corrosion and ageing.

CM-. | Mechanical Constant Flow Damper

CM-R - Airborne Noise

Nominal sizes [mm]	Air Volume [m³/h]	Differential Static Pressure [Pa]																											
		100 Pa										250 Pa										500 Pa							
		Sound Power Level LW								Total Power Level LWtot A-weighted [dB(A)]	Sound Power Level LW								Total Power Level LWtot A-weighted [dB(A)]	Sound Power Level LW								Total Power Level LWtot A-weighted [dB(A)]	
		[dB/Octave]									[dB/Octave]									[dB/Octave]									
		63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
100	50	40	39	38	36	35	36	30	29	41	43	45	46	47	49	44	43	53	49	52	52	53	54	55	50	50	60		
	135	50	48	45	42	41	40	34	33	46	59	57	54	51	50	49	43	42	55	60	60	58	57	57	58	53	52	63	
	200	54	52	49	47	45	45	39	38	51	63	61	58	55	54	54	48	47	59	70	68	65	62	61	60	54	53	66	
125	100	41	40	38	36	35	36	30	29	41	45	47	47	48	48	49	44	43	54	52	54	54	55	56	50	49	60		
	190	51	49	46	42	41	40	34	32	46	55	54	53	51	51	51	46	45	56	61	61	59	58	57	58	52	52	63	
	280	54	53	50	47	45	45	39	37	50	63	61	58	55	54	53	47	46	59	64	64	62	61	62	57	56	67		
160	180	44	43	41	39	38	38	32	31	43	48	50	50	50	51	46	45	56	55	57	57	57	57	58	53	51	63		
	340	53	51	48	44	43	42	36	34	48	62	60	56	53	51	51	44	43	57	64	64	62	60	60	60	55	54	65	
	500	57	55	52	49	47	47	40	39	52	66	64	61	58	56	55	49	48	61	72	70	67	64	62	62	56	54	68	
200	250	45	43	41	39	38	37	31	30	43	51	52	52	51	51	51	45	44	56	57	59	58	58	57	58	52	50	63	
	575	55	53	50	46	44	44	37	36	50	64	62	58	55	53	53	46	45	59	66	66	64	62	62	62	56	56	67	
	900	-	-	-	-	-	-	-	-	-	68	66	63	60	58	58	52	50	64	75	73	70	67	65	65	58	57	70	
250	500	48	47	45	43	41	41	35	34	47	54	56	55	54	55	49	48	60	61	62	62	61	61	62	56	54	66		
	1000	57	55	52	49	47	46	39	38	52	66	64	61	57	55	55	48	47	61	69	68	67	65	64	64	59	58	69	
	1500	-	-	-	-	-	-	-	-	-	70	68	65	62	60	60	53	52	65	77	75	72	68	67	66	60	58	72	
315	600	48	46	44	41	39	39	32	31	44	55	56	55	54	53	53	46	44	58	62	63	62	61	60	59	53	51	65	
	1400	57	55	52	48	46	45	39	37	51	66	64	60	57	55	54	47	46	60	70	69	67	65	64	64	58	57	69	
	2200	-	-	-	-	-	-	-	-	-	71	69	65	62	60	59	53	51	65	77	75	72	69	67	66	60	58	72	
400	100	50	48	45	42	41	40	33	31	46	58	59	57	56	55	54	47	45	59	65	65	64	62	61	61	54	51	66	
	2200	58	56	52	49	47	46	39	37	52	67	65	61	57	55	54	48	46	61	72	71	68	66	65	65	59	57	70	
	3800	-	-	-	-	-	-	-	-	-	73	71	67	64	62	61	55	53	67	79	77	74	70	68	68	61	60	74	

