TOSHIBA

TCTC-E21-VRF004-7

Engineering Data Book

High Static Pressure Duct Type

MMD-UP0181HP-E / TR
MMD-UP0241HP-E / TR
MMD-UP0271HP-E / TR
MMD-UP0361HP-E / TR
MMD-UP0481HP-E / TR
MMD-UP0561HP-E / TR
MMD-UP0721HP-E / TR
MMD-UP0961HP-E / TR

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1. Specifications

Model name		MMD -	UP0181HP-E / TR	UP0241HP-E / TR	UP0271HP-E / TR	UP0361HP-E / TR
Power supply			1 ph 230V (220-240V) ~ 50 Hz & 1 ph 220V (208-230V) ~ 60 Hz			
Cooling capacity (*1)		(kW)	5.6	7.1	8.0	11.2
Heating capacity (*1)		(kW)	6.3	8.0	9.0	12.5
Running current		(A)	0.82	0.92	1.16	1.39
Power consumption		(kW)	0.125	0.140	0.190	0.230
Starting current		(A)	1.12	1.22	1.46	1.89
FCU dimension	Main unit	Height (mm)	298			298
		Width (mm)	1000			1400
		Depth (mm)	750			750
Total weight	Main unit	(kg)	34			43
Heat exchangere			Finned tube			
Soundproof / Heat-insulation material			Polyethylene foam			
Fan			Centrifugal fan (Sirocco fan)			
Air flow volume	Indoor unit (H/M/L)	(m³/h)	1100 / 990 / 900	1200 / 1050 / 960	1500 / 1350 / 1200	1920 / 1560 / 1340
Sound pressure	Indoor unit (H/M/L)	dB(A)	37 / 33 / 31	38 / 34 / 32	43 / 41 / 38	41 / 37 / 34
Motor			250			350
Static pressure factory set (Max)		(Pa)	100 (200)			
Conecting pipe	Gas side	(mm)	Ø 12.7	Ø 15.88		
	Liquid side	(mm)	Ø 6.35	Ø 9.52		
	Drain pipe	(mm)	25 (Polyvinyl chloride tube)			
Drain pump			Equiped			
Operating Range for SMMS-u	Cooling	(°C)	5 ~ 46 to 52 (*2)			
	Heating	(°C)	-10 ~ 46			

Note (*1) : Rated conditions Cooling: Indoor air temperature 27 ˚DB / 19 ˚WB, Outdoor air temperature 35 ˚DB

Heating: Indoor air temperature 20 ˚DB, Outdoor air temperature 7 ˚DB / 6 ˚WB

(*2) : 46 to 52 °C is also available but temporary operate.

Model name			MMD -	UP0481HP-E / TR	UP0561HP-E / TR	UP0721HP-E / TR	UP0961HP-E / TR
Power supply				1 ph 230V (220-240V) ~ 50 Hz & 1 ph 220V (208-230V) ~ 60 Hz			
Cooling capacity (*1)			(kW)	14.0	16.0	22.4	28.0
Heating capacity (*1)			(kW)	16.0	18.0	25.0	31.5
Running current			(A)	1.81	2.48	2.83	3.77
Power consumption			(kW)	0.300	0.400	0.540	0.790
Starting current			(A)	2.41	3.08	7.80	7.80
FCU dimension	Main unit	Height	(mm)	298		448	
		Width	(mm)	1400		1400	
		Depth	(mm)	750		900	
Total weight	Main unit		(kg)	43		97	
Heat exchangere				Finned tube			
Soundproof / Heat-insulation material				Polyethylene foam			
Fan				Centrifugal fan (Sirocco fan)			
Air flow volume	Indoor unit (H/M/L)		(m^3/h)	2340 / 1980 / 1695	2760 / 2340 / 1920	3800 / 3200 / 2500	4800 / 4200 / 3500
Sound pressure	Indoor unit (H/M/L)		dB(A)	44 / 41 / 38	46 / 44 / 41	44 /40 / 36	46 / 42 / 38
Motor				350		1000	
Static pressure factory set (Max)			(Pa)	100 (200)		150 (250)	
Conecting pipe	Gas side		(mm)	Ø 15.88		Ø 22.23	
	Liquid side		(mm)	Ø 9.52		Ø 12.7	
	Drain pipe		(mm)				
Drain pump				Equiped		Option	
Operating Range	Cooling		(°C)	5 ~ 46 to 52 (*2)			
for SMMS-u	Heating		(°C)	-10 ~ 46			

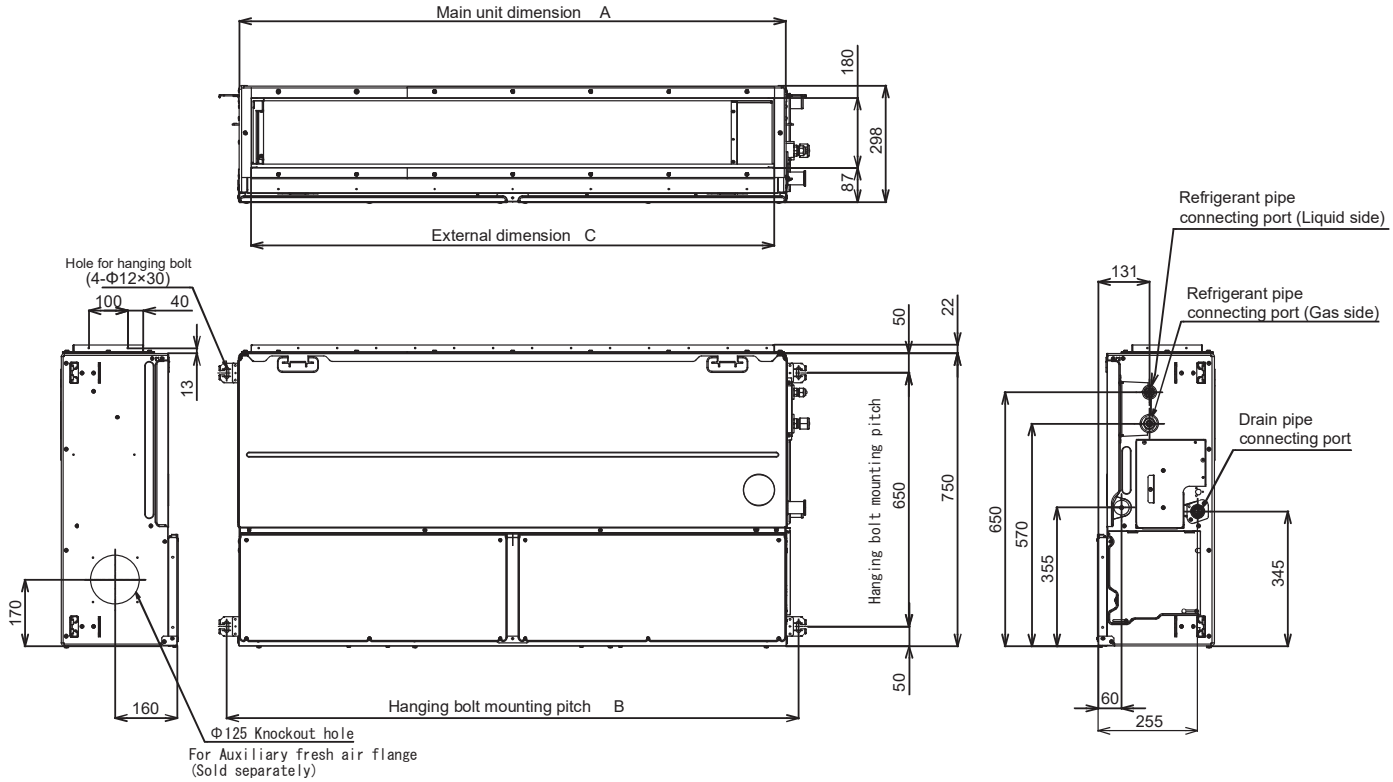
Note (*1) : Rated conditions Cooling: Indoor air temperature 27 ˚DB / 19 ˚WB, Outdoor air temperature 35 ˚DB

Heating: Indoor air temperature 20 ˚DB, Outdoor air temperature 7 ˚DB / 6 ˚WB

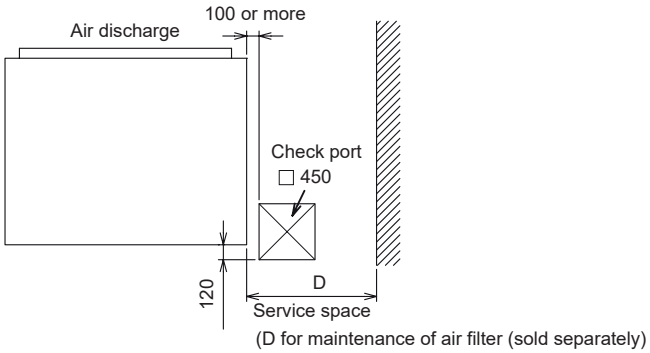
(*2) : 46 to 52 °C is also available but temporary operate.

2. Dimensions

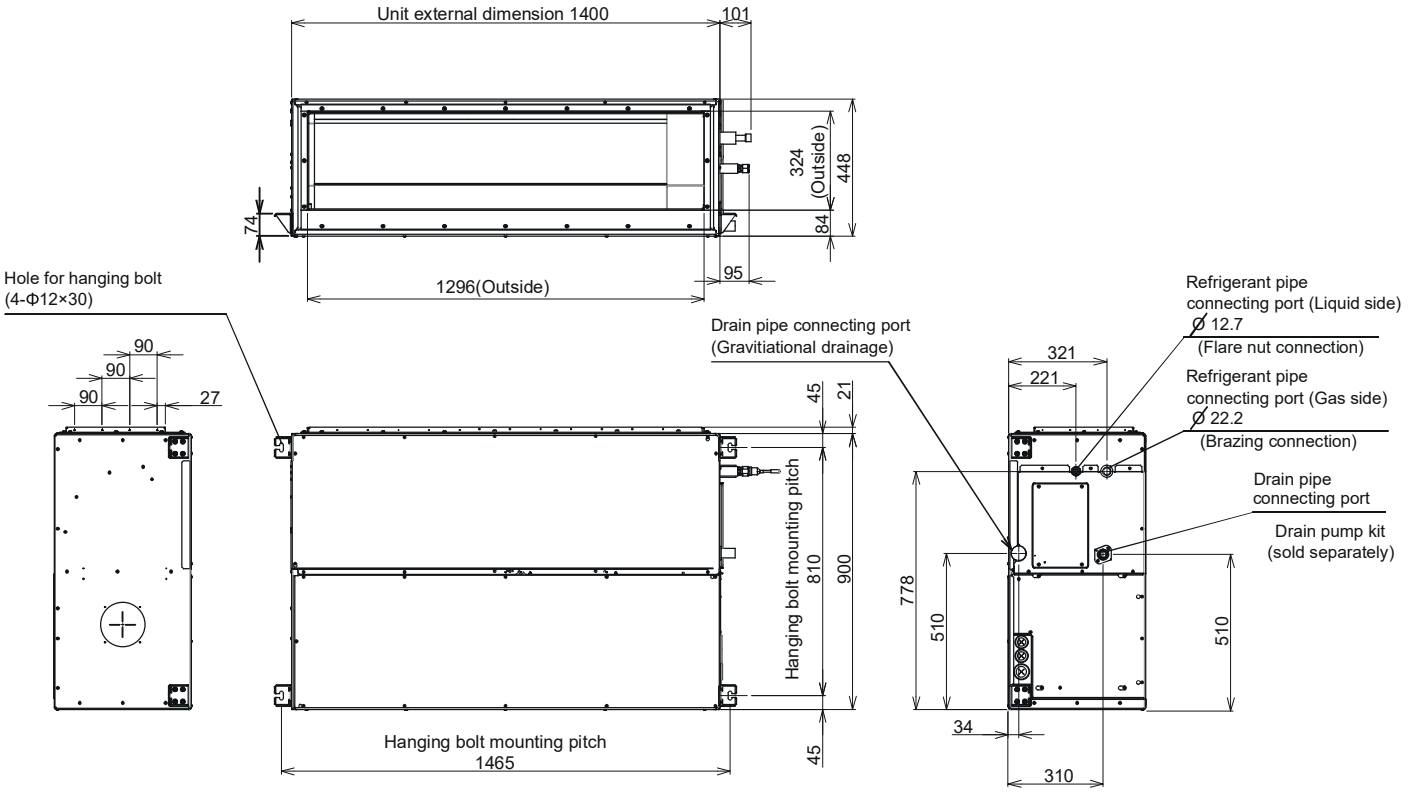
MMD-UP__*1HP-E / TR (*018 / 024 / 027 / 036 / 048 / 056)



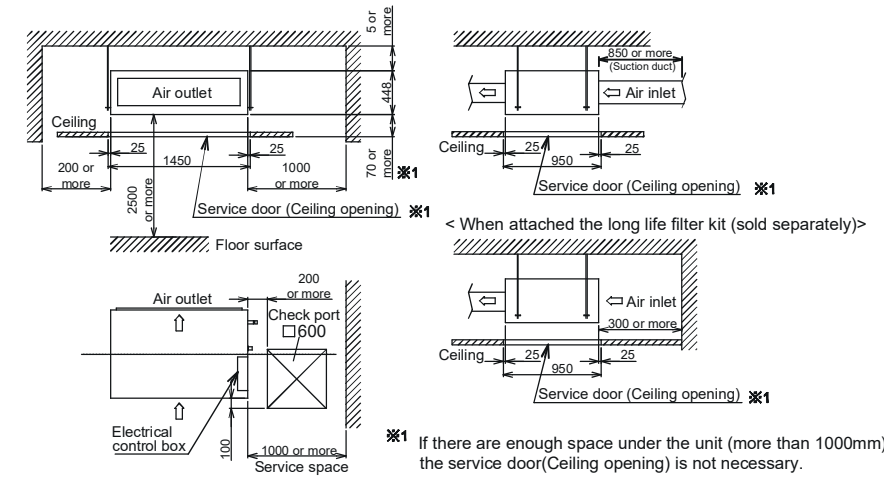
Unit dimension	A	B	C	D
UP018 ~ 027 type	1000	1065	940	500
UP0 36~ 056 type	1400	1465	1340	700



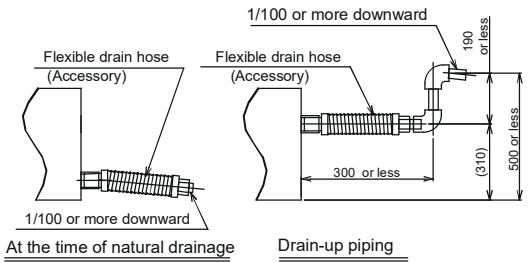
MMD-UP__*1HP-E / TR (*072 / 096)



Space required for installation and servicing



※1 If there are enough space under the unit (more than 1000mm) the service door(Ceiling opening) is not necessary.



At the time of natural drainage

Drain-up piping

When attached the drain pump kit (sold separately)

Unit : mm

For duct design MMD-UP0181 / 0241 / 0271

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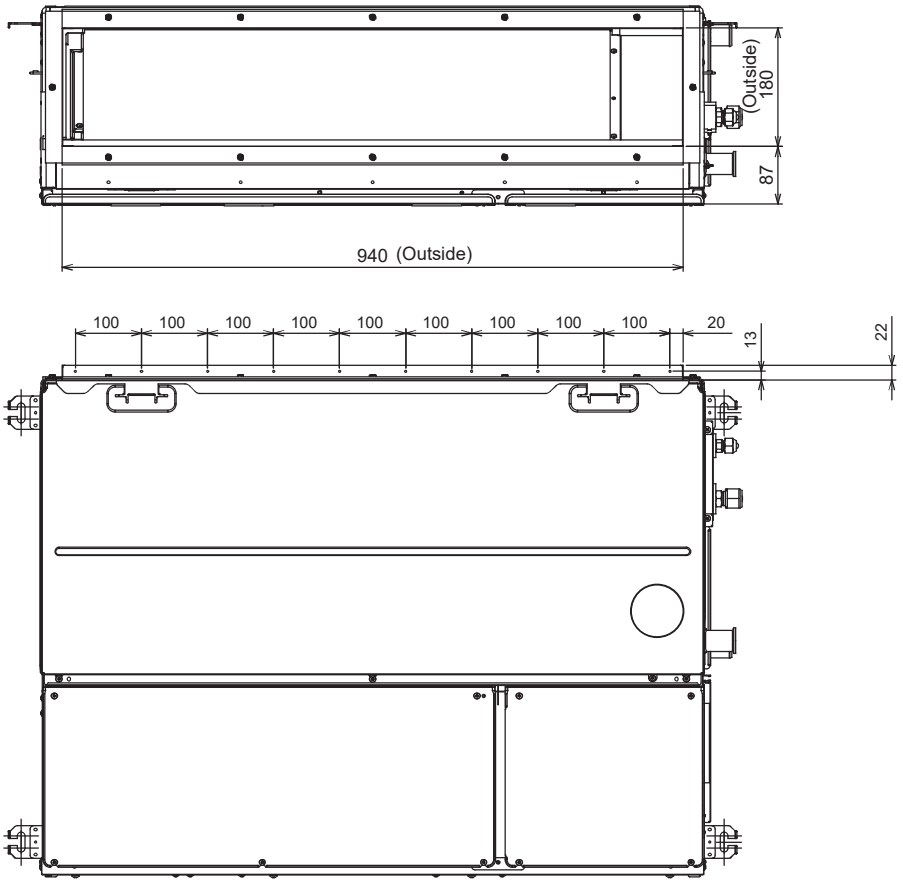

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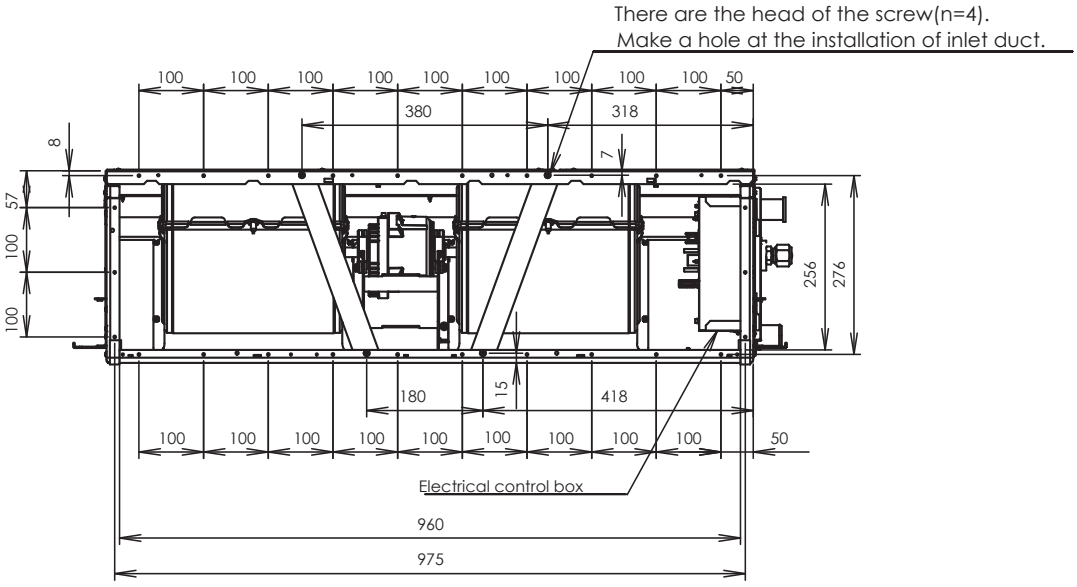

For duct design MMD-UP0361 / 0481 / 0561

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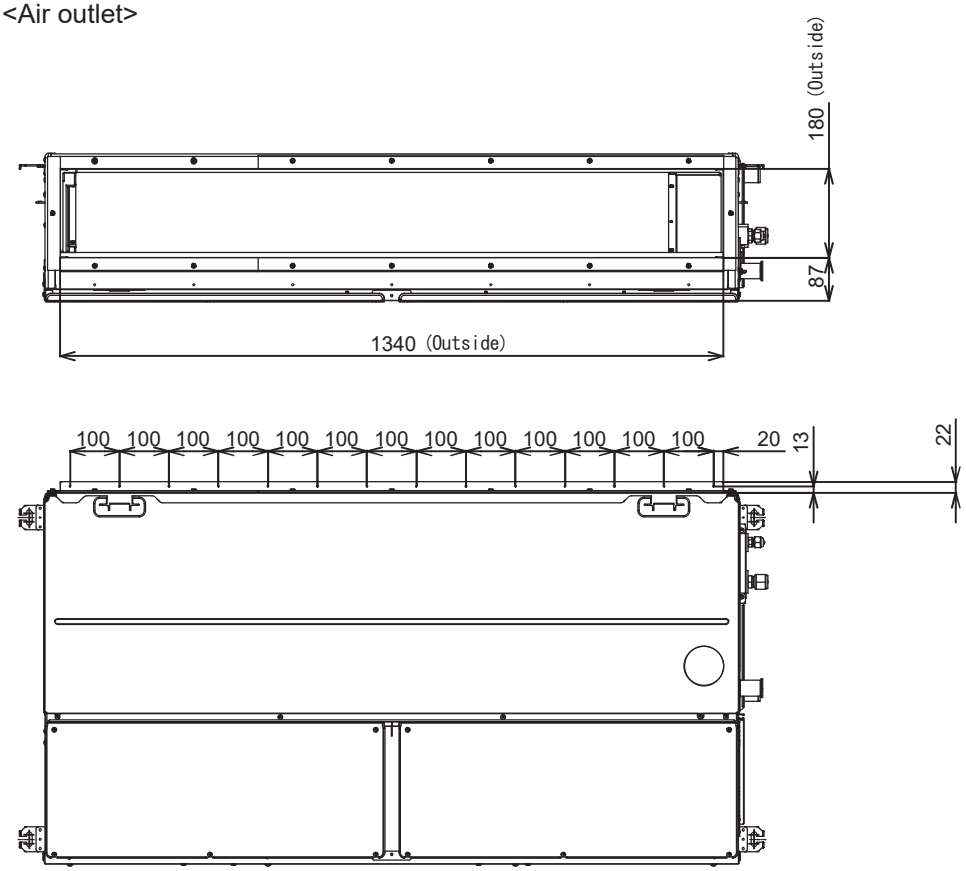

