

2-PIPE FSV-EX ME2 Series

HIGH EFFICIENCY COMBINATION MODEL

Appearance												
kW			22.4	28.0	33.5	40.0	45.0	50.0	56.0	61.5	68.0	
Model name			U-8ME2R8	U-10ME2R8	U-12ME2R8	U-14ME2R8	U-16ME2R8	U-8ME2R8 U-10ME2R8	U-10ME2R8 U-10ME2R8	U-10ME2R8 U-12ME2R8	U-12ME2R8 U-12ME2R8	
Power supply			400V/415V/3-phase/50Hz									
Capacity	Cooling	kW	22.4	28.0	33.5	40.0	45.0	50.0	56.0	61.5	68.0	
		BTU/h	76,500	95,600	114,300	136,500	153,500	170,600	191,100	209,900	232,100	
	Heating	kW	25.0	31.5	37.5	45.0	50.0	56.0	63.0	69.0	76.5	
		BTU/h	85,300	107,500	128,000	153,600	170,600	191,100	215,000	235,500	261,100	
EER / COP	Cooling	W/W	4.70	4.37	3.96	3.88	3.52	4.55	4.38	4.13	3.93	
	Heating	W/W	5.13	4.76	4.73	4.56	4.42	4.96	4.77	4.76	4.69	
Dimensions	H x W x D	mm	1,842 x 770 x 1,000	1,842 x 770 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,600 x 1,000	1,842 x 1,600 x 1,000	1,842 x 2,010 x 1,000	1,842 x 2,420 x 1,000	
Net weight		kg	220	220	270	315	315	440	440	490	540	
Electrical ratings	Cooling	Running current A	7.40 / 7.14	10.2 / 9.80	13.0 / 12.5	16.5 / 15.9	20.1 / 19.4	17.3 / 16.6	20.3 / 19.6	23.1 / 22.3	26.6 / 25.6	
		Power input kW	4.77	6.41	8.47	10.3	12.8	11.0	12.8	14.9	17.3	
	Heating	Running current A	7.56 / 7.29	10.5 / 10.1	12.3 / 11.9	15.8 / 15.2	17.9 / 17.3	17.7 / 17.1	20.9 / 20.2	22.7 / 21.9	25.3 / 24.4	
		Power input kW	4.87	6.62	7.92	9.86	11.3	11.3	13.2	14.5	16.3	
Starting current	A	1	1	1	2	2	2	2	2	2		
Air flow rate	m³/h	13,440	13,440	13,920	13,920	13,920	26,880	26,880	27,360	27,840		
	L/s	3,733	3,733	3,866	3,866	3,866	7,466	7,466	7,600	7,733		
Refrigerant amount at shipment	kg	11.1	11.1	11.3	11.3	11.3	22.2	22.2	22.4	22.6		
External static pressure	Pa	80	80	80	80	80	80	80	80	80		
Piping connections	Gas pipe	mm (inches)	Ø19.05 (Ø3/4)	Ø22.22 (Ø7/8)	Ø25.40 (Ø1)	Ø25.40 (Ø1)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	
	Liquid pipe	mm (inches)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)	Ø12.70 (Ø1/2)	Ø12.70 (Ø1/2)	Ø12.70 (Ø1/2)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	
	Balance pipe	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	
Ambient temperature operating range			Cooling: -10°C (DB)~ +52°C (DB). Heating: -25°C (WB)~ +18°C (WB)									
Sound pressure level	Normal mode	dB (A)	54.0	56.0	59.0	60.0	61.0	58.5	59.0	61.0	62.0	
	Silent mode (2)	dB (A)	49.0	51.0	54.0	55.0	56.0	53.5	54.0	56.0	57.0	
Sound power level	Normal mode	dB	75.0	77.0	80.0	81.0	82.0	79.5	80.0	82.0	83.0	