CM-Q - Airborne Noise

Width [mm]	Height [mm]	Air Velocity [m/s]	Air Flow [m³/h]	Differential Static Pressure [Pa]																																	
				100 Pa												250 Pa								500 Pa													
				Sound Power Level LW								Total Power Level LWtot A-weighted [dB(A)]	Sound Power Level LW											Total Power Level LWtot A-weighted [dB(A)]	Sound Power Level LW												
				[dB/Octave]								[dB/Octave]								[dB/Octave]																	
63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz														
200	100	2.8	202	48	47	46	44	42	40	37	35	48	56	55	54	52	50	48	45	43	59	62	61	60	58	56	54	51	49								
		6.3	435	53	53	52	50	49	47	45	42	54	61	61	60	58	57	55	53	50	62	67	67	66	64	63	61	59	56								
		9.7	698	-	-	-	-	-	-	-	-	-	64	64	63	62	61	59	57	59	66	70	70	69	68	67	65	63	61								
300	100	2	216	46	45	44	42	40	37	35	42	45	54	53	52	50	48	45	43	40	53	60	59	58	56	54	51	49	46								
		4.7	508	53	52	51	49	47	45	43	40	53	61	60	59	57	55	53	51	48	61	67	66	65	63	61	59	57	54								
		7.4	799	-	-	-	-	-	-	-	-	-	64	63	62	61	59	57	55	53	65	70	69	68	67	65	63	61	59								
400	100	2.1	302	47	46	45	43	41	38	35	32	46	55	54	53	51	49	46	43	40	54	61	60	59	57	55	52	49	46								
		4.9	705	53	53	51	50	48	46	44	41	54	61	60	59	58	56	54	52	49	62	67	66	65	64	62	60	58	55								
		7.6	1094	-	-	-	-	-	-	-	-	-	64	64	63	61	60	58	56	53	65	70	70	69	67	66	64	62	59								
300	150	3	486	52	50	49	47	45	43	40	37	50	60	58	57	55	53	51	48	45	58	66	64	63	61	59	57	54	51								
		6	972	56	56	54	53	51	49	47	44	57	64	64	62	61	59	57	55	52	65	70	70	68	67	65	63	61	58								
		9	1458	59	59	58	56	55	53	51	48	60	67	66	66	64	63	61	59	56	68	73	73	72	70	69	67	65	62								
200	200	3	432	52	50	49	47	45	43	40	37	50	60	58	57	55	53	51	48	45	58	66	64	63	61	59	57	54	51								
		6	864	56	56	54	53	51	49	47	44	57	64	64	62	61	59	57	55	52	65	70	70	68	67	65	63	61	58								
		9	1296	59	59	58	56	55	53	51	48	60	67	66	66	64	63	61	59	56	68	73	73	72	70	69	67	65	62								
300	200	3	648	53	52	50	48	46	44	41	38	51	61	60	58	56	54	52	49	46	59	67	66	64	62	60	58	55	52								
		6	1296	58	57	56	54	52	50	48	45	58	66	65	64	62	60	58	56	53	66	72	71	70	68	66	64	62	59								
		9	1944	61	60	59	57	56	54	52	49	61	69	68	67	65	64	62	59	57	69	75	74	73	71	70	68	65	63								
400	200	3	684	54	52	51	49	47	44	41	38	52	62	60	59	57	55	52	49	46	60	68	66	65	63	61	58	55	52								
		6	1728	59	58	56	55	53	51	48	45	58	67	66	64	63	61	59	56	53	66	73	72	70	69	67	65	62	59								
		9	2592	61	61	60	58	56	54	52	49	62	69	69	68	66	64	62	60	57	70	75	75	74	72	70	68	66	63								
300	300	3	972	54	53	51	49	47	45	42	39	53	62	61	59	57	55	53	50	47	61	68	67	65	63	61	59	56	53								
		6	1944	60	58	57	56	54	51	49	46	59	67	66	65	63	62	59	57	54	67	74	72	71	69	68	65	63	60								
		9	2916	62	62	60	59	57	55	53	50	63	70	69	68	67	65	63	61	58	71	76	75	74	73	71	69	67	64								
600	300	3	1944	56	55	53	51	49	46	43	40	54	64	63	61	59	57	54	51	48	62	70	69	67	65	63	60	57	54								
		6	3888	62	60	59	57	55	53	50	47	61	70	68	67	65	63	61	58	55	69	76	74	73	71	69	67	64	61								
		9	5832	65	64	62	61	59	57	54	51	64	73	72	70	69	67	65	62	59	72	79	78	76	75	73	71	68	65								
400	400	3	1728	56	55	53	51	49	46	43	40	54	64	63	61	59	57	54	51	48	62	70	69	67	65	63	60	57	54								
		6	3456	62	60	59	57	55	53	50	47	61	70	68	67	65	63	61	58	55	69	76	74	73	71	69	67	64	61								
		9	5184	-	-	-	-	-	-	-	-	-	73	72	70	69	67	65	62	59	72	79	78	76	75	73	71	68	65								
500	400	3	2160	57	56	54	52	49	46	43	40	55	65	64	62	60	57	54	51	48	63	71	70	68	66	63	60	57	54								
		6	4320	62	61	60	58	56	53	51	48	61	70	69	68	66	64	61	59	56	69	76	75	74	72	70	67	65	62								
		9	6480	-	-	-	-	-	-	-	-	-	73	72	71	69	67	65	63	60	73	79	78	77	75	73	71	69	66								
600	400	3	2592	58	56	54	52	50	47	44	41	55	66	64	62	60	58	55	52	48	63	72	70	68	66	64	61	58	54								
		6	5184	63	62	60	58	56	54	51	48	62	71	70	68	66	64	62	59	56	69	77	76	74	72	70	68	65	62								
		9	7776	-	-	-	-	-	-	-	-	-	74	73	71	70	68	65	63	60	73	80	79	77	76	74	71	69	66								
500	500	3	2700	58	56	54	52	50	47	44	41	55	66	64	62	60	58	55	52	49	63	72	70	68	66	64	61	58	55								
		6	5400	63	62	60	59	56	54	51	48	62	71	70	68	66	64	62	59	56	70	77	76	74	73	70	68	65	62								
		9	8100	-	-	-	-	-	-	-	-	-	74	73	72	70	68	66	63	60	73	80	79	78	76	74	72	69	66								
600	500	3	3240	58	56	55	53	50	47	44	41	56	66	65	63	61	58	55	52	49	64	72	71	69	67	64	61	58	55								
		6	6480	64	62	61	59	57	54	51	48	62	72	70	69	67	64	62	59	56	70	78	77	75	73	71	68	65	62								
		9	9720	-	-	-	-	-	-	-	-	-	75	74	72	71	68	66	63	61	74	81	80	78	77	74	72	70	67								
600	600	3	3888	59	57	55	53	51	48	45	41	56	67	65	63	61	59	56	53	49	64	73	71	69	67	65	62	59	55								
		6	7778	65	63	62	60	57	55	52	49	63	72	71	69	68	65	62	60	57	71	78	77	76	74	71	69	66	63								
		9	11664	-	-	-	-	-	-	-	-	-	75	74	73	71	69	67	64	61	74	82	80	79	77	75	73	70	67								

Ordering Code

CM - .. / .. / .. / ... - ...

(1) (2) (3) (4) (5)

(1) Model CM = Mechanical Constant Flow Damper

(2) Type R : Round
Q : Rectangular

(3) Boyut Ø or WxH

(4) Insulation D = with
- = without

(5) Flow Range Set value [m³/h]