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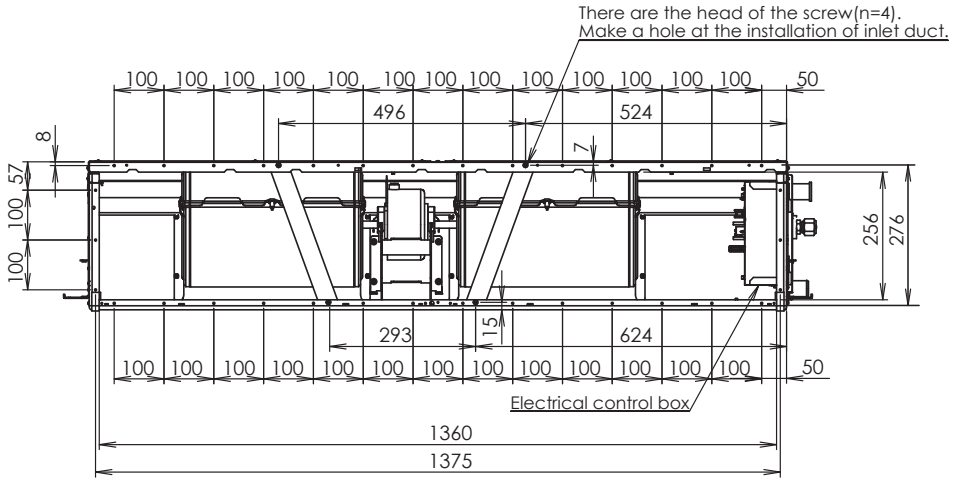

For duct design MMD-UP0721/ 0961

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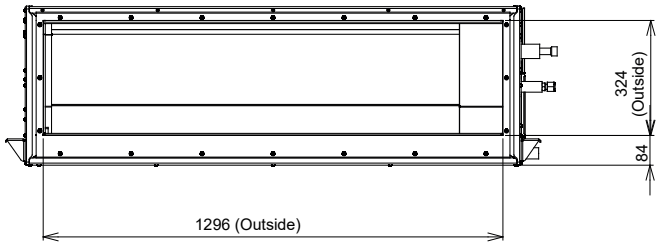
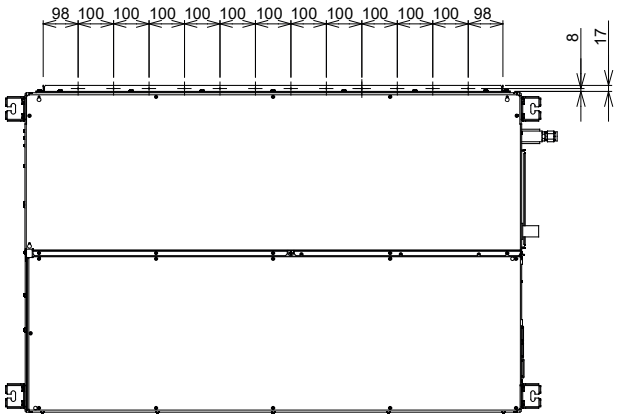
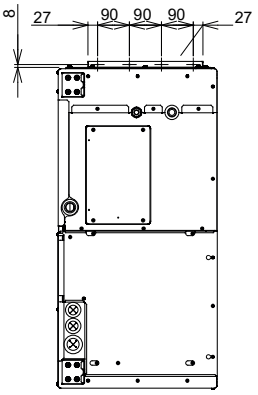
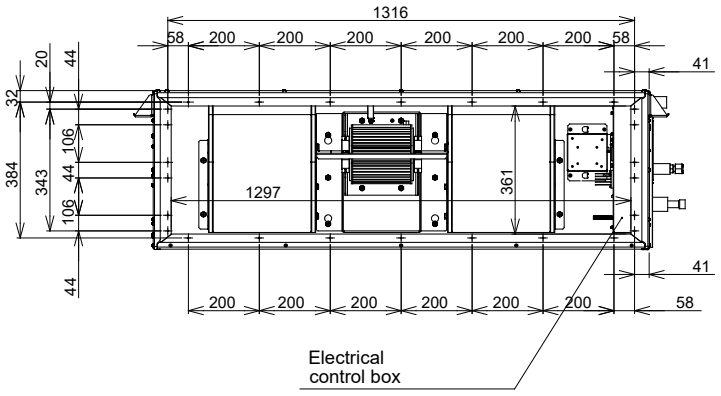




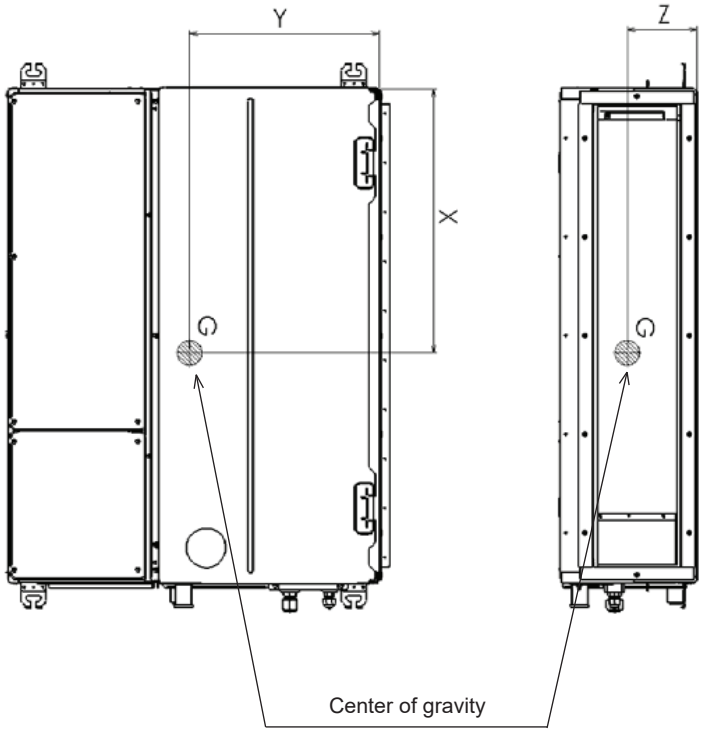


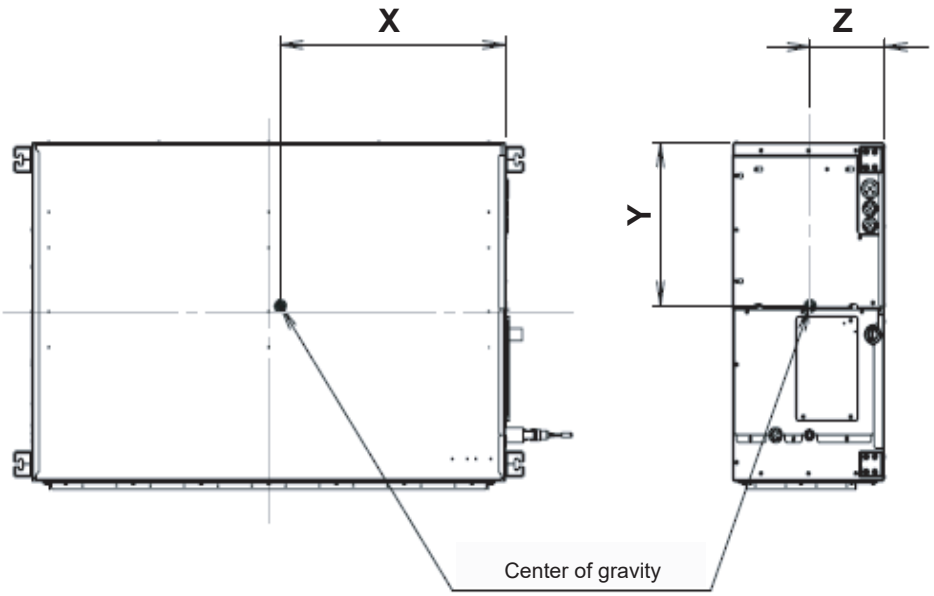
<Air inlet>



3. Center of gravity

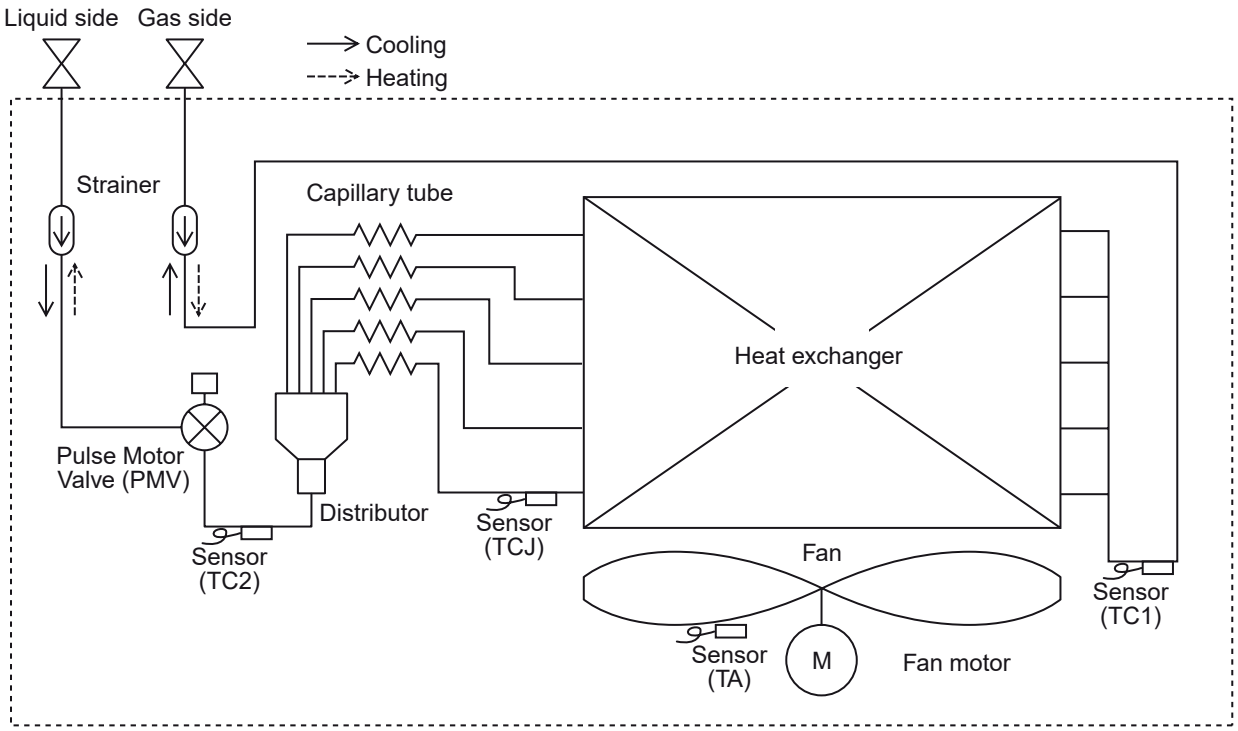
Model name	X (mm)	Y (mm)	Z (mm)	Total weight (kg)
MMD-UP0181HP-E / TR	535	387	142	34
MMD-UP0241HP-E / TR				
MMD-UP0271HP-E / TR				
MMD-UP0361HP-E / TR	744	387	142	43
MMD-UP0481HP-E / TR				
MMD-UP0561HP-E / TR				
MMD-UP0721HP-E / TR	29.3	655	435	97
MMD-UP0961HP-E / TR				





4. Piping diagram

MMD-UP__*1HP-E / TR (*018 / 024 / 027 / 036 / 048 / 056 / 072 / 096)

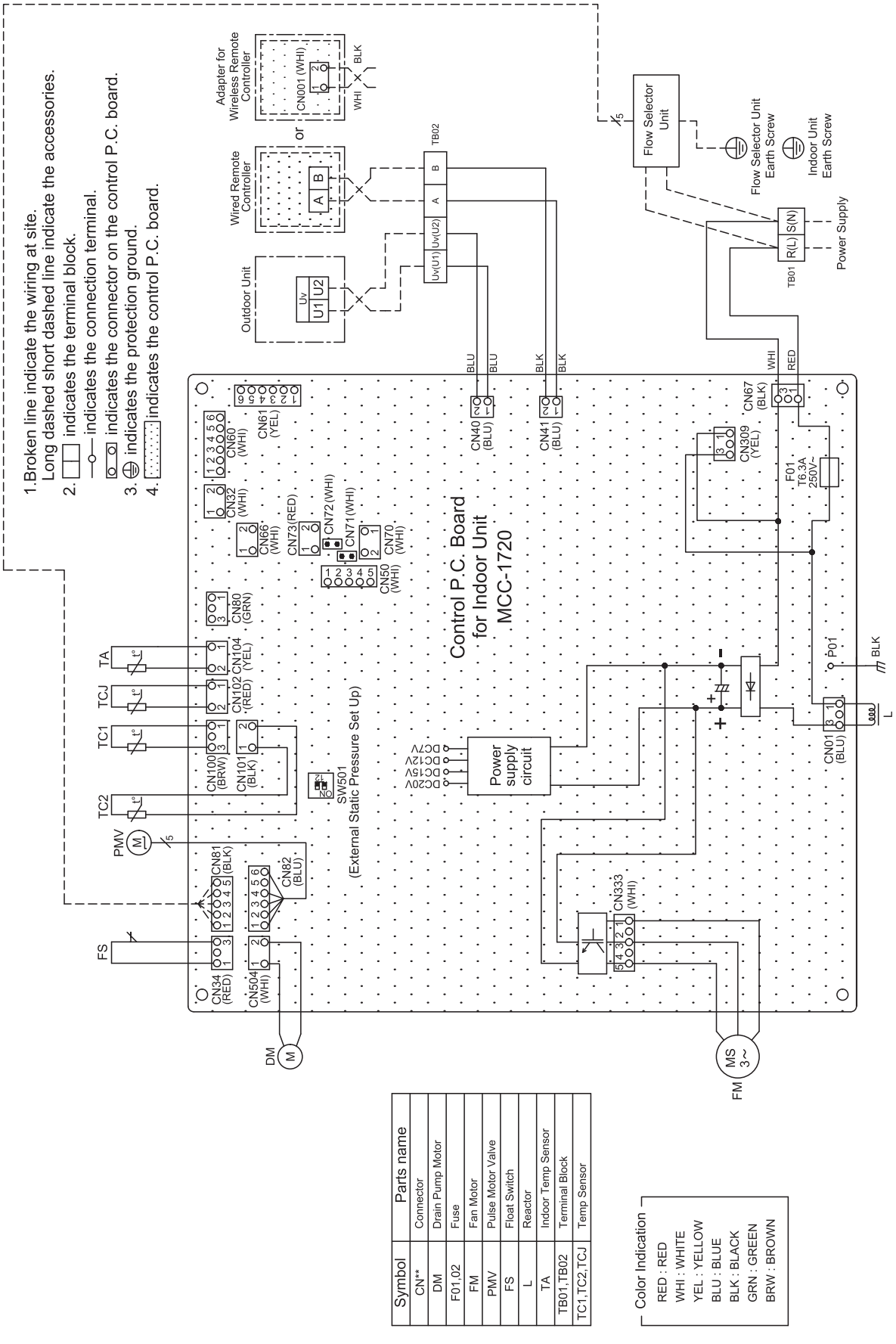


Explanation of functional parts in indoor unit

Functional part name		Functional outline
Pulse Motor Valve	PMV	(Connector CN082 (6P): Blue) 1) Controls super heat in cooling operation 2) Controls sub cool in heating operation 3) Recovers refrigerant oil in cooling operation 4) Recovers refrigerant oil in heating operation
Temp. sensor	1. TA	(Connector CN104 (2P): Yellow) 1) Detects indoor suction temperature
	2. TC1	(Connector CN100 (3P): Brown) 1) Controls PMV super heat in cooling operation
	3. TC2	(Connector CN101 (2P): Black) 1) Controls PMV sub cool in heating operation
	4. TCJ	(Connector CN102 (2P): Red) 1) Controls PMV super heat in cooling operation

5. Wiring diagram

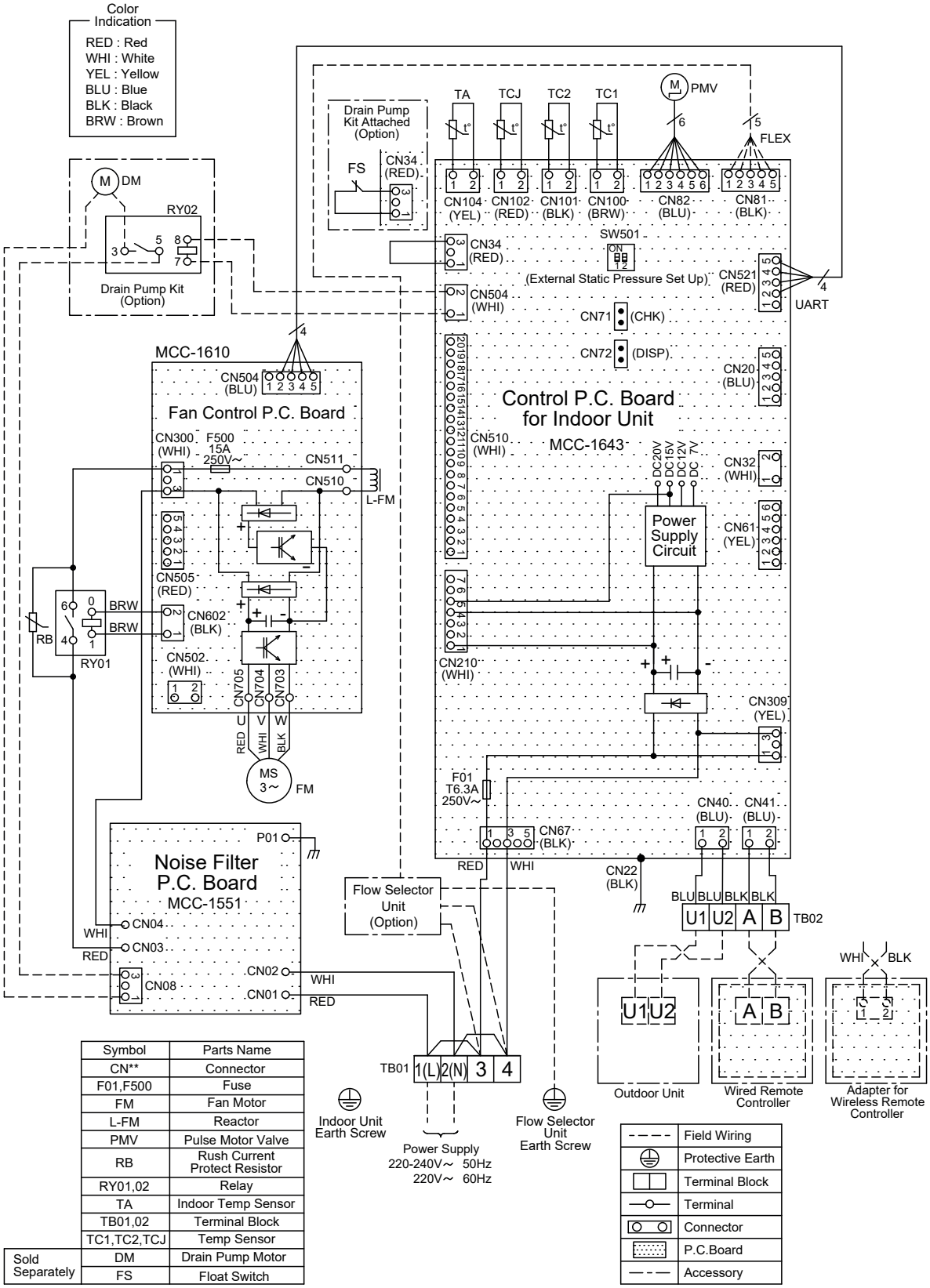
MMD-UP__*1HP-E / TR (*018 / 024 / 027 / 036 / 048 / 056)



Symbol	Parts name
CN**	Connector
DM	Drain Pump Motor
F01,02	Fuse
FM	Fan Motor
PMV	Pulse Motor Valve
FS	Float Switch
L	Reactor
TA	Indoor Temp Sensor
TB01,TB02	Terminal Block
TC1,TC2,TCJ	Temp Sensor

Color Indication
RED : RED
WHI : WHITE
YEL : YELLOW
BLU : BLUE
BLK : BLACK
GRN : GREEN
BRW : BROWN

MMD-UP__*1HP-E / TR (*072 / 096)



Symbol	Parts Name
CN**	Connector
F01,F500	Fuse
FM	Fan Motor
L-FM	Reactor
PMV	Pulse Motor Valve
RB	Rush Current Protect Resistor
RY01,02	Relay
TA	Indoor Temp Sensor
TB01,02	Terminal Block
TC1,TC2,TCJ	Temp Sensor
Sold Separately	DM Drain Pump Motor
	FS Float Switch

	Field Wiring
	Protective Earth
	Terminal Block
	Terminal
	Connector
	P.C.Board
	Accessory

6. Electrical characteristics

50 Hz

Type	Model	Normal Voltage	Voltage Range		Fan Motor		Power Supply	
		(V-Ph-Hz)	Min.	Max.	kW	FLA	MCA	MOCP
Concealed Duct High Static Pressure Type	MMD-UP0181HP-E / TR	220-1-50	198	242	0.250	1.02	1.28	15
	MMD-UP0241HP-E / TR	220-1-50	198	242	0.250	1.33	1.66	15
	MMD-UP0271HP-E / TR	220-1-50	198	242	0.250	1.33	1.96	15
	MMD-UP0361HP-E / TR	220-1-50	198	242	0.350	2.22	2.78	15
	MMD-UP0481HP-E / TR	220-1-50	198	242	0.350	2.40	2.99	15
	MMD-UP0561HP-E / TR	220-1-50	198	242	0.350	2.57	3.22	15
	MMD-UP0721HP-E / TR	220-1-50	198	242	1.000	4.30	5.40	15
	MMD-UP0961HP-E / TR	220-1-50	198	242	1.000	5.50	6.90	15

MCA : Minimum Circuit Amps FLA : Full Load Amps
MOCP : Maximum Overcurrent Protection (Amps) kW : Fan Motor Rated Output (kW)

60 Hz

Type	Model	Normal Voltage	Voltage Range		Fan Motor		Power Supply	
		(V-Ph-Hz)	Min.	Max.	kW	FLA	MCA	MOCP
Concealed Duct High Static Pressure Type	MMD-UP0181HP-E / TR	220-1-60	198	242	0.250	1.43	1.79	15
	MMD-UP0241HP-E / TR	220-1-60	198	242	0.250	1.55	1.94	15
	MMD-UP0271HP-E / TR	220-1-60	198	242	0.250	1.86	2.33	15
	MMD-UP0361HP-E / TR	220-1-60	198	242	0.350	2.02	2.53	15
	MMD-UP0481HP-E / TR	220-1-60	198	242	0.350	2.57	3.21	15
	MMD-UP0561HP-E / TR	220-1-60	198	242	0.350	3.25	4.06	15
	MMD-UP0721HP-E / TR	220-1-60	198	242	0.800	4.90	6.13	15
	MMD-UP0961HP-E / TR	220-1-60	198	242	0.800	6.74	8.43	15

MCA : Minimum Circuit Amps FLA : Full Load Amps
MOCP : Maximum Overcurrent Protection (Amps) kW : Fan Motor Rated Output (kW)

• Wiring size

Must be independent from the outdoor unit power supply.