Appearance										
kW			140.0	145.0	151.0	156.0	162.0	168.0	174.0	180.0
Model name			U-10ME2R8 U-12ME2R8 U-12ME2R8 U-16ME2R8	U-12ME2R8 U-12ME2R8 U-12ME2R8 U-16ME2R8	U-10ME2R8 U-12ME2R8 U-16ME2R8 U-16ME2R8	U-12ME2R8 U-12ME2R8 U-16ME2R8 U-16ME2R8	U-10ME2R8 U-16ME2R8 U-16ME2R8 U-16ME2R8	U-12ME2R8 U-16ME2R8 U-16ME2R8 U-16ME2R8	U-14ME2R8 U-16ME2R8 U-16ME2R8 U-16ME2R8	U-16ME2R8 U-16ME2R8 U-16ME2R8 U-16ME2R8
Power supply			400V/415V/3-phase/50Hz							
Capacity	Cooling	kW	140.0	145.0	151.0	156.0	162.0	168.0	174.0	180.0
		BTU/h	477,800	494,900	515,400	532,400	552,900	573,400	593,600	614,160
	Heating	kW	155.0	160.0	169.0	175.0	182.0	189.0	195.0	201.0
		BTU/h	529,000	546,100	576,800	597,300	621,200	645,100	665,300	686,000
EER / COP	Cooling	W/W	3.87	3.82	3.75	3.71	3.65	3.60	3.60	3.52
	Heating	W/W	4.65	4.66	4.56	4.56	4.47	4.47	4.45	4.42
Dimensions	H x W x D	mm	1,842 x 4,490 x 1,000	1,842 x 4,900 x 1,000	1,842 x 4,490 x 1,000	1,842 x 4,900 x 1,000	1,842 x 4,490 x 1,000	1,842 x 4,900 x 1,000	1,842 x 4,900 x 1,000	1,842 x 4,900 x 1,000
Net weight		kg	1,075	1,125	1,120	1,170	1,165	1,215	1,260	1,260
Electrical ratings	Cooling	Running current A	56.2 / 54.2	59.0 / 56.8	63.2 / 60.9	65.3 / 63.0	69.7 / 67.1	73.3 / 70.6	75.8 / 73.0	80.3 / 77.4
		Power input kW	36.2	38.0	40.3	42.1	44.4	46.7	48.3	51.2
	Heating	Running current A	52.2 / 50.4	53.8 / 51.9	58.8 / 56.7	60.2 / 58.1	64.6 / 62.2	67.1 / 64.7	69.5 / 67.0	72.2 / 69.6
		Power input kW	33.3	34.3	37.1	38.4	40.7	42.3	43.8	45.5
Starting current		A	5	5	6	6	7	7	8	8
Air flow rate		m³/h	55,200	55,680	55,200	55,680	55,200	55,680	55,680	55,680
		L/s	15,333	15,466	15,333	15,466	15,333	15,466	15,466	15,466
Refrigerant amount at shipment		kg	45.0	45.2	45.0	45.2	45.0	45.2	45.2	45.2
External static pressure		Pa	80	80	80	80	80	80	80	80
Piping connections	Gas pipe	mm (inches)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)
	Liquid pipe	mm (inches)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)
	Balance pipe	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)
Ambient temperature operating range			Cooling: -10°C (DB)~ +52°C (DB). Heating: -25°C (WB)~ +18°C (WB)							
Sound pressure level	Normal mode	dB (A)	65.5	66.0	66.0	66.5	66.5	67.0	67.0	67.0
	Silent mode (2)	dB (A)	60.5	61.0	61.0	61.5	61.5	62.0	62.0	62.0
Sound power level	Normal mode	dB	86.5	87.0	87.0	87.5	87.5	88.0	88.0	88.0



											
73.0	78.5	85.0	90.0	96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0
U-10ME2R8 U-16ME2R8	U-12ME2R8 U-16ME2R8	U-14ME2R8 U-16ME2R8	U-16ME2R8 U-16ME2R8	U-10ME2R8 U-12ME2R8 U-12ME2R8	U-12ME2R8 U-12ME2R8 U-12ME2R8	U-10ME2R8 U-12ME2R8 U-16ME2R8	U-12ME2R8 U-12ME2R8 U-16ME2R8	U-10ME2R8 U-16ME2R8 U-16ME2R8	U-12ME2R8 U-16ME2R8 U-16ME2R8	U-14ME2R8 U-16ME2R8 U-16ME2R8	U-16ME2R8 U-16ME2R8 U-16ME2R8
400V/415V/3-phase/50Hz											
73.0	78.5	85.0	90.0	96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0
249,100	267,900	290,100	307,200	327,600	344,700	365,200	385,700	402,700	423,200	443,700	460,800
81.5	87.5	95.0	100.0	108.0	113.0	119.0	127.0	132.0	138.0	145.0	150.0
278,200	298,600	324,200	341,300	368,600	385,700	406,100	433,400	450,500	471,000	494,900	511,900
3.80	3.69	3.68	3.52	4.05	3.95	3.84	3.75	3.69	3.62	3.62	3.52
4.55	4.56	4.48	4.42	4.72	4.73	4.61	4.57	4.49	4.50	4.46	4.42
1,842 x 2,010 x 1,000	1,842 x 2,420 x 1,000	1,842 x 2,420 x 1,000	1,842 x 2,420 x 1,000	1,842 x 3,250 x 1,000	1,842 x 3,660 x 1,000	1,842 x 3,250 x 1,000	1,842 x 3,660 x 1,000	1,842 x 3,250 x 1,000	1,842 x 3,660 x 1,000	1,842 x 3,660 x 1,000	1,842 x 3,660 x 1,000
535	585	630	630	760	810	805	855	850	900	945	945
30.1 / 29.0	33.1 / 31.9	36.6 / 35.3	40.2 / 38.7	36.8 / 35.5	39.3 / 37.9	43.8 / 42.2	46.7 / 45.0	50.2 / 48.4	53.2 / 51.3	56.9 / 54.9	60.2 / 58.1
19.2	21.3	23.1	25.6	23.7	25.6	27.9	30.1	32.0	34.3	35.9	38.4
28.4 / 27.4	30.1 / 29.0	33.6 / 32.4	35.8 / 34.6	35.9 / 34.6	37.1 / 35.8	40.5 / 39.0	43.6 / 42.0	46.6 / 44.9	48.2 / 46.4	51.5 / 49.7	53.8 / 51.8
17.9	19.2	21.2	22.6	22.9	23.9	25.8	27.8	29.4	30.7	32.5	33.9
3	3	4	4	3	3	4	4	5	5	6	6
27,360	27,840	27,840	27,840	41,280	41,760	41,280	41,760	41,280	41,760	41,760	41,760
7,600	7,733	7,733	7,733	11,466	11,600	11,466	11,600	11,466	11,600	11,600	11,600
22.4	22.6	22.6	22.6	33.7	33.9	33.7	33.9	33.7	33.9	33.9	33.9
80	80	80	80	80	80	80	80	80	80	80	80
Ø31.75 (Ø1-1/4)	Ø31.75 (Ø1-1/4)	Ø31.75 (Ø1-1/4)	Ø31.75 (Ø1-1/4)	Ø31.75 (Ø1-1/4)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)
Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)
Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)
Cooling: -10°C (DB)~ +52°C (DB). Heating: -25°C (WB)~ +18°C (WB)											
62.5	63.5	63.5	64.0	63.0	64.0	64.0	64.5	65.0	65.5	65.5	66.0
57.5	58.5	58.5	59.0	58.0	59.0	59.0	59.5	60.0	60.5	60.5	61.0
83.5	84.5	84.5	85.0	84.0	85.0	85.0	85.5	86.0	86.5	86.5	87.0