Item / Model	Power supply wiring	
	Wire size	
All models of indoor units	2.0 mm^2 (AWG#14) Max. 20 m	3.5 mm^2 (AWG#12) Max. 50 m

NOTE:

The above connecting lengths stated in the table, indicate the length from the isolator to the outdoor unit. When the power supply of the indoor units are connected in parallel, it is assumed that no more than a 2% voltage drop will occur. If the connecting length is to exceed the stated lengths, select a suitable wire in accordance with the local wiring standards.

7. Sensible capacity table

High static duct type (MMD-UP___1HP-E / TR)

unit size	outdoor air temp. ˚CDB	Indoor air temp. 14 ˚CWB 20 ˚CDB		16 ˚CWB 23 ˚CDB		18 ˚CWB 26 ˚CDB		19 ˚CWB 27 ˚CDB		20 ˚CWB 28 ˚CDB		22 ˚CWB 30 ˚CDB		24 ˚CWB 32 ˚CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
018	10	4.64	4.45	4.99	4.70	5.44	5.01	5.60	5.04	5.70	5.06	6.06	4.99	6.31	4.81
	12	4.64	4.45	4.99	4.70	5.44	5.01	5.60	5.04	5.70	5.06	6.06	4.99	6.31	4.81
	14	4.64	4.45	4.99	4.70	5.44	5.01	5.60	5.04	5.70	5.06	6.06	4.99	6.31	4.81
	16	4.64	4.45	4.99	4.70	5.44	5.01	5.60	5.04	5.70	5.06	6.06	4.99	6.31	4.81
	18	4.64	4.45	4.99	4.70	5.44	5.01	5.60	5.04	5.70	5.06	6.06	4.99	6.31	4.81
	20	4.64	4.45	4.99	4.70	5.44	5.01	5.60	5.04	5.70	5.06	6.06	4.99	6.31	4.81
	21	4.64	4.45	4.99	4.70	5.44	5.01	5.60	5.04	5.70	5.06	6.06	4.99	6.31	4.81
	23	4.64	4.45	4.99	4.70	5.44	5.01	5.60	5.04	5.70	5.06	6.06	4.99	6.31	4.81
	25	4.64	4.45	4.99	4.70	5.44	5.01	5.60	5.04	5.70	5.06	6.06	4.99	6.31	4.81
	27	4.64	4.45	4.99	4.70	5.44	5.01	5.60	5.04	5.70	5.06	6.06	4.99	6.31	4.81
	29	4.64	4.45	4.99	4.70	5.44	5.01	5.60	5.04	5.70	5.06	6.06	4.99	6.31	4.81
	31	4.64	4.45	4.99	4.70	5.44	5.01	5.60	5.04	5.70	5.06	6.06	4.99	6.31	4.81
	33	4.64	4.45	4.99	4.70	5.44	5.01	5.60	5.04	5.70	5.06	6.06	4.99	6.31	4.81
	35	4.64	4.45	4.99	4.70	5.44	5.01	5.60	5.04	5.70	5.06	6.06	4.99	6.31	4.81
	37	4.51	4.32	4.85	4.56	5.28	4.86	5.44	4.89	5.53	4.91	5.88	4.85	6.13	4.67
	39	4.40	4.22	4.73	4.46	5.16	4.75	5.31	4.78	5.40	4.80	5.74	4.73	5.98	4.56
024	10	5.89	4.96	6.32	5.22	6.90	5.58	7.10	5.61	7.22	5.62	7.68	5.55	7.99	5.34
	12	5.89	4.96	6.32	5.22	6.90	5.58	7.10	5.61	7.22	5.62	7.68	5.55	7.99	5.34
	14	5.89	4.96	6.32	5.22	6.90	5.58	7.10	5.61	7.22	5.62	7.68	5.55	7.99	5.34
	16	5.89	4.96	6.32	5.22	6.90	5.58	7.10	5.61	7.22	5.62	7.68	5.55	7.99	5.34
	18	5.89	4.96	6.32	5.22	6.90	5.58	7.10	5.61	7.22	5.62	7.68	5.55	7.99	5.34
	20	5.89	4.96	6.32	5.22	6.90	5.58	7.10	5.61	7.22	5.62	7.68	5.55	7.99	5.34
	21	5.89	4.96	6.32	5.22	6.90	5.58	7.10	5.61	7.22	5.62	7.68	5.55	7.99	5.34
	23	5.89	4.96	6.32	5.22	6.90	5.58	7.10	5.61	7.22	5.62	7.68	5.55	7.99	5.34
	25	5.89	4.96	6.32	5.22	6.90	5.58	7.10	5.61	7.22	5.62	7.68	5.55	7.99	5.34
	27	5.89	4.96	6.32	5.22	6.90	5.58	7.10	5.61	7.22	5.62	7.68	5.55	7.99	5.34
	29	5.89	4.96	6.32	5.22	6.90	5.58	7.10	5.61	7.22	5.62	7.68	5.55	7.99	5.34
	31	5.89	4.96	6.32	5.22	6.90	5.58	7.10	5.61	7.22	5.62	7.68	5.55	7.99	5.34
	33	5.89	4.96	6.32	5.22	6.90	5.58	7.10	5.61	7.22	5.62	7.68	5.55	7.99	5.34
	35	5.89	4.96	6.32	5.22	6.90	5.58	7.10	5.61	7.22	5.62	7.68	5.55	7.99	5.34
	37	5.72	4.82	6.14	5.07	6.70	5.42	6.89	5.45	7.01	5.46	7.46	5.39	7.76	5.19
	39	5.58	4.70	5.99	4.95	6.54	5.29	6.73	5.32	6.84	5.33	7.28	5.26	7.57	5.06
027	10	6.63	6.36	7.12	6.70	7.77	7.16	8.00	7.20	8.14	7.22	8.65	7.13	9.01	6.86
	12	6.63	6.36	7.12	6.70	7.77	7.16	8.00	7.20	8.14	7.22	8.65	7.13	9.01	6.86
	14	6.63	6.36	7.12	6.70	7.77	7.16	8.00	7.20	8.14	7.22	8.65	7.13	9.01	6.86
	16	6.63	6.36	7.12	6.70	7.77	7.16	8.00	7.20	8.14	7.22	8.65	7.13	9.01	6.86
	18	6.63	6.36	7.12	6.70	7.77	7.16	8.00	7.20	8.14	7.22	8.65	7.13	9.01	6.86
	20	6.63	6.36	7.12	6.70	7.77	7.16	8.00	7.20	8.14	7.22	8.65	7.13	9.01	6.86
	21	6.63	6.36	7.12	6.70	7.77	7.16	8.00	7.20	8.14	7.22	8.65	7.13	9.01	6.86
	23	6.63	6.36	7.12	6.70	7.77	7.16	8.00	7.20	8.14	7.22	8.65	7.13	9.01	6.86
	25	6.63	6.36	7.12	6.70	7.77	7.16	8.00	7.20	8.14	7.22	8.65	7.13	9.01	6.86
	27	6.63	6.36	7.12	6.70	7.77	7.16	8.00	7.20	8.14	7.22	8.65	7.13	9.01	6.86
	29	6.63	6.36	7.12	6.70	7.77	7.16	8.00	7.20	8.14	7.22	8.65	7.13	9.01	6.86
	31	6.63	6.36	7.12	6.70	7.77	7.16	8.00	7.20	8.14	7.22	8.65	7.13	9.01	6.86
	33	6.63	6.36	7.12	6.70	7.77	7.16	8.00	7.20	8.14	7.22	8.65	7.13	9.01	6.86
	35	6.63	6.36	7.12	6.70	7.77	7.16	8.00	7.20	8.14	7.22	8.65	7.13	9.01	6.86
	37	6.44	6.18	6.91	6.51	7.54	6.95	7.77	6.99	7.90	7.01	8.40	6.92	8.75	6.66
	39	6.29	6.03	6.75	6.35	7.37	6.79	7.58	6.83	7.72	6.84	8.20	6.76	8.54	6.50
036	10	9.28	7.51	9.97	7.92	10.88	8.46	11.20	8.51	11.39	8.53	12.11	8.42	12.61	8.11
	12	9.28	7.51	9.97	7.92	10.88	8.46	11.20	8.51	11.39	8.53	12.11	8.42	12.61	8.11
	14	9.28	7.51	9.97	7.92	10.88	8.46	11.20	8.51	11.39	8.53	12.11	8.42	12.61	8.11
	16	9.28	7.51	9.97	7.92	10.88	8.46	11.20	8.51	11.39	8.53	12.11	8.42	12.61	8.11
	18	9.28	7.51	9.97	7.92	10.88	8.46	11.20	8.51	11.39	8.53	12.11	8.42	12.61	8.11
	20	9.28	7.51	9.97	7.92	10.88	8.46	11.20	8.51	11.39	8.53	12.11	8.42	12.61	8.11
	21	9.28	7.51	9.97	7.92	10.88	8.46	11.20	8.51	11.39	8.53	12.11	8.42	12.61	8.11
	23	9.28	7.51	9.97	7.92	10.88	8.46	11.20	8.51	11.39	8.53	12.11	8.42	12.61	8.11
	25	9.28	7.51	9.97	7.92	10.88	8.46	11.20	8.51	11.39	8.53	12.11	8.42	12.61	8.11
	27	9.28	7.51	9.97	7.92	10.88	8.46	11.20	8.51	11.39	8.53	12.11	8.42	12.61	8.11
	29	9.28	7.51	9.97	7.92	10.88	8.46	11.20	8.51	11.39	8.53	12.11	8.42	12.61	8.11
	31	9.28	7.51	9.97	7.92	10.88	8.46	11.20	8.51	11.39	8.53	12.11	8.42	12.61	8.11
	33	9.28	7.51	9.97	7.92	10.88	8.46	11.20	8.51	11.39	8.53	12.11	8.42	12.61	8.11
	35	9.28	7.51	9.97	7.92	10.88	8.46	11.20	8.51	11.39	8.53	12.11	8.42	12.61	8.11
	37	9.01	7.29	9.68	7.69	10.56	8.21	10.88	8.26	11.06	8.28	11.76	8.18	12.24	7.87
	39	8.80	7.12	9.45	7.51	10.31	8.02	10.62	8.07	10.80	8.09	11.48	7.98	11.95	7.69

TC : Total capacity [kW] SHC : Sensible capacity [kW]

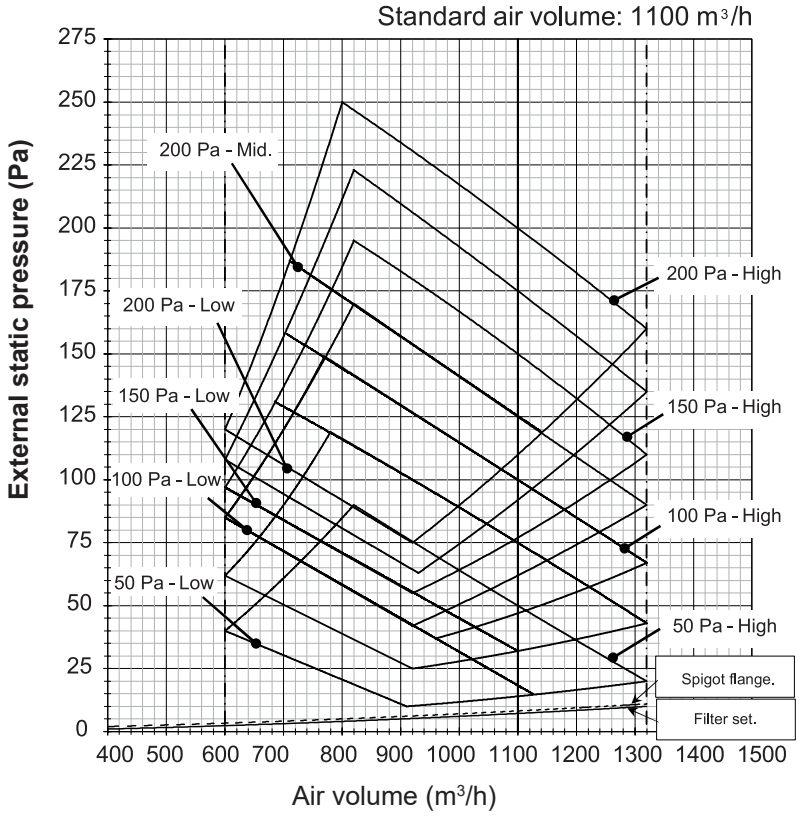
High static duct type (MMD-UP___1HP-E / TR)

unit size	outdoor air temp.	Indoor air temp.													
		14 ˚CWB		16 ˚CWB		18 ˚CWB		19 ˚CWB		20 ˚CWB		22 ˚CWB		24 ˚CWB	
		20 ˚CDB		23 ˚CDB		26 ˚CDB		27 ˚CDB		28 ˚CDB		30 ˚CDB		32 ˚CDB	
	˚CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
048	10	11.61	9.65	12.47	10.17	13.61	10.87	14.00	10.92	14.24	10.95	15.14	10.81	15.76	10.40
	12	11.61	9.65	12.47	10.17	13.61	10.87	14.00	10.92	14.24	10.95	15.14	10.81	15.76	10.40
	14	11.61	9.65	12.47	10.17	13.61	10.87	14.00	10.92	14.24	10.95	15.14	10.81	15.76	10.40
	16	11.61	9.65	12.47	10.17	13.61	10.87	14.00	10.92	14.24	10.95	15.14	10.81	15.76	10.40
	18	11.61	9.65	12.47	10.17	13.61	10.87	14.00	10.92	14.24	10.95	15.14	10.81	15.76	10.40
	20	11.61	9.65	12.47	10.17	13.61	10.87	14.00	10.92	14.24	10.95	15.14	10.81	15.76	10.40
	21	11.61	9.65	12.47	10.17	13.61	10.87	14.00	10.92	14.24	10.95	15.14	10.81	15.76	10.40
	23	11.61	9.65	12.47	10.17	13.61	10.87	14.00	10.92	14.24	10.95	15.14	10.81	15.76	10.40
	25	11.61	9.65	12.47	10.17	13.61	10.87	14.00	10.92	14.24	10.95	15.14	10.81	15.76	10.40
	27	11.61	9.65	12.47	10.17	13.61	10.87	14.00	10.92	14.24	10.95	15.14	10.81	15.76	10.40
	29	11.61	9.65	12.47	10.17	13.61	10.87	14.00	10.92	14.24	10.95	15.14	10.81	15.76	10.40
	31	11.61	9.65	12.47	10.17	13.61	10.87	14.00	10.92	14.24	10.95	15.14	10.81	15.76	10.40
	33	11.61	9.65	12.47	10.17	13.61	10.87	14.00	10.92	14.24	10.95	15.14	10.81	15.76	10.40
	35	11.61	9.65	12.47	10.17	13.61	10.87	14.00	10.92	14.24	10.95	15.14	10.81	15.76	10.40
	37	11.27	9.37	12.11	9.88	13.22	10.55	13.59	10.60	13.83	10.63	14.70	10.50	15.30	10.10
	39	11.01	9.15	11.82	9.64	12.90	10.30	13.27	10.35	13.50	10.38	14.35	10.25	14.94	9.86
056	10	13.26	11.02	14.25	11.63	15.55	12.42	16.00	12.48	16.27	12.51	17.30	12.35	18.02	11.90
	12	13.26	11.02	14.25	11.63	15.55	12.42	16.00	12.48	16.27	12.51	17.30	12.35	18.02	11.90
	14	13.26	11.02	14.25	11.63	15.55	12.42	16.00	12.48	16.27	12.51	17.30	12.35	18.02	11.90
	16	13.26	11.02	14.25	11.63	15.55	12.42	16.00	12.48	16.27	12.51	17.30	12.35	18.02	11.90
	18	13.26	11.02	14.25	11.63	15.55	12.42	16.00	12.48	16.27	12.51	17.30	12.35	18.02	11.90
	20	13.26	11.02	14.25	11.63	15.55	12.42	16.00	12.48	16.27	12.51	17.30	12.35	18.02	11.90
	21	13.26	11.02	14.25	11.63	15.55	12.42	16.00	12.48	16.27	12.51	17.30	12.35	18.02	11.90
	23	13.26	11.02	14.25	11.63	15.55	12.42	16.00	12.48	16.27	12.51	17.30	12.35	18.02	11.90
	25	13.26	11.02	14.25	11.63	15.55	12.42	16.00	12.48	16.27	12.51	17.30	12.35	18.02	11.90
	27	13.26	11.02	14.25	11.63	15.55	12.42	16.00	12.48	16.27	12.51	17.30	12.35	18.02	11.90
	29	13.26	11.02	14.25	11.63	15.55	12.42	16.00	12.48	16.27	12.51	17.30	12.35	18.02	11.90
	31	13.26	11.02	14.25	11.63	15.55	12.42	16.00	12.48	16.27	12.51	17.30	12.35	18.02	11.90
	33	13.26	11.02	14.25	11.63	15.55	12.42	16.00	12.48	16.27	12.51	17.30	12.35	18.02	11.90
	35	13.26	11.02	14.25	11.63	15.55	12.42	16.00	12.48	16.27	12.51	17.30	12.35	18.02	11.90
	37	12.88	10.70	13.84	11.29	15.10	12.06	15.54	12.12	15.80	12.15	16.80	11.99	17.50	11.55
	39	12.57	10.45	13.51	11.03	14.74	11.77	15.17	11.83	15.42	11.86	16.40	11.71	17.08	11.28
072	10	18.57	16.62	19.95	17.53	21.77	18.73	22.40	18.82	22.78	18.87	24.23	18.64	25.22	17.93
	12	18.57	16.62	19.95	17.53	21.77	18.73	22.40	18.82	22.78	18.87	24.23	18.64	25.22	17.93
	14	18.57	16.62	19.95	17.53	21.77	18.73	22.40	18.82	22.78	18.87	24.23	18.64	25.22	17.93
	16	18.57	16.62	19.95	17.53	21.77	18.73	22.40	18.82	22.78	18.87	24.23	18.64	25.22	17.93
	18	18.57	16.62	19.95	17.53	21.77	18.73	22.40	18.82	22.78	18.87	24.23	18.64	25.22	17.93
	20	18.57	16.62	19.95	17.53	21.77	18.73	22.40	18.82	22.78	18.87	24.23	18.64	25.22	17.93
	21	18.57	16.62	19.95	17.53	21.77	18.73	22.40	18.82	22.78	18.87	24.23	18.64	25.22	17.93
	23	18.57	16.62	19.95	17.53	21.77	18.73	22.40	18.82	22.78	18.87	24.23	18.64	25.22	17.93
	25	18.57	16.62	19.95	17.53	21.77	18.73	22.40	18.82	22.78	18.87	24.23	18.64	25.22	17.93
	27	18.57	16.62	19.95	17.53	21.77	18.73	22.40	18.82	22.78	18.87	24.23	18.64	25.22	17.93
	29	18.57	16.62	19.95	17.53	21.77	18.73	22.40	18.82	22.78	18.87	24.23	18.64	25.22	17.93
	31	18.57	16.62	19.95	17.53	21.77	18.73	22.40	18.82	22.78	18.87	24.23	18.64	25.22	17.93
	33	18.57	16.62	19.95	17.53	21.77	18.73	22.40	18.82	22.78	18.87	24.23	18.64	25.22	17.93
	35	18.57	16.62	19.95	17.53	21.77	18.73	22.40	18.82	22.78	18.87	24.23	18.64	25.22	17.93
	37	18.03	16.14	19.37	17.02	21.14	18.19	21.75	18.27	22.12	18.32	23.53	18.10	24.49	17.41
	39	17.60	15.76	18.91	16.62	20.64	17.76	21.24	17.84	21.60	17.89	22.97	17.67	23.91	17.00
096	10	23.21	20.77	24.93	21.90	27.21	23.40	28.00	23.52	28.48	23.59	30.28	23.28	31.53	22.41
	12	23.21	20.77	24.93	21.90	27.21	23.40	28.00	23.52	28.48	23.59	30.28	23.28	31.53	22.41
	14	23.21	20.77	24.93	21.90	27.21	23.40	28.00	23.52	28.48	23.59	30.28	23.28	31.53	22.41
	16	23.21	20.77	24.93	21.90	27.21	23.40	28.00	23.52	28.48	23.59	30.28	23.28	31.53	22.41
	18	23.21	20.77	24.93	21.90	27.21	23.40	28.00	23.52	28.48	23.59	30.28	23.28	31.53	22.41
	20	23.21	20.77	24.93	21.90	27.21	23.40	28.00	23.52	28.48	23.59	30.28	23.28	31.53	22.41
	21	23.21	20.77	24.93	21.90	27.21	23.40	28.00	23.52	28.48	23.59	30.28	23.28	31.53	22.41
	23	23.21	20.77	24.93	21.90	27.21	23.40	28.00	23.52	28.48	23.59	30.28	23.28	31.53	22.41
	25	23.21	20.77	24.93	21.90	27.21	23.40	28.00	23.52	28.48	23.59	30.28	23.28	31.53	22.41
	27	23.21	20.77	24.93	21.90	27.21	23.40	28.00	23.52	28.48	23.59	30.28	23.28	31.53	22.41
	29	23.21	20.77	24.93	21.90	27.21	23.40	28.00	23.52	28.48	23.59	30.28	23.28	31.53	22.41
	31	23.21	20.77	24.93	21.90	27.21	23.40	28.00	23.52	28.48	23.59	30.28	23.28	31.53	22.41
	33	23.21	20.77	24.93	21.90	27.21	23.40	28.00	23.52	28.48	23.59	30.28	23.28	31.53	22.41
	35	23.21	20.77	24.93	21.90	27.21	23.40	28.00	23.52	28.48	23.59	30.28	23.28	31.53	22.41
	37	22.54	20.17	24.21	21.26	26.42	22.72	27.19	22.84	27.65	22.91	29.40	22.60	30.62	21.76
	39	22.00	19.69	23.63	20.76	25.80	22.18	26.54	22.30	27.00	22.36	28.71	22.07	29.89	21.24

TC : Total capacity [kW] SHC : Sensible capacity [kW]

8. Fan static characteristics

MMD-UP0181HP-E / TR



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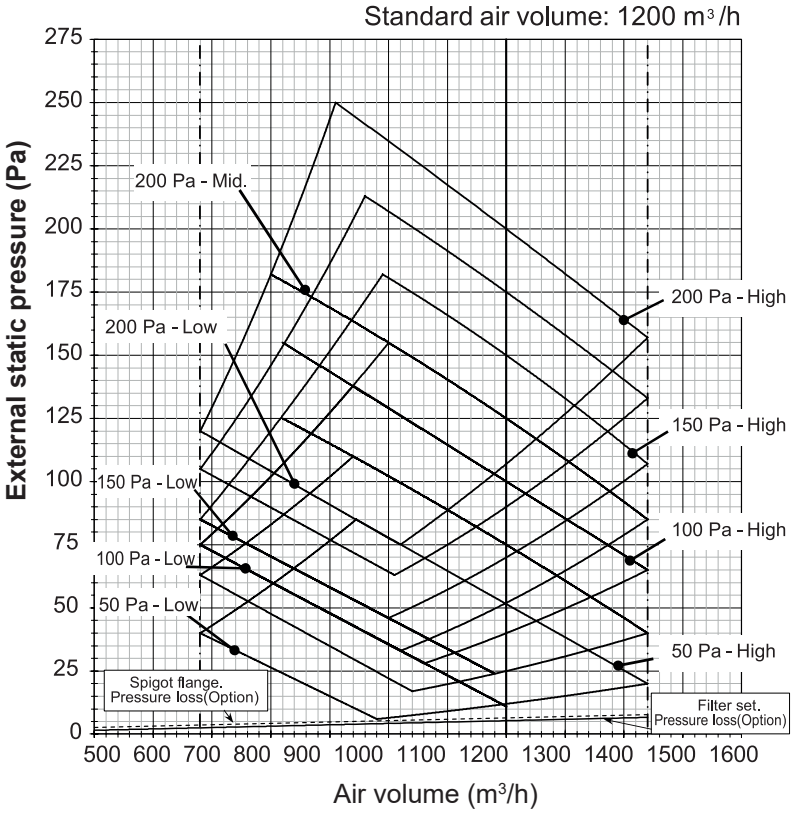

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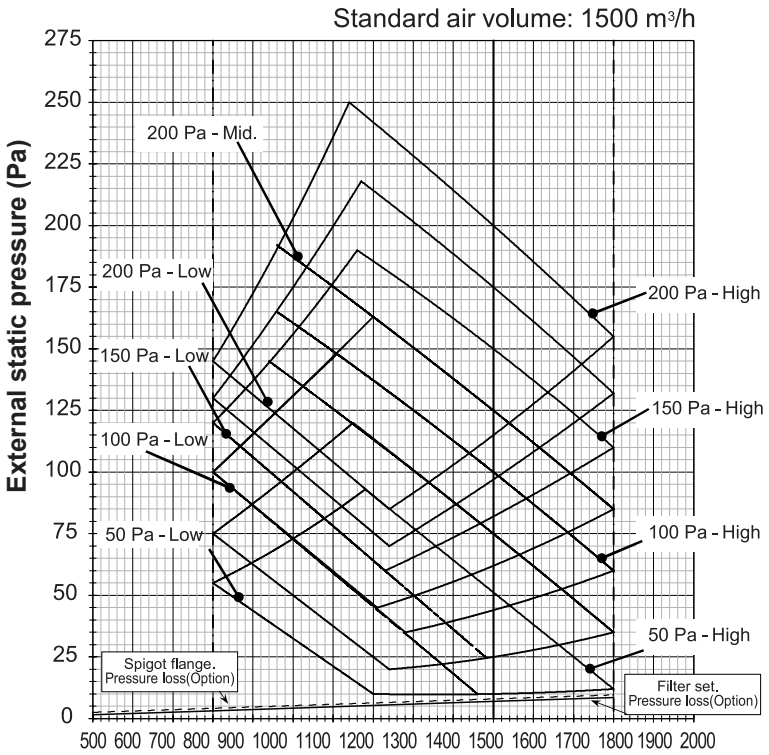

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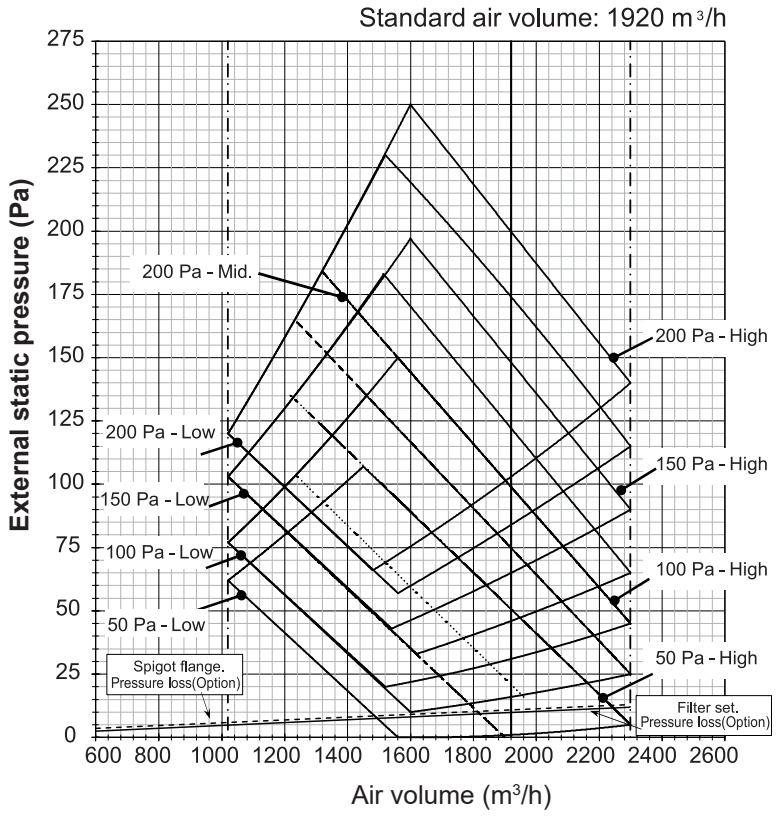

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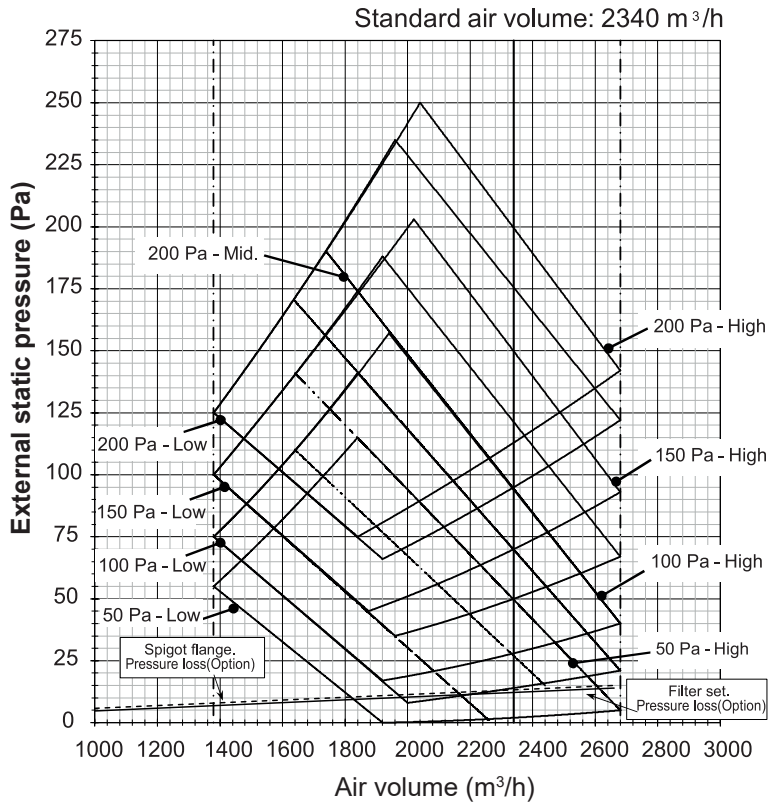

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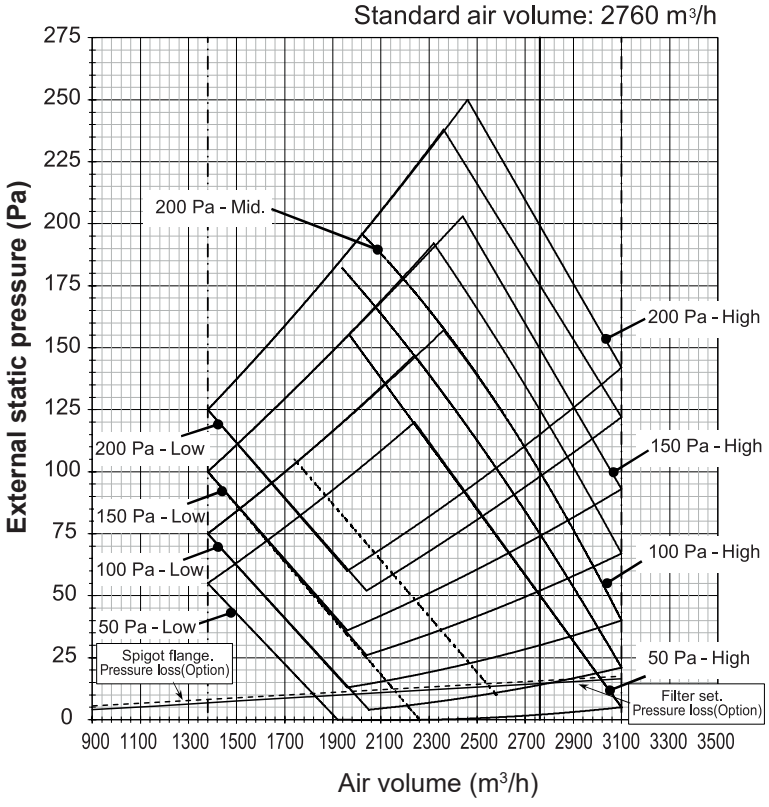

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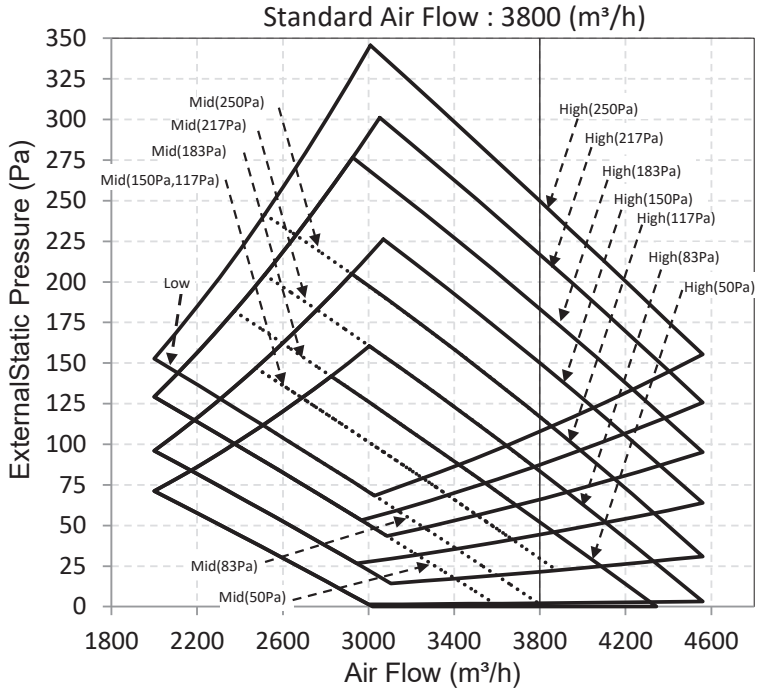

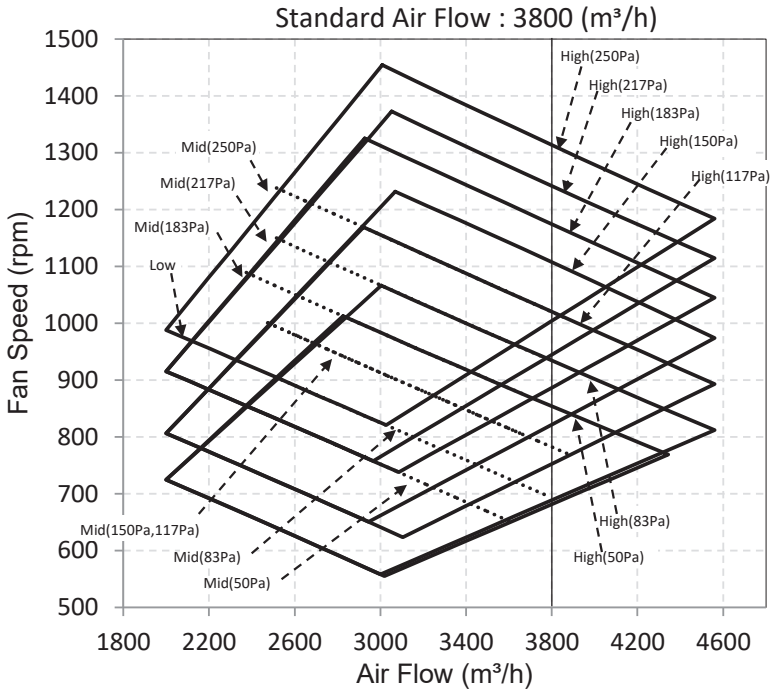

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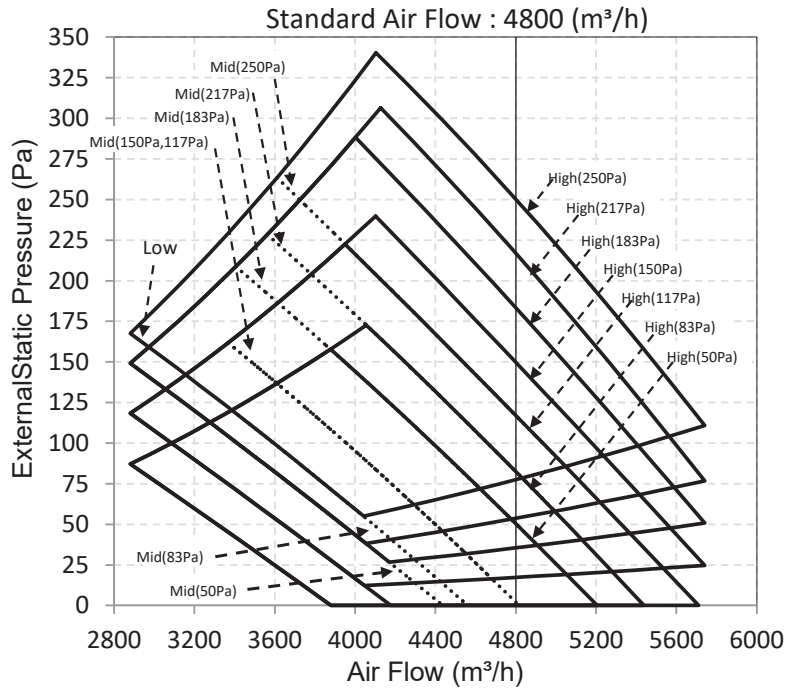
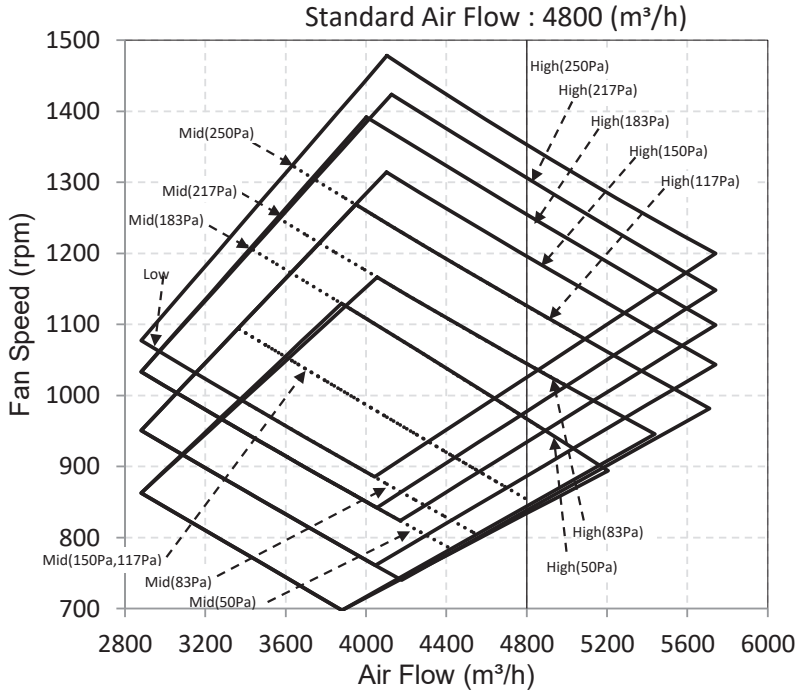
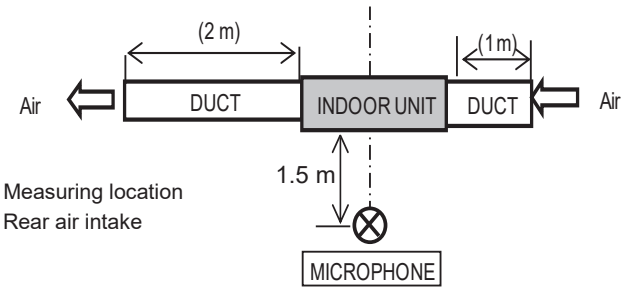




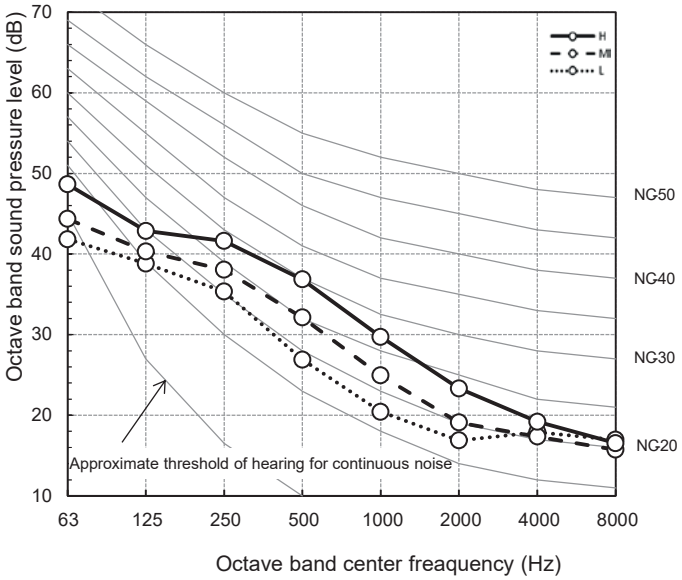
9. Sound characteristics (NC Curve)

MMD-UP0181HP-E / TR



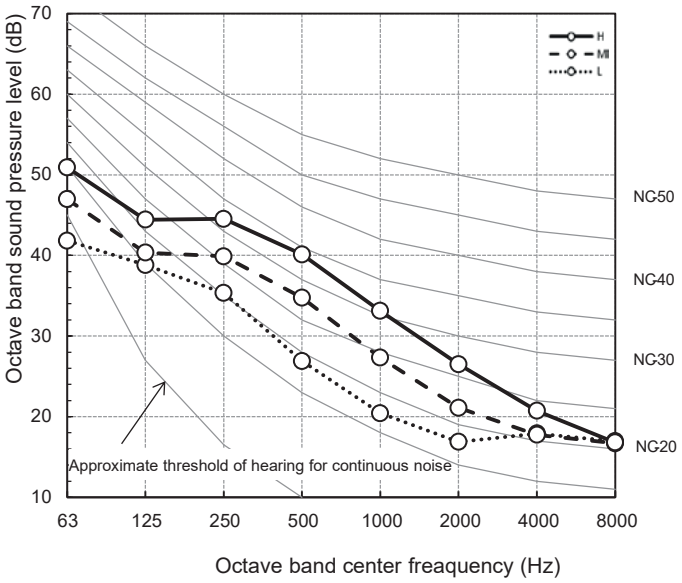
Extarnal static pressure 50Pa

Fan tap	H	M	L
Sound pressure (dBA)	33.0	29.0	26.0



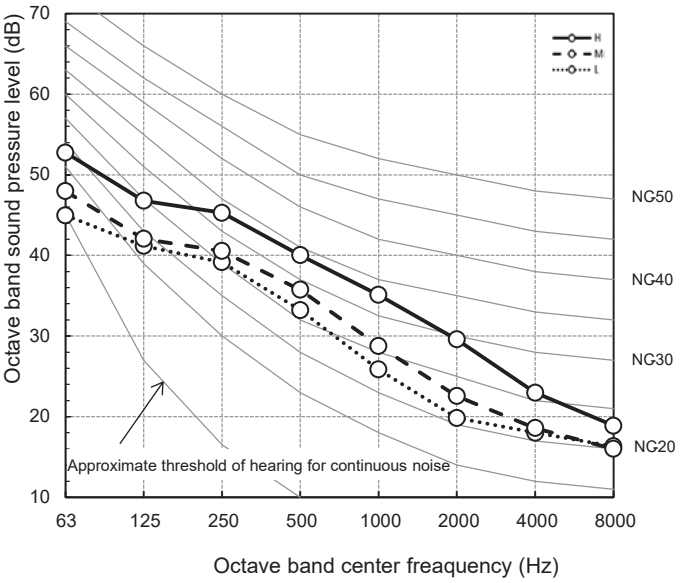
Extarnal static pressure 75Pa

Fan tap	H	M	L
Sound pressure (dBA)	36.0	31.0	26.0



Extarnal static pressure 100Pa

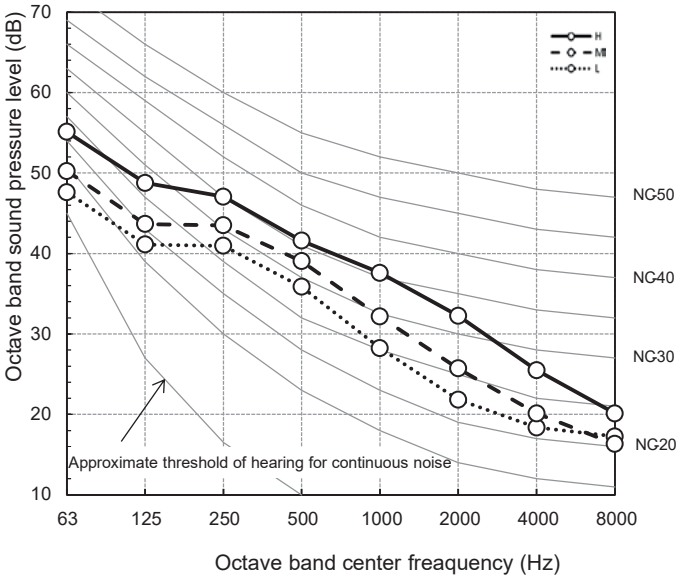
Fan tap	H	M	L
Sound pressure (dBA)	37.0	33.0	31.0



MMD-UP0181HP-E / TR

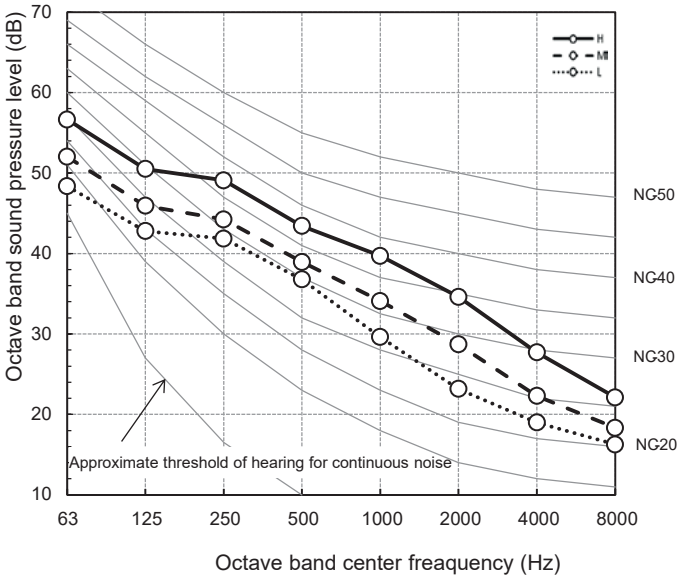
Extarnal static pressure 125Pa

Fan tap	H	M	L
Sound pressure (dBA)	39.0	35.0	32.0



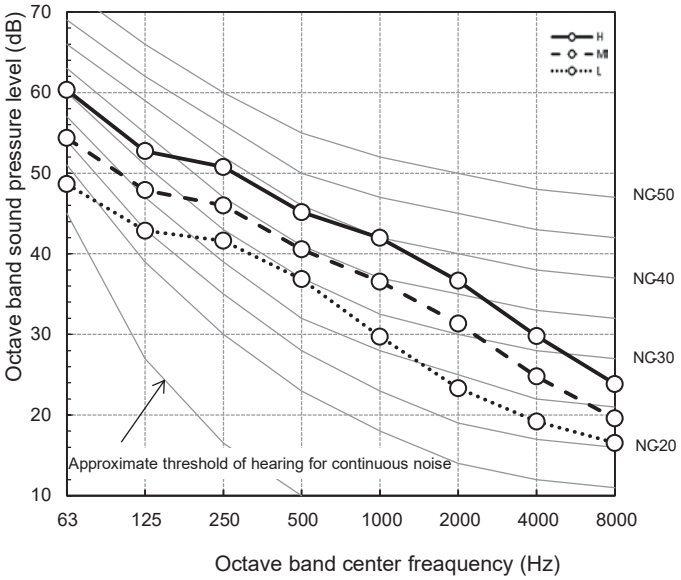
Extarnal static pressure 150Pa

Fan tap	H	M	L
Sound pressure (dBA)	41.0	36.0	33.0



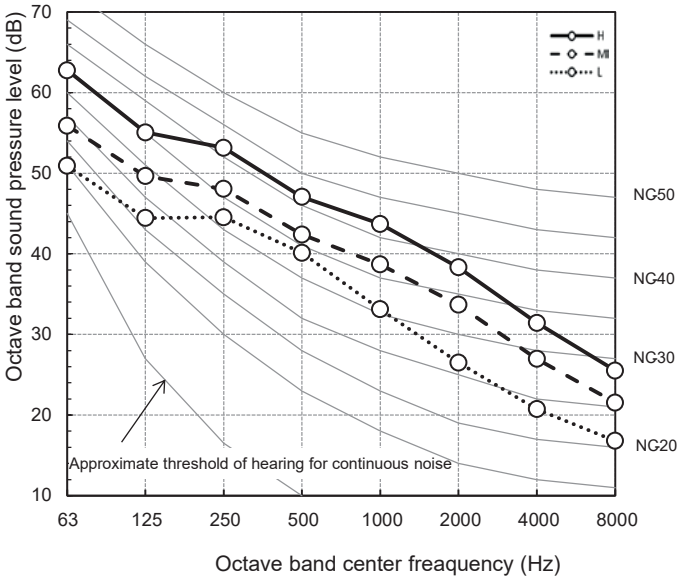
Extarnal static pressure 175Pa

Fan tap	H	M	L
Sound pressure (dBA)	43.0	38.0	33.0

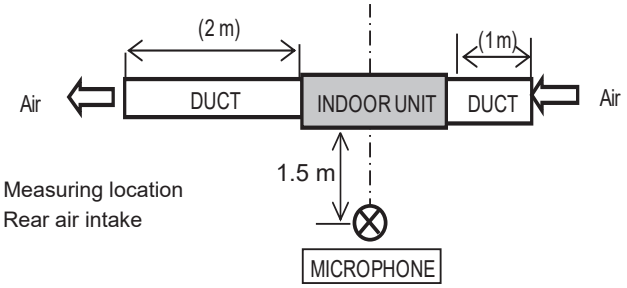


Extarnal static pressure 200Pa

Fan tap	H	M	L
Sound pressure (dBA)	45.0	40.0	36.0

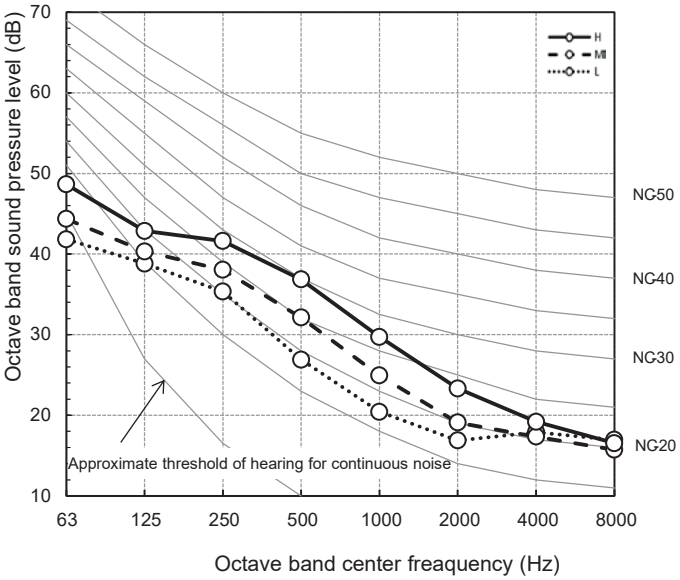


MMD-UP0241HP-E / TR



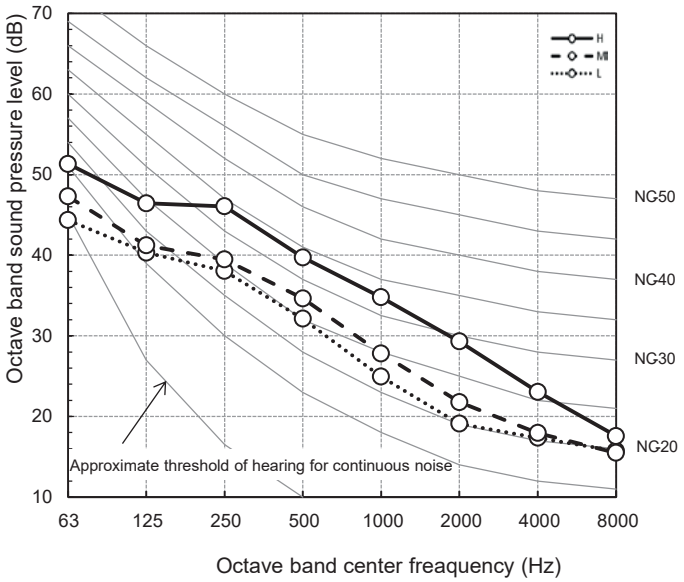
Extarnal static pressure 50Pa

Fan tap	H	M	L
Sound pressure (dBA)	35.0	30.0	26.0



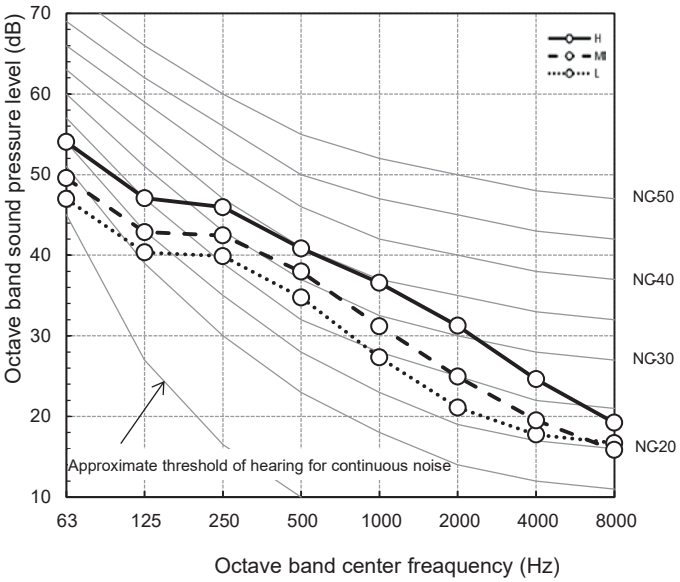
Extarnal static pressure 75Pa

Fan tap	H	M	L
Sound pressure (dBA)	37.0	31.0	29.0



Extarnal static pressure 100Pa

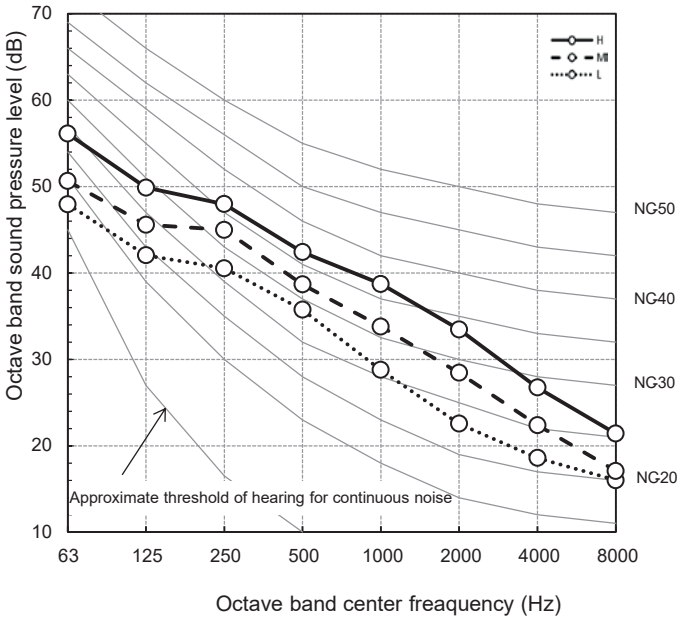
Fan tap	H	M	L
Sound pressure (dBA)	38.0	34.0	32.0



MMD-UP0241HP-E / TR

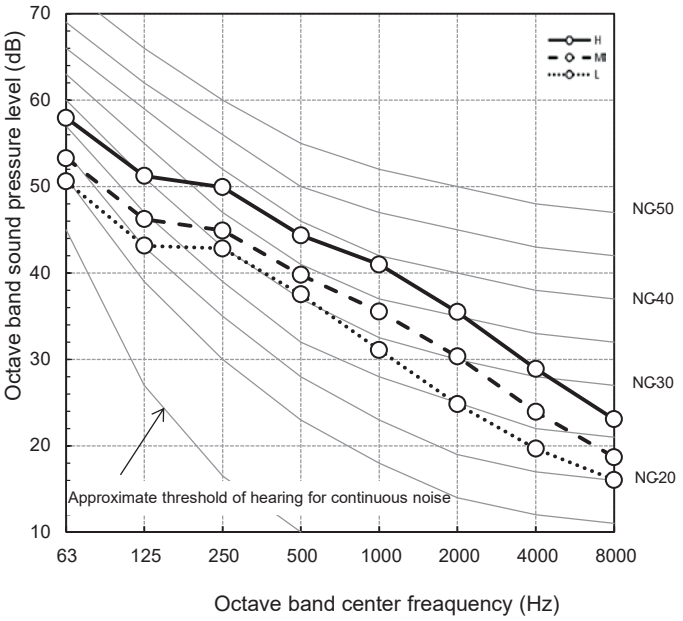
Extarnal static pressure 125Pa

Fan tap	H	M	L
Sound pressure (dBA)	40.0	36.0	32.0



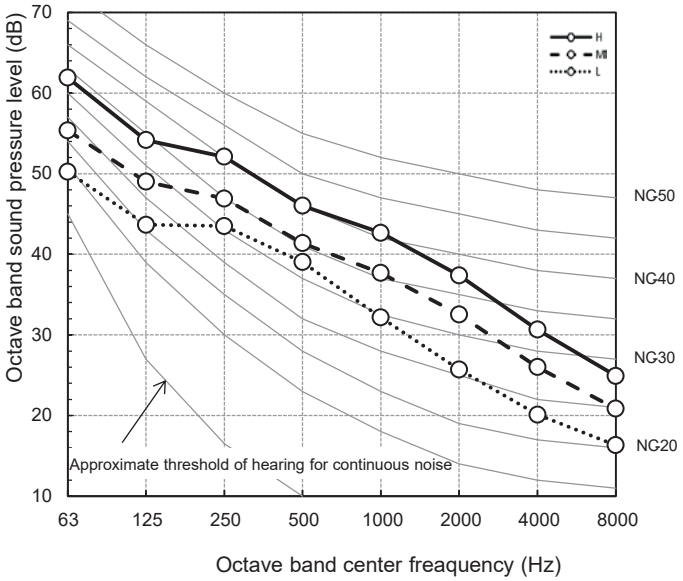
Extarnal static pressure 150Pa

Fan tap	H	M	L
Sound pressure (dBA)	42.0	37.0	34.0



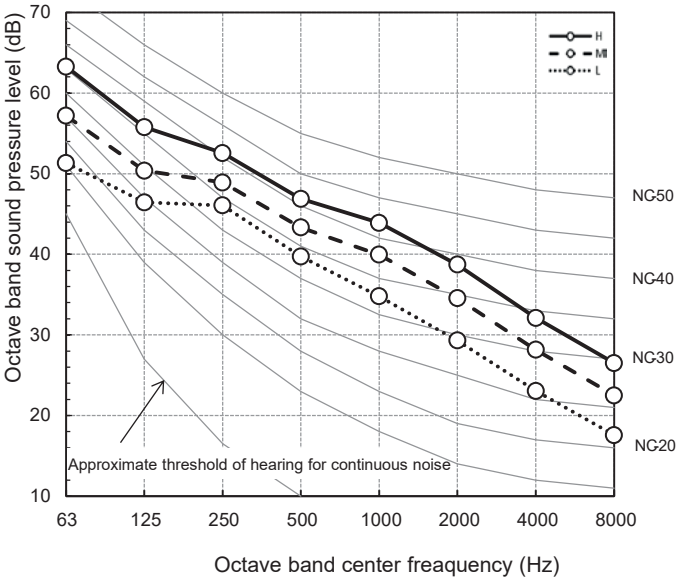
Extarnal static pressure 175Pa

Fan tap	H	M	L
Sound pressure (dBA)	44.0	39.0	35.0

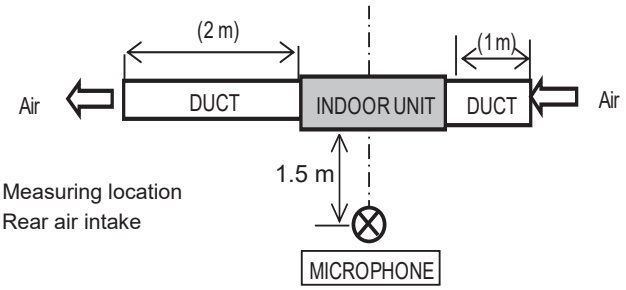


Extarnal static pressure 200Pa

Fan tap	H	M	L
Sound pressure (dBA)	45.0	41.0	37.0



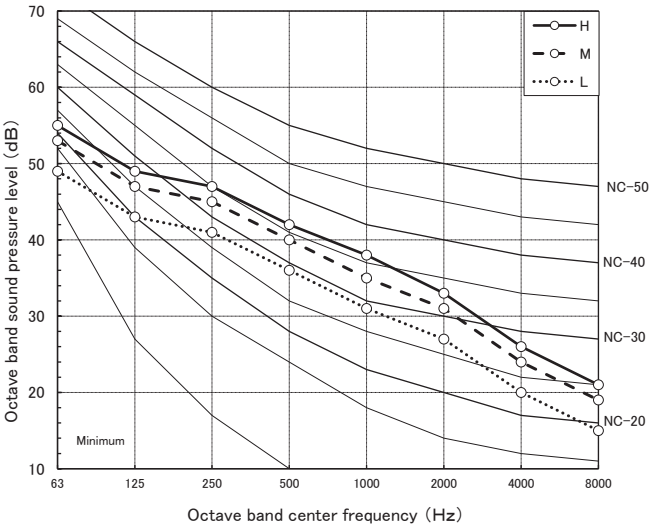
MMD-UP0271HP-E / TR



Measuring location
Rear air intake

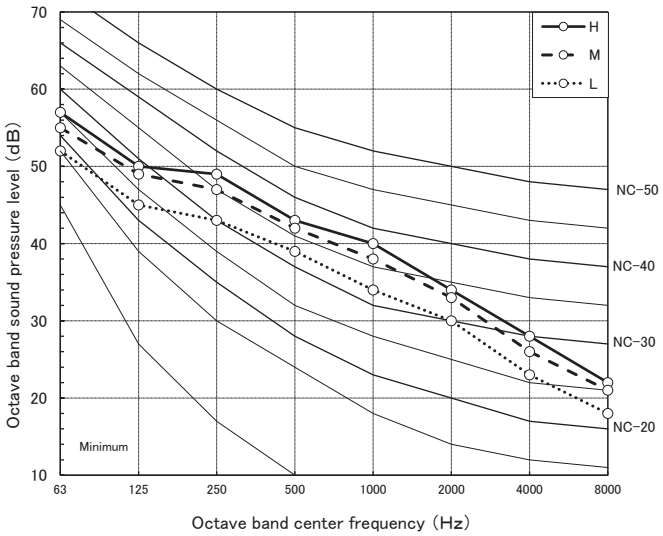
Extarnal static pressure 50Pa

Fan tap	H	M	L
Sound pressure (dBA)	39.0	37.0	33.0



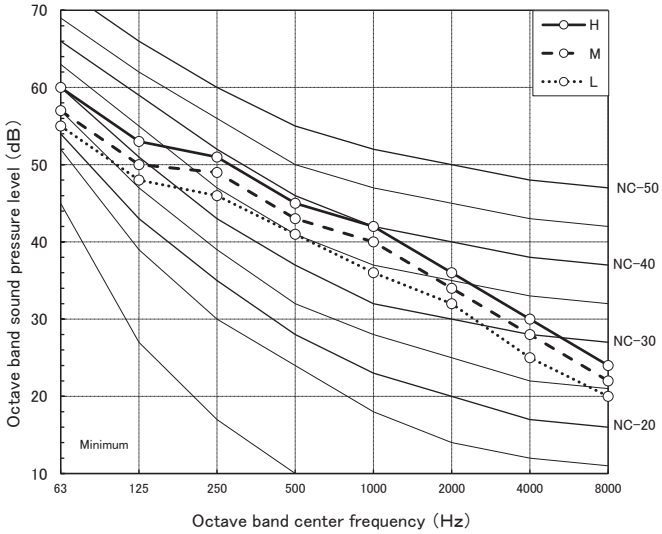
Extarnal static pressure 75Pa

Fan tap	H	M	L
Sound pressure (dBA)	41.0	39.0	36.0



Extarnal static pressure 100Pa

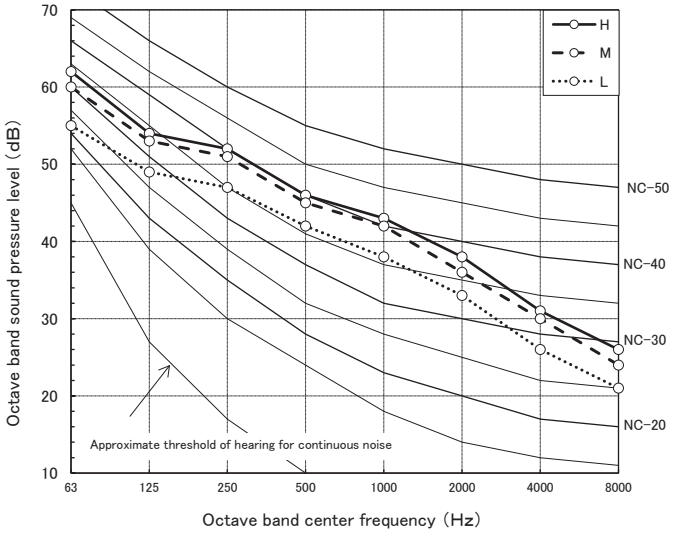
Fan tap	H	M	L
Sound pressure (dBA)	43.0	41.0	38.0



MMD-UP0271HP-E / TR

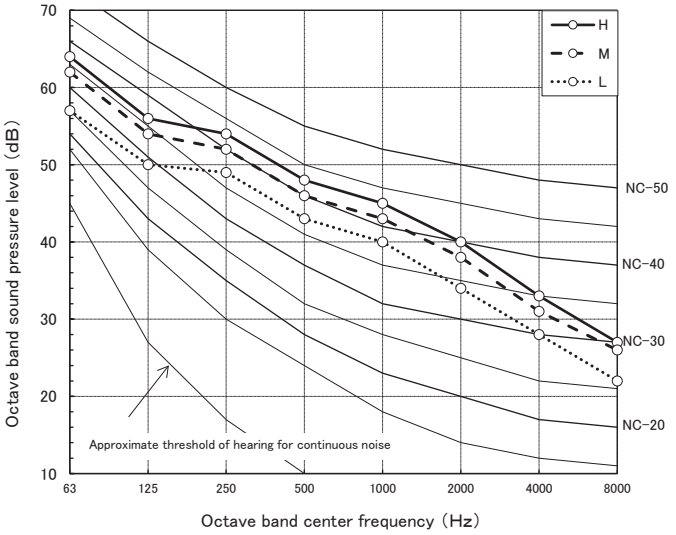
Extarnal static pressure 125Pa

Fan tap	H	M	L
Sound pressure (dBA)	44.0	43.0	39.0



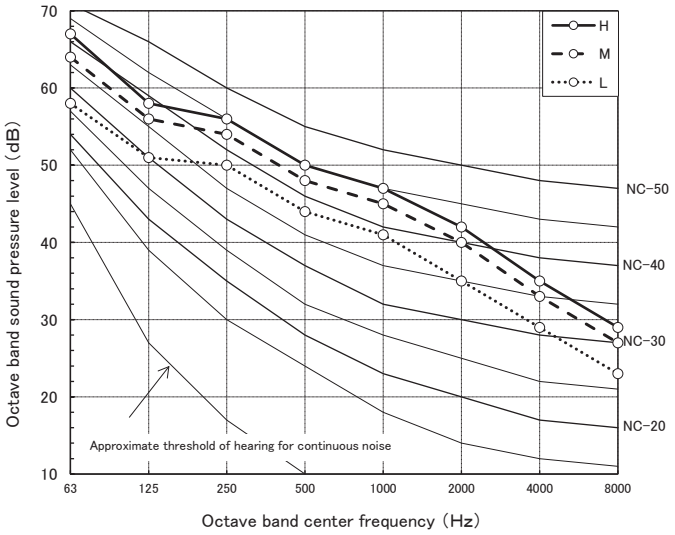
Extarnal static pressure 150Pa

Fan tap	H	M	L
Sound pressure (dBA)	46.0	44.0	41.0



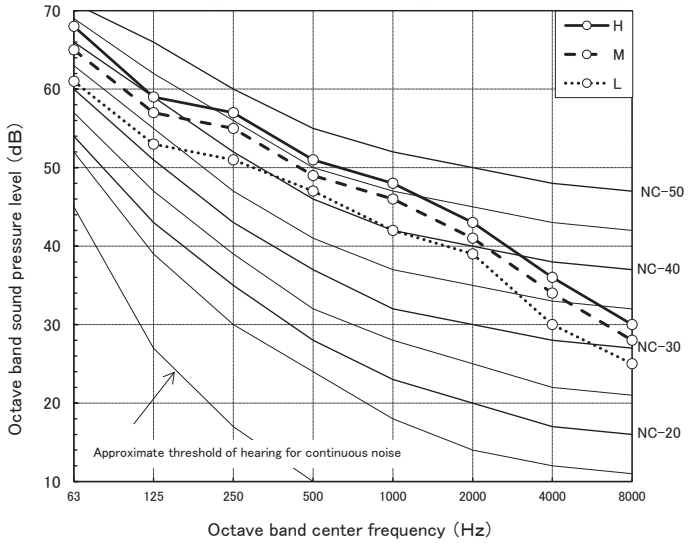
Extarnal static pressure 175Pa

Fan tap	H	M	L
Sound pressure (dBA)	48.0	46.0	42.0

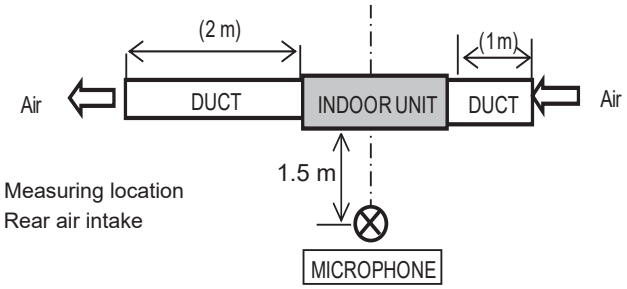


Extarnal static pressure 200Pa

Fan tap	H	M	L
Sound pressure (dBA)	49.0	47.0	44.0

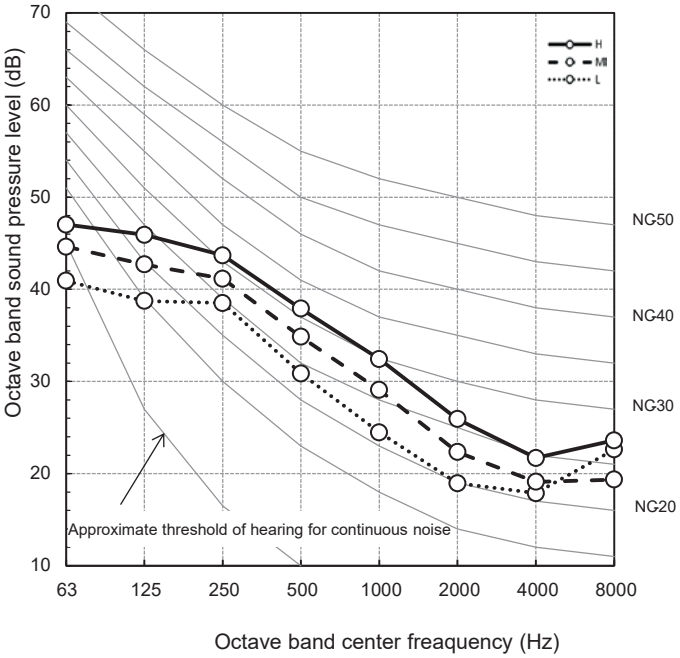


MMD-UP0361HP-E / TR



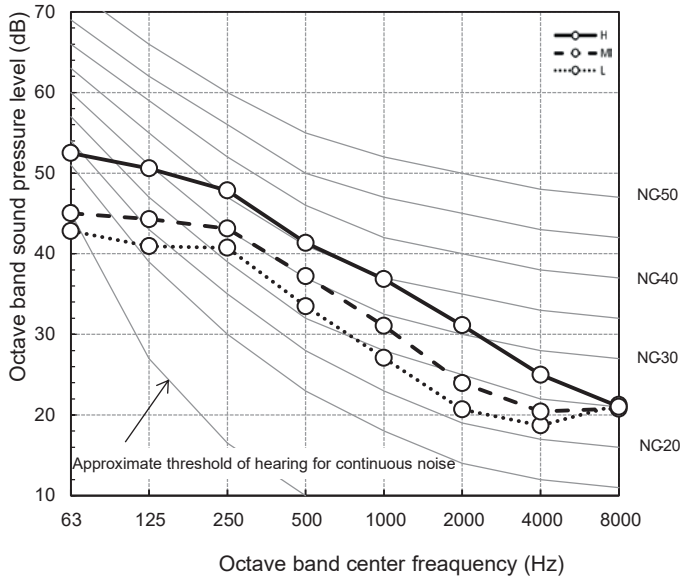
Extarnal static pressure 50Pa

Fan tap	H	M	L
Sound pressure (dBA)	35.0	32.0	29.0



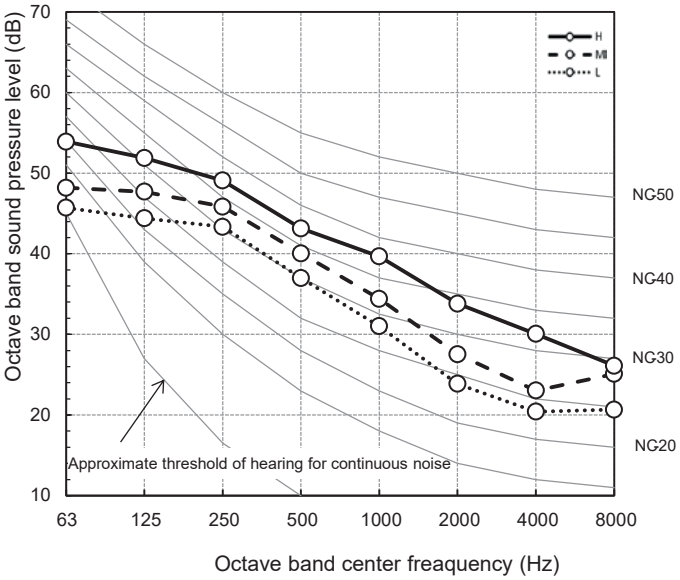
Extarnal static pressure 75Pa

Fan tap	H	M	L
Sound pressure (dBA)	39.0	34.0	31.0



Extarnal static pressure 100Pa

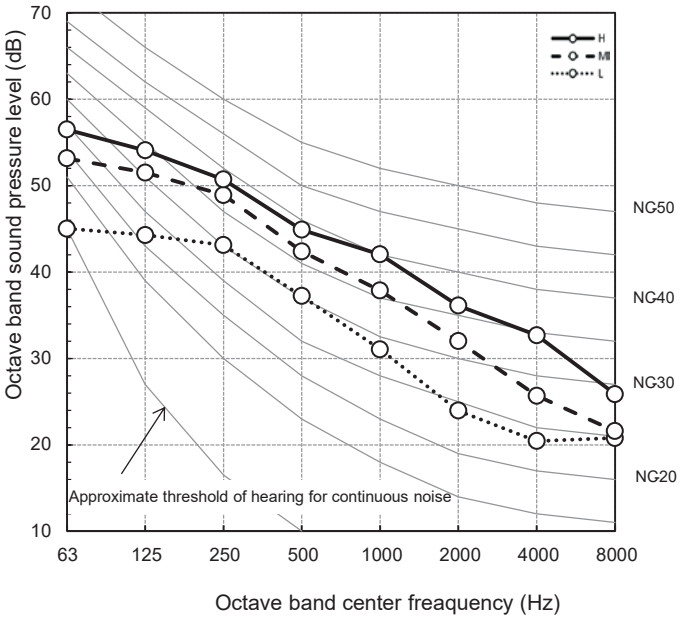
Fan tap	H	M	L
Sound pressure (dBA)	41.0	37.0	34.0



MMD-UP0361HP-E / TR

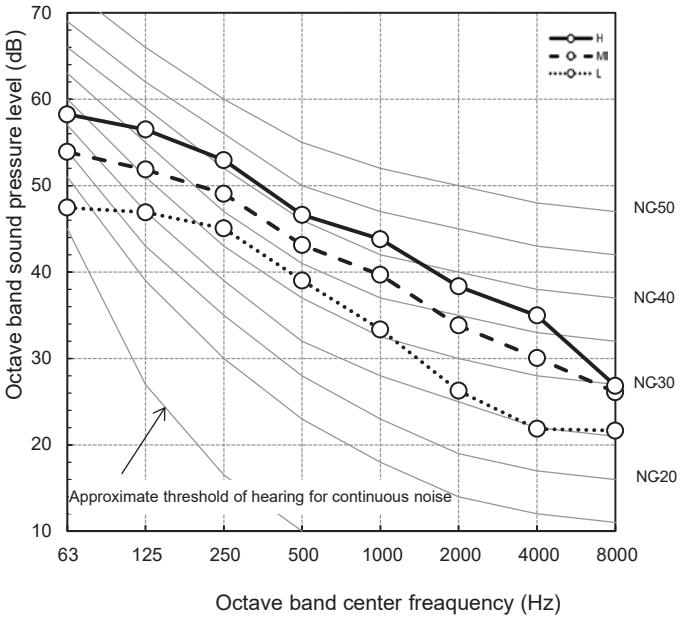
Extarnal static pressure 125Pa

Fan tap	H	M	L
Sound pressure (dBA)	43.0	40.0	34.0



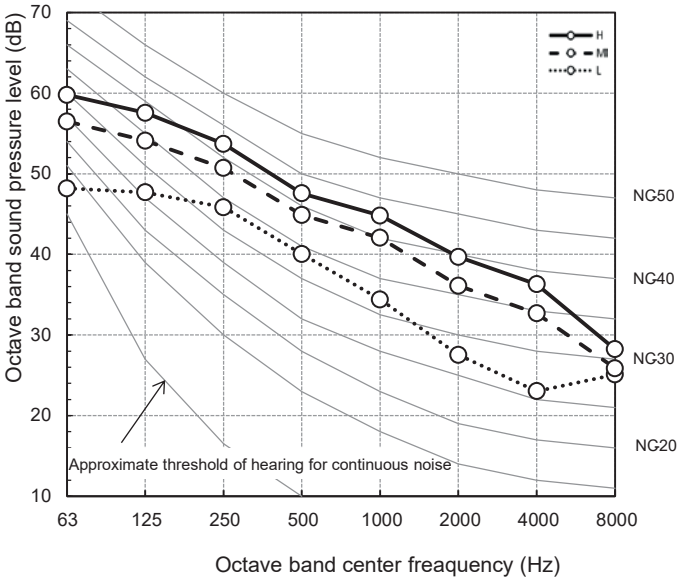
Extarnal static pressure 150Pa

Fan tap	H	M	L
Sound pressure (dBA)	45.0	41.0	36.0



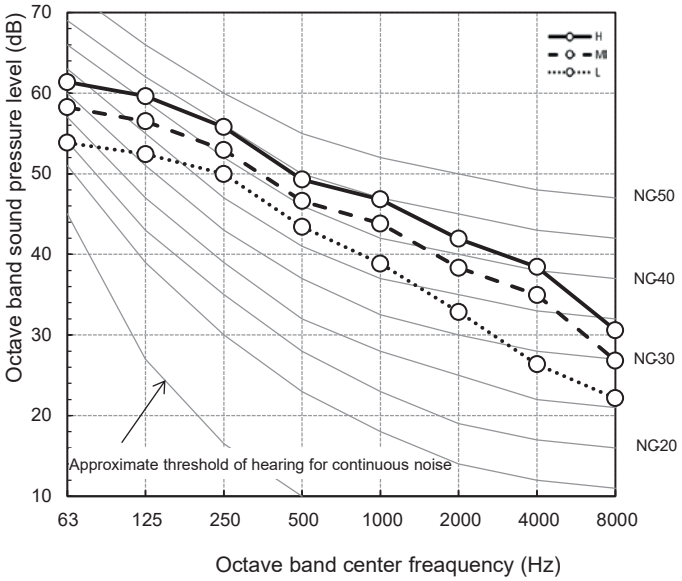
Extarnal static pressure 175Pa

Fan tap	H	M	L
Sound pressure (dBA)	46.0	43.0	37.0

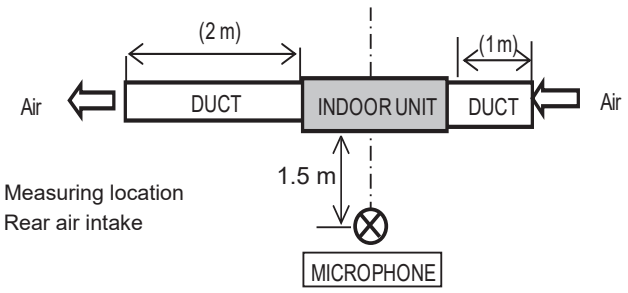


Extarnal static pressure 200Pa

Fan tap	H	M	L
Sound pressure (dBA)	48.0	45.0	41.0

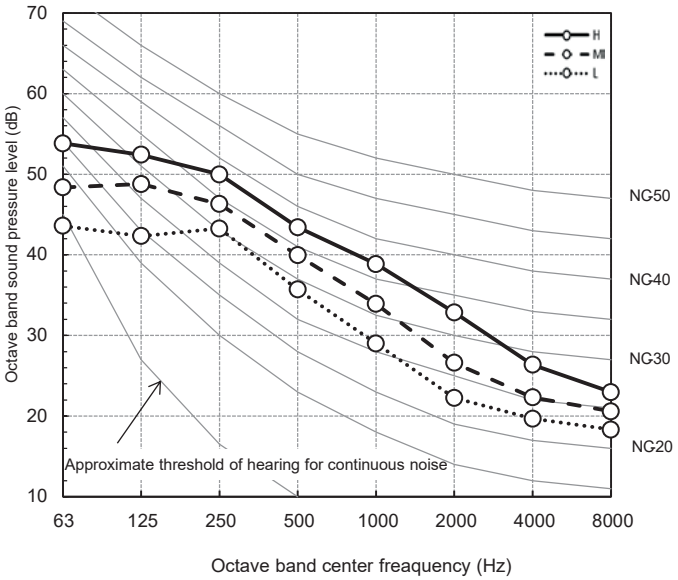


MMD-UP0481HP-E / TR



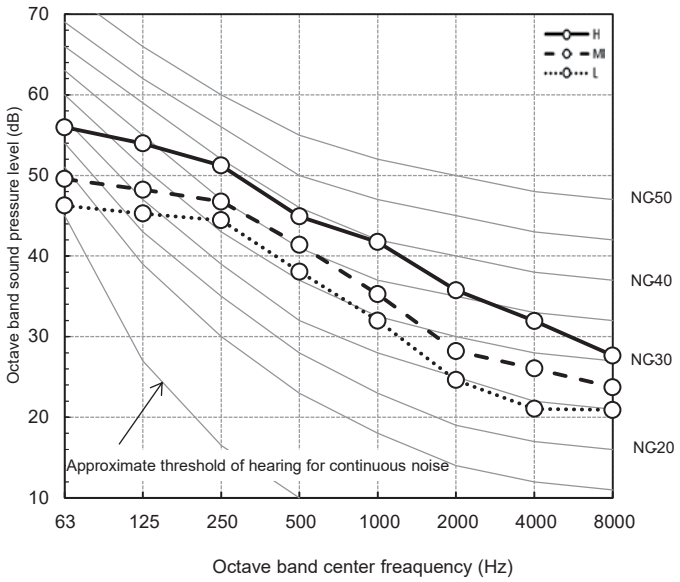
Extarnal static pressure 50Pa

Fan tap	H	M	L
Sound pressure (dBA)	41.0	37.0	33.0



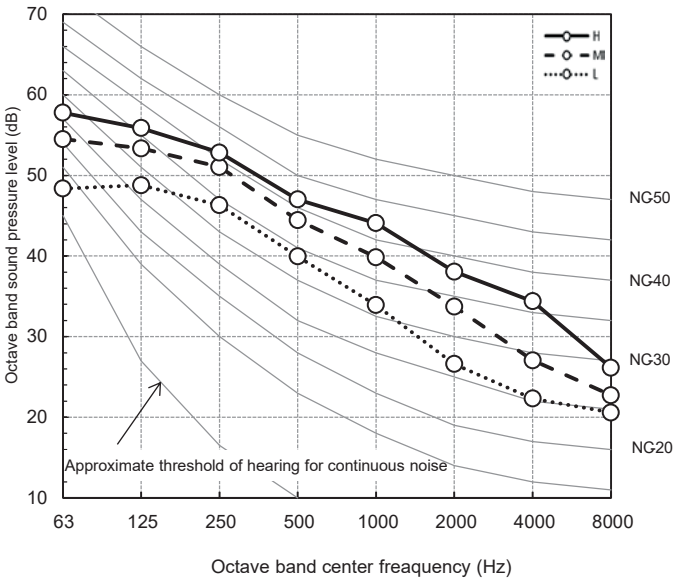
Extarnal static pressure 75Pa

Fan tap	H	M	L
Sound pressure (dBA)	43.0	38.0	35.0



Extarnal static pressure 100Pa

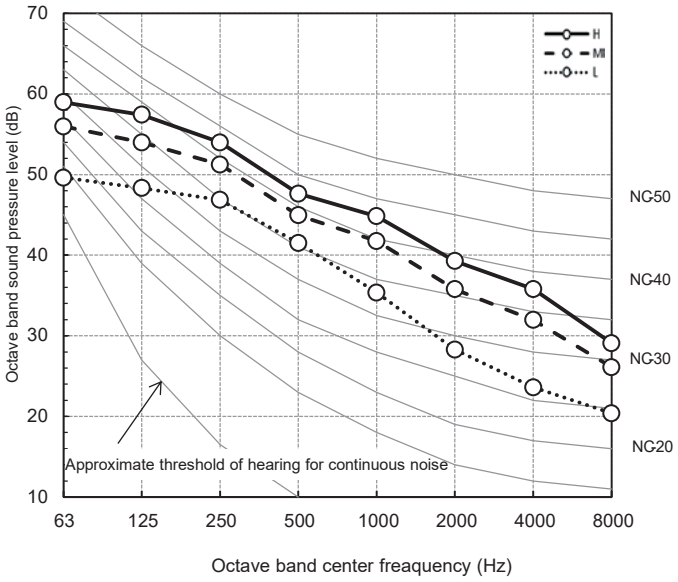
Fan tap	H	M	L
Sound pressure (dBA)	44.0	41.0	38.0



MMD-UP0481HP-E / TR

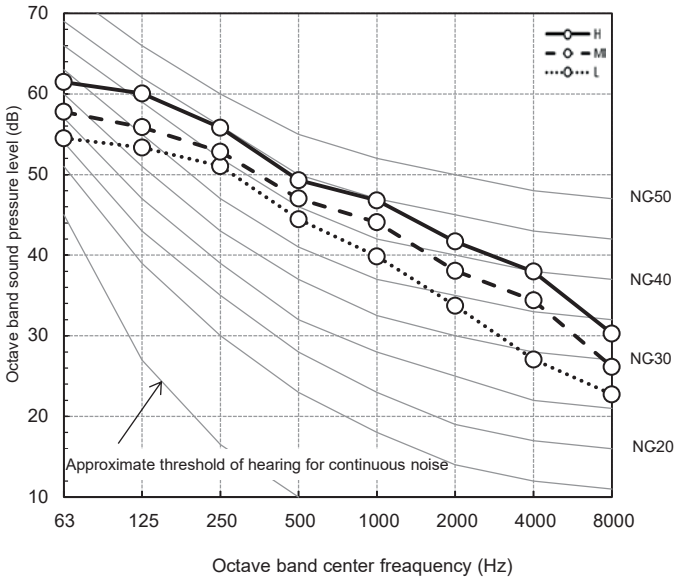
Extarnal static pressure 125Pa

Fan tap	H	M	L
Sound pressure (dBA)	46.0	43.0	38.0



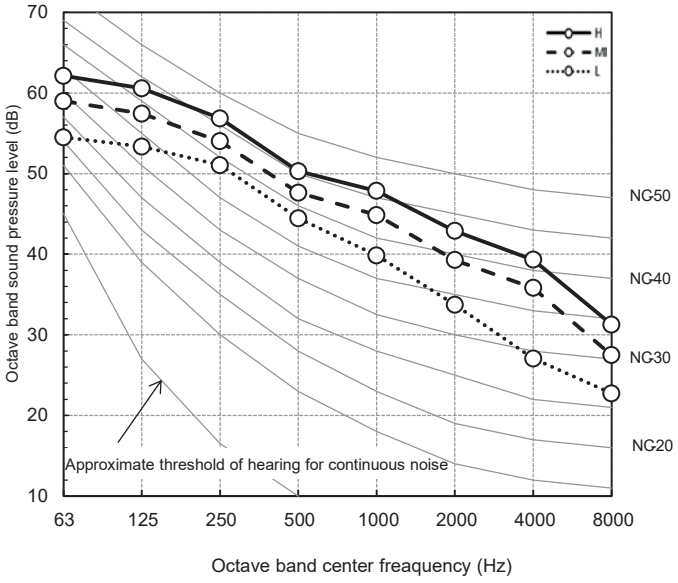
Extarnal static pressure 150Pa

Fan tap	H	M	L
Sound pressure (dBA)	48.0	45.0	42.0



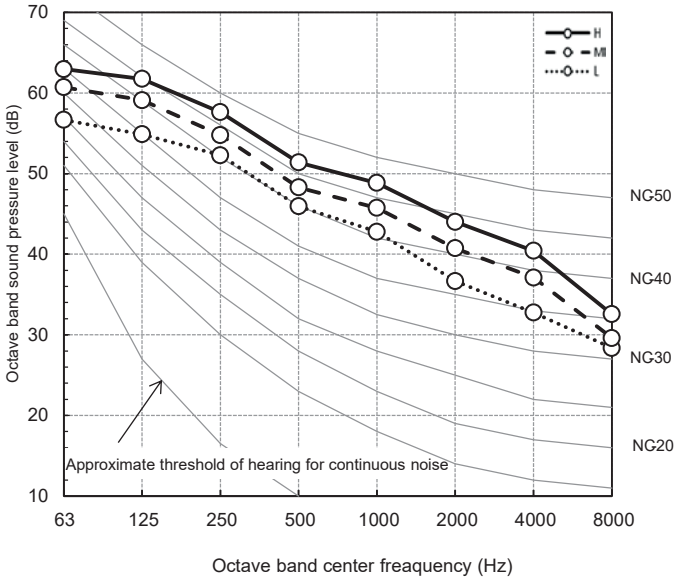
Extarnal static pressure 175Pa

Fan tap	H	M	L
Sound pressure (dBA)	49.0	46.0	42.0

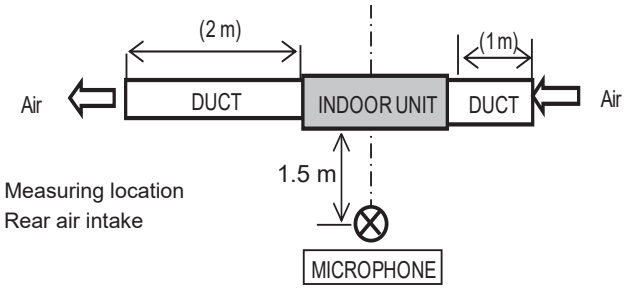


Extarnal static pressure 200Pa

Fan tap	H	M	L
Sound pressure (dBA)	50.0	47.0	44.0

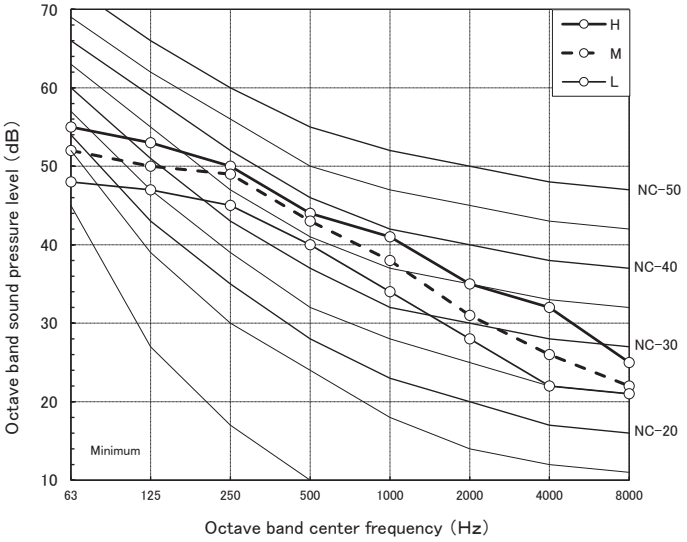


MMD-UP0561HP-E / TR



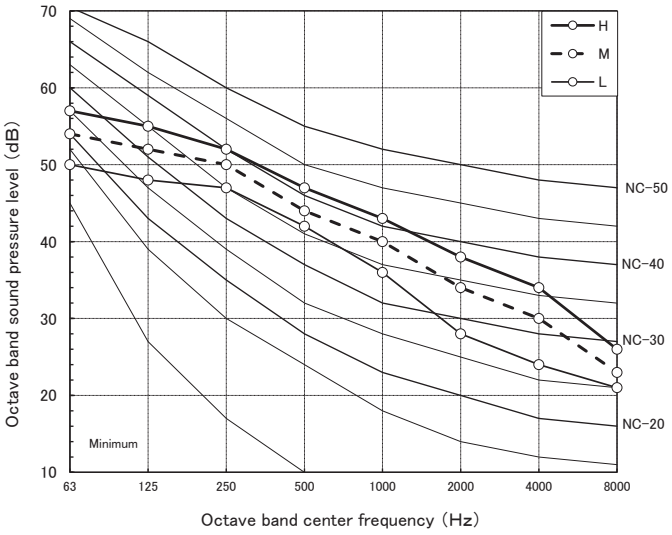
Extarnal static pressure 50Pa

Fan tap	H	M	L
Sound pressure (dBA)	42.0	40.0	37.0



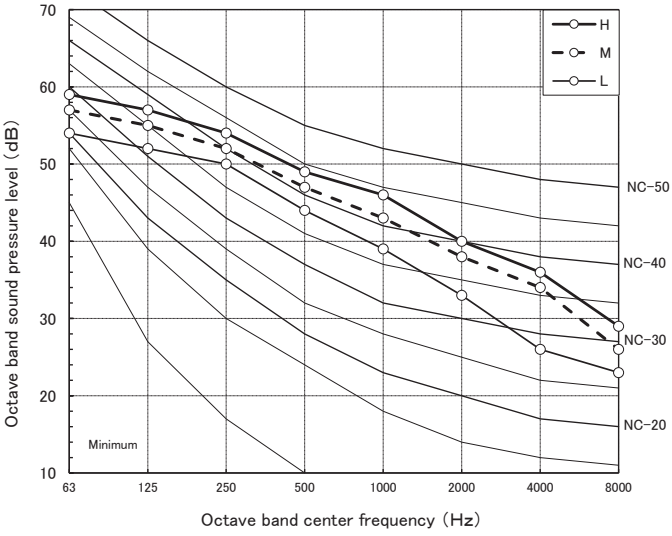
Extarnal static pressure 75Pa

Fan tap	H	M	L
Sound pressure (dBA)	44.0	41.0	39.0



Extarnal static pressure 100Pa

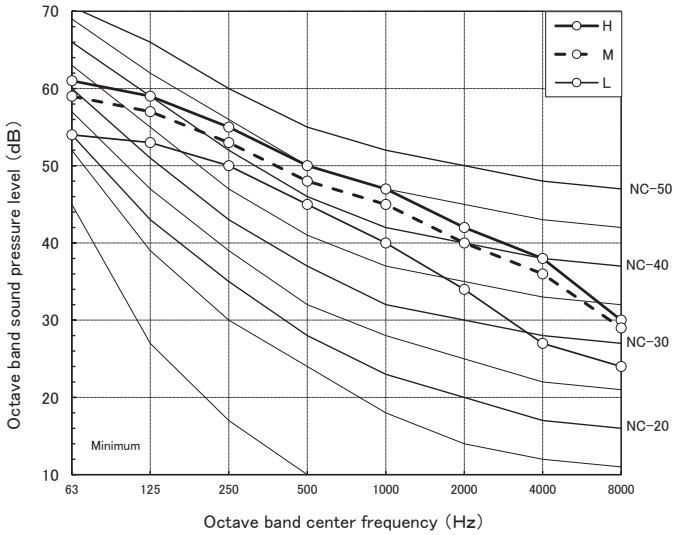
Fan tap	H	M	L
Sound pressure (dBA)	46.0	44.0	41.0



MMD-UP0561HP-E / TR

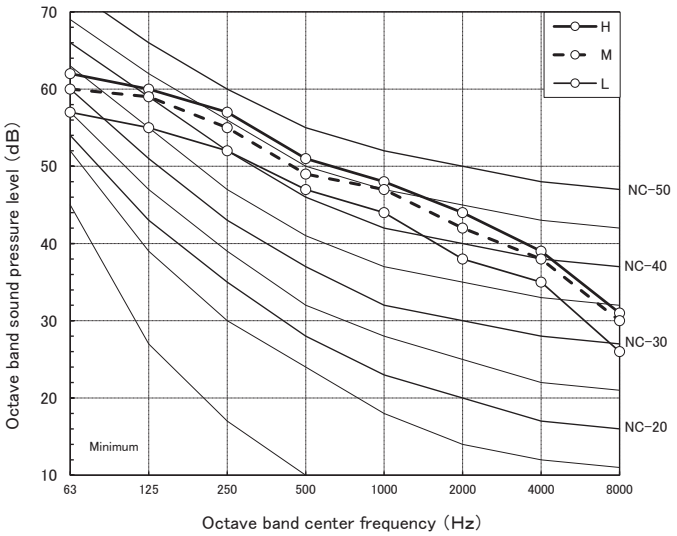
Extarnal static pressure 125Pa

Fan tap	H	M	L
Sound pressure (dBA)	47.0	46.0	42.0



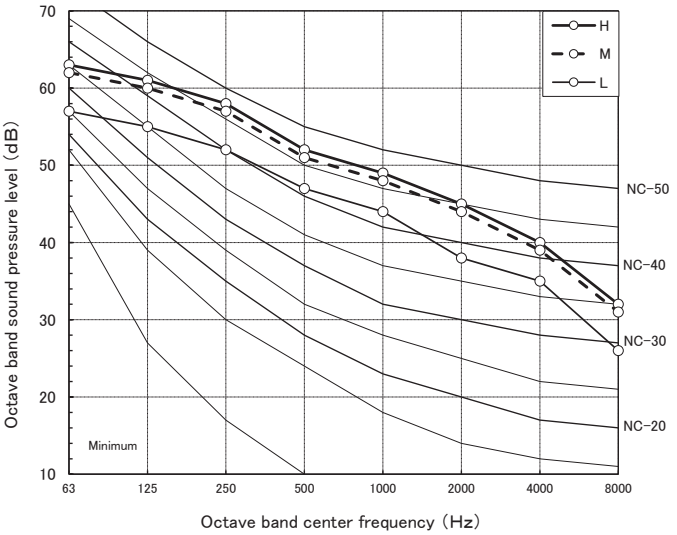
Extarnal static pressure 150Pa

Fan tap	H	M	L
Sound pressure (dBA)	49.0	48.0	45.0



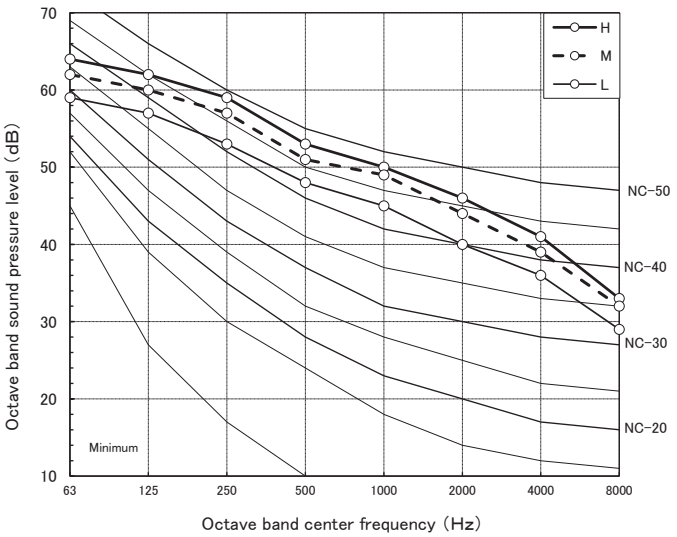
Extarnal static pressure 175Pa

Fan tap	H	M	L
Sound pressure (dBA)	50.0	49.0	45.0

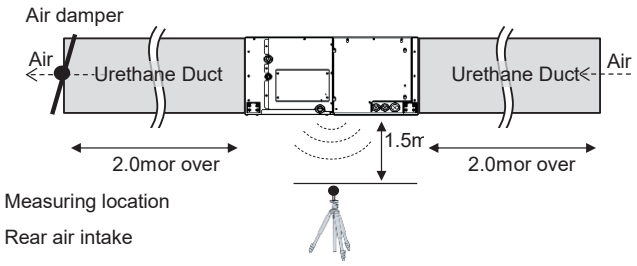


Extarnal static pressure 200Pa

Fan tap	H	M	L
Sound pressure (dBA)	51.0	50.0	47.0

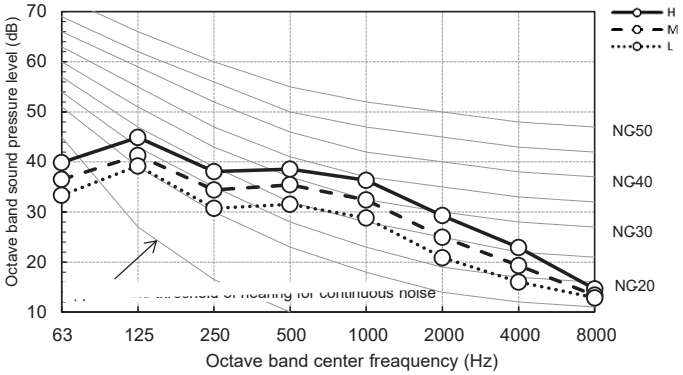


MMD-UP0721HP-E / TR



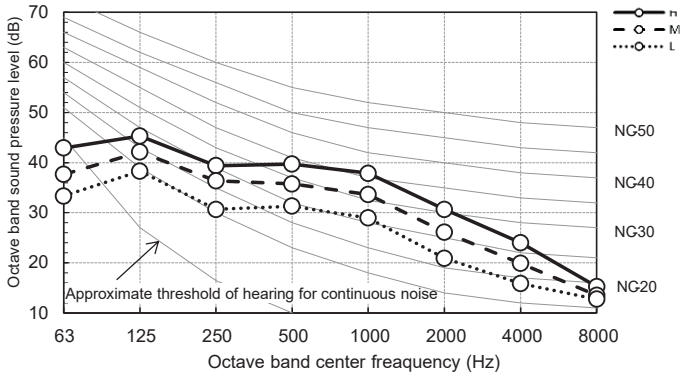
Extarnal static pressure 50Pa

Fan tap	H	M	L
Sound pressure (dBA)	42.5	38.5	34.5



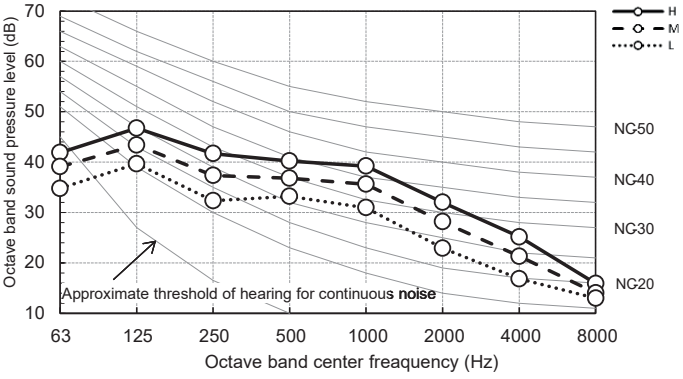
Extarnal static pressure 83Pa

Fan tap	H	M	L
Sound pressure (dBA)	43.0	39.0	35.0



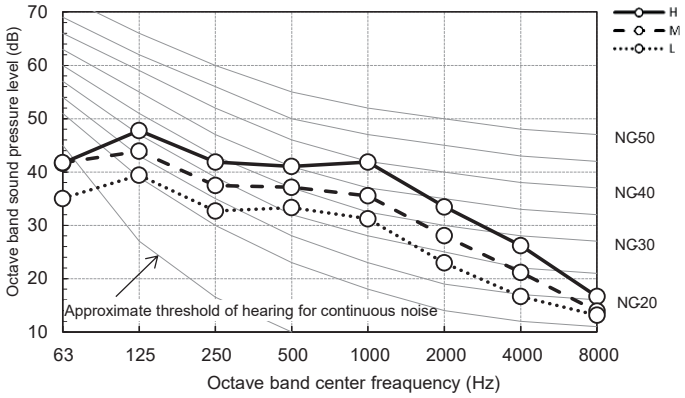
Extarnal static pressure 117Pa

Fan tap	H	M	L
Sound pressure (dBA)	43.5	39.5	35.5



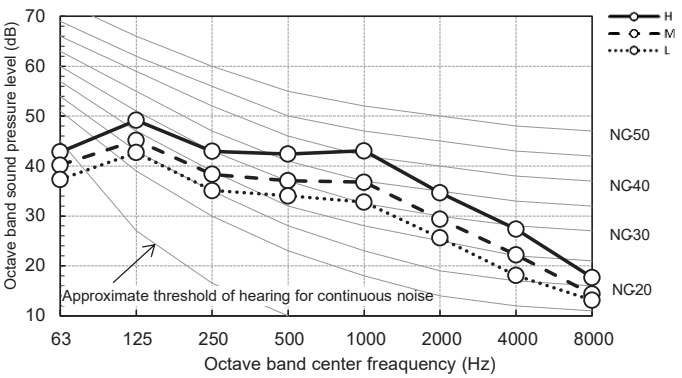
Extarnal static pressure 150Pa

Fan tap	H	M	L
Sound pressure (dBA)	44.0	40.0	36.0



Extarnal static pressure 183Pa

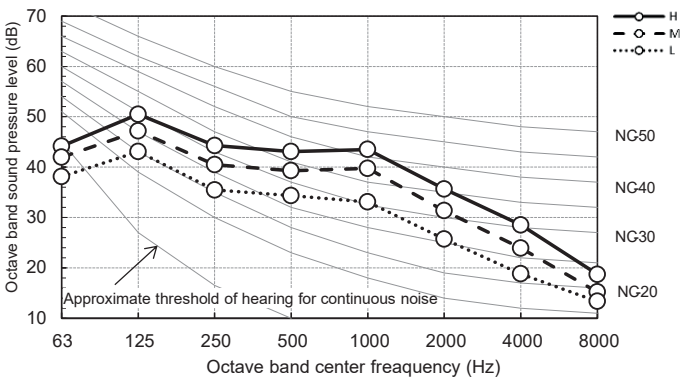
Fan tap	H	M	L
Sound pressure (dBA)	45.0	41.0	37.0



MMD-UP0721HP-E / TR

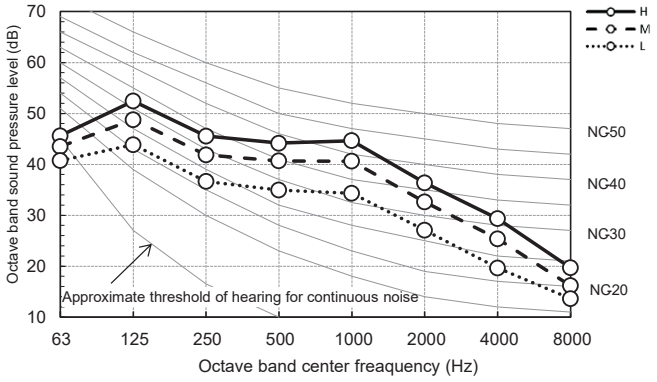
Extarnal static pressure 217Pa

Fan tap	H	M	L
Sound pressure (dBA)	46.0	42.0	38.0

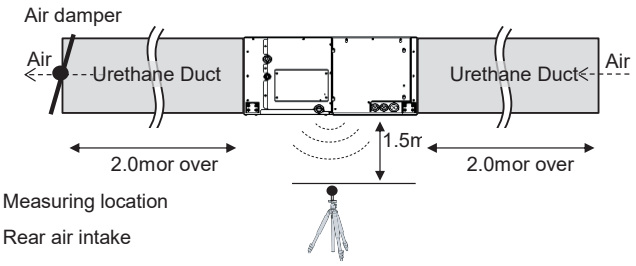


Extarnal static pressure 250Pa

Fan tap	H	M	L
Sound pressure (dBA)	47.0	43.0	39.0

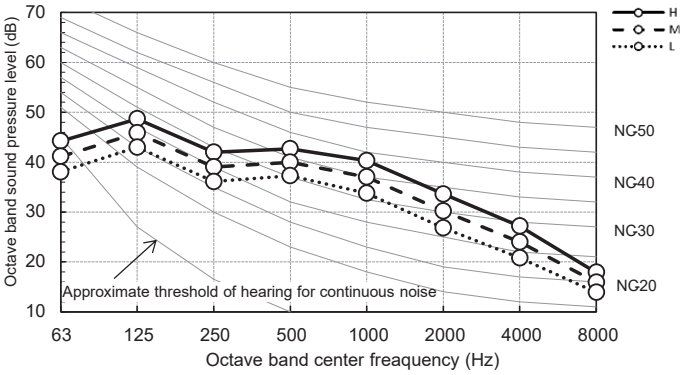


MMD-UP0961HP-E / TR



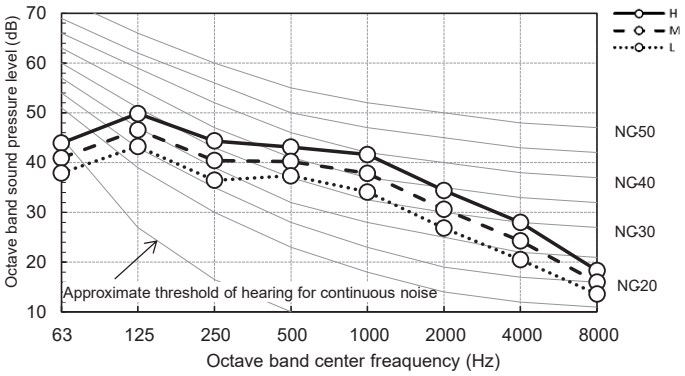
Extarnal static pressure 50Pa

Fan tap	H	M	L
Sound pressure (dBA)	44.5	40.5	36.5



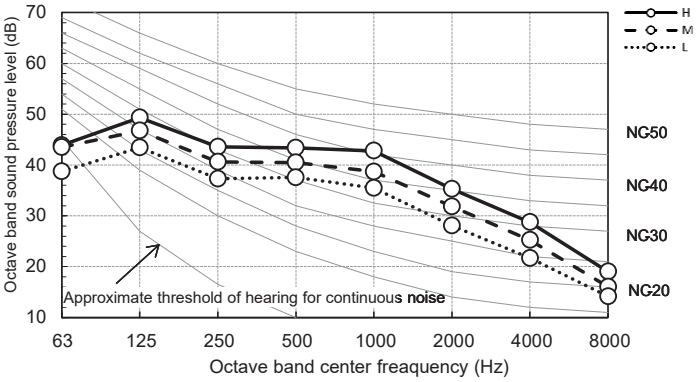
Extarnal static pressure 83Pa

Fan tap	H	M	L
Sound pressure (dBA)	45.0	41.0	37.0



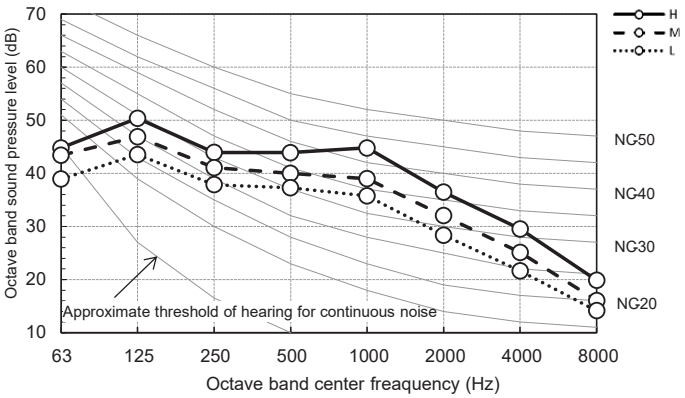
Extarnal static pressure 117Pa

Fan tap	H	M	L
Sound pressure (dBA)	45.5	41.5	37.5



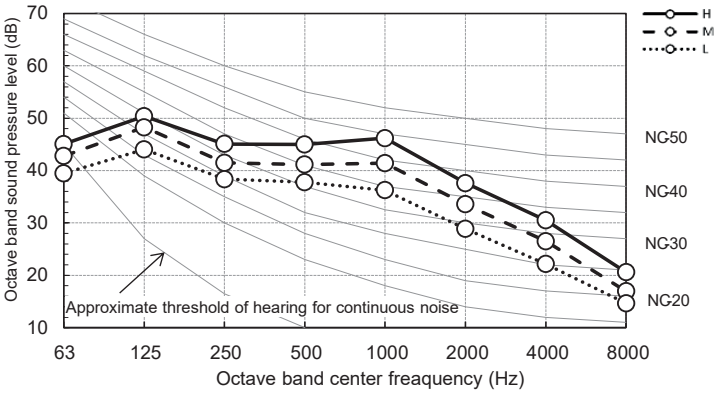
Extarnal static pressure 150Pa

Fan tap	H	M	L
Sound pressure (dBA)	46.0	42.0	38.0



Extarnal static pressure 183Pa

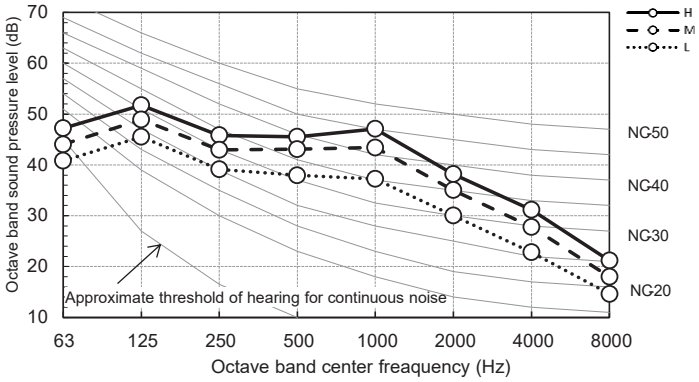
Fan tap	H	M	L
Sound pressure (dBA)	47.0	43.0	39.0



MMD-UP0961HP-E / TR

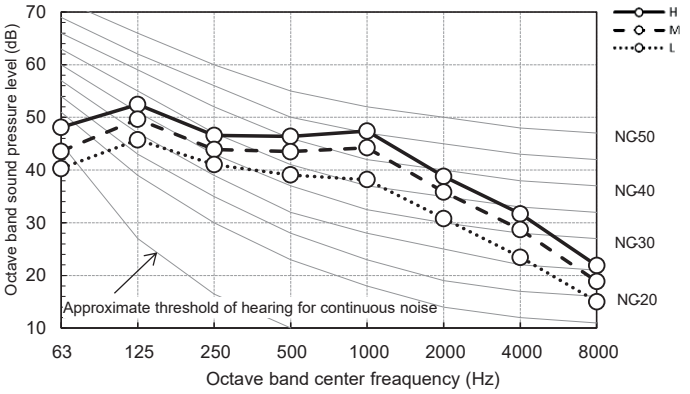
Extarnal static pressure 217Pa

Fan tap	H	M	L
Sound pressure (dBA)	48.0	44.0	40.0



Extarnal static pressure 250Pa

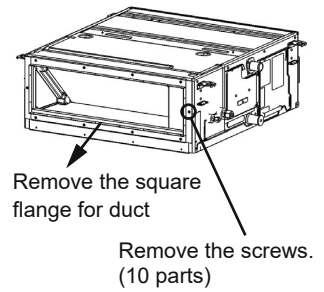
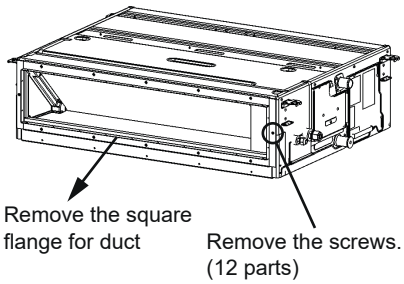
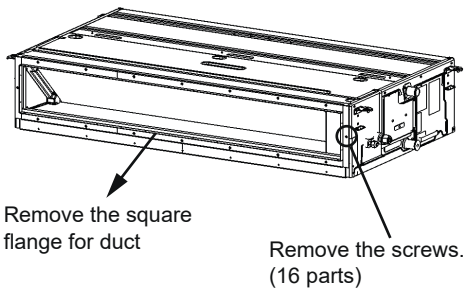
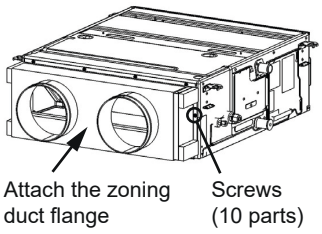
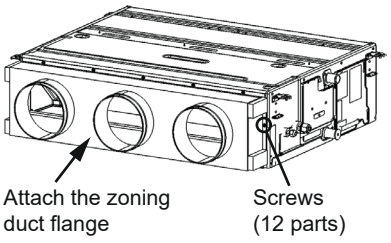
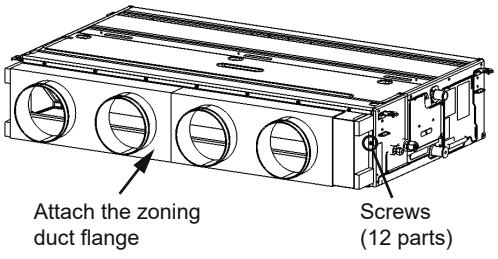
Fan tap	H	M	L
Sound pressure (dBA)	49.0	45.0	41.0



10. Accessories

Option Parts	Model Name	Applicable FCU
Long life filter kit	TCB-LK801D-E	MMD-UP0181 / AP0241 / 0301HP - E / TR
	TCB-LK1401D-E	MMD-UP0361 / 0481 / 0561HP - E / TR
	TCB-LK2801DP-E	MMD-UP0721 / 0961HP - E / TR
Spigot shaped flange	TCB-SF80C6BE	MMD-UP0181 / 0241 / 0301HP - E / TR
	TCB-SF160C6BE	MMD-UP0361 / 0481 / 0561HP - E / TR
Drain pump kit	TCB-DP40DPE	MMD-UP0721 / 0961HP - E / TR
Auxiliary fresh air flange	TCB-FF151US-E	For Duct type

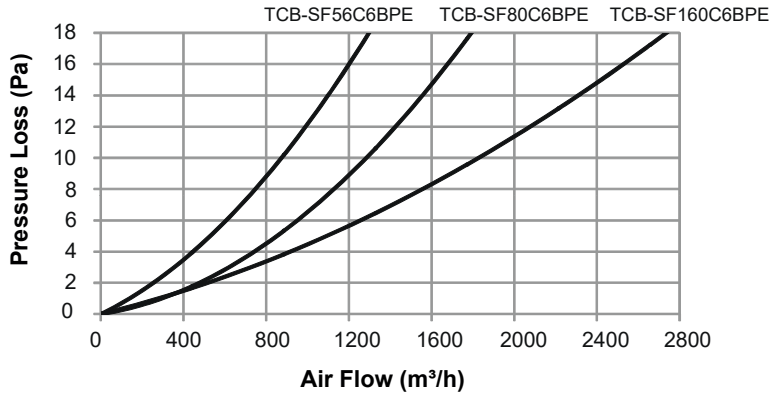
Appendix

Zoning duct flange TCB-SF56C6BPE	Zoning duct flange TCB-SF80C6BPE	Zoning duct flange TCB-SF160C6BPE
		
		

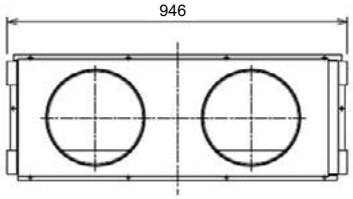
Remove screws on square flange for duct of indoor unit and attach the zoning duct flange with the screw.

External pressure loss characteristic

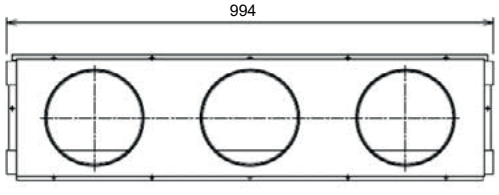
When you use these “Zoning duct flange” with Concealed Duct Type and High Static Presure type, pressure-loss characteristics depends on Air Flow.



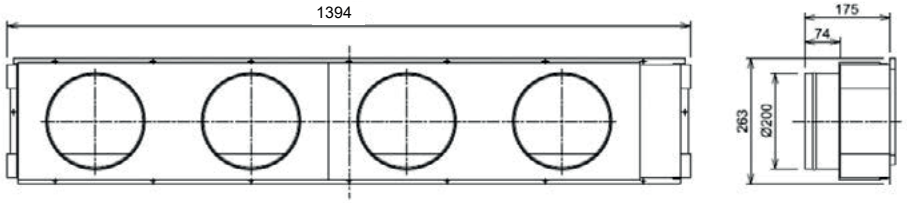
External dimension



TCB-SF56C6BPE



TCB-SF80C6BPE



TCB-SF160C6BPE

Auxiliary fresh air flange

Arrange a flexible duct (locally procured).
It is necessary to install auxiliary fresh air flange.

INSTALLATION PROCEDURE

1 Using the knockout of the indoor unit, as a marker, cut off the steel plate with cutting pliers or cutter.
2 Install the auxiliary fresh air flange to the indoor unit with attached 4 fixing screws.

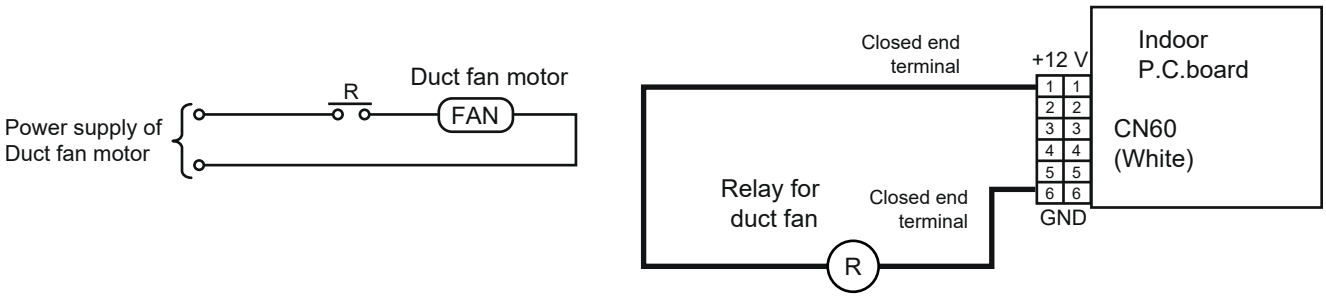
⚠ CAUTION

The fresh air shall be conditioned by heat reclaim ventilator or similar.
Emsure the fresh air volume is determined so that mixed suction air and fresh air maintain the operating temperature.
Recommended conditioned air temperature is 12ºC to 30ºC.
however, make a fresh air volume within 10% of standard.

Provide an air filter in fresh air duct. (Fresh air doesn't pass through the filter of indoor unit.)
Besure to insulate fresh air duct.
Please wire for inter-lock with fan of indoor unit by using CN60.

Inter - lock circuit

1. Connect the driving relay of the duct fan (DC 12 V) between 1 and 6 on the indoor P.C.board.
   Part indicated with a bold line is the connecting circuit.
   After installation, implement a test run to check that the duct fan of the indoor unit start / stop simultaneously.
   (Implement the test run following to the installation manual of the indoor unit.)



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Revision : 07/ 250215