2-PIPE FSV-EX ME2 Series

SPACE SAVING COMBINATION MODEL

Appearance													
kW			22.4	28.0	33.5	40.0	45.0	50.0	56.0	61.5	68.0		
Model name			U-8ME2R8	U-10ME2R8	U-12ME2R8	U-14ME2R8	U-16ME2R8	U-18ME2R8	U-20ME2R8	U-10ME2R8 U-12ME2R8	U-12ME2R8 U-12ME2R8		
Power supply			400V/415V/3-phase/50Hz										
Capacity	Cooling	kW	22.4	28.0	33.5	40.0	45.0	50.0	56.0	61.5	68.0		
		BTU/h	76,500	95,600	114,300	136,500	153,600	170,600	191,100	209,900	232,100		
	Heating	kW	25.0	31.5	37.5	45.0	50.0	56.0	63.0	69.0	76.5		
		BTU/h	85,300	107,500	128,000	153,600	170,600	191,100	215,000	235,500	261,100		
EER / COP	Cooling	W/W	4.70	4.37	3.96	3.88	3.52	3.38	3.01	4.13	3.93		
	Heating	W/W	5.13	4.76	4.73	4.56	4.42	4.38	3.94	4.76	4.69		
Dimensions	H x W x D	mm	1,842 x 770 x 1,000	1,842 x 770 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,540 x 1,000	1,842 x 1,540 x 1,000	1,842 x 2,010 x 1,000	1,842 x 2,420 x 1,000		
Net weight		kg	220	220	270	315	315	375	375	490	540		
Electrical ratings	Cooling	Running current	A	7.40 / 7.14	10.2 / 9.80	13.0 / 12.5	16.5 / 15.9	20.1 / 19.4	23.0 / 22.1	28.3 / 27.2	23.1 / 22.3	26.6 / 25.6	
		Power input	kW	4.77	6.41	8.47	10.3	12.8	14.8	18.6	14.9	17.3	
	Heating	Running current	A	7.56 / 7.29	10.5 / 10.1	12.3 / 11.9	15.8 / 15.2	17.9 / 17.3	20.1 / 19.4	24.6 / 23.7	22.7 / 21.9	25.3 / 24.4	
		Power input	kW	4.87	6.62	7.92	9.86	11.3	12.8	16.0	14.5	16.3	
Starting current		A	1	1	1	2	2	2	2	2	2		
Air flow rate	m³/h		13,440	13,440	13,920	13,920	13,920	24,300	24,300	27,360	27,840		
	L/s		3,733	3,733	3,866	3,866	3,866	6,750	6,750	7,600	7,733		
Refrigerant amount at shipment		kg	11.1	11.1	11.3	11.3	11.3	11.0	11.0	22.4	22.6		
External static pressure		Pa	80	80	80	80	80	80	80	80	80		
Piping connections	Gas pipe	mm (inches)	Ø19.05 (Ø3/4)	Ø22.22 (Ø7/8)	Ø25.40 (Ø1)	Ø25.40 (Ø1)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)		
	Liquid pipe	mm (inches)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)	Ø12.70 (Ø1/2)	Ø12.70 (Ø1/2)	Ø12.70 (Ø1/2)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)		
	Balance pipe	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)		
Ambient temperature operating range			Cooling: -10°C (DB)~ +52°C (DB). Heating: -25°C (WB)~ +18°C (WB)										
Sound pressure level	Normal mode	dB (A)	54.0	56.0	59.0	60.0	61.0	59.0	60.0	61.0	62.0		
	Silent mode (2)	dB (A)	49.0	51.0	54.0	55.0	56.0	54.0	55.0	56.0	57.0		
Sound power level	Normal mode	dB	75.0	77.0	80.0	81.0	82.0	80.0	81.0	82.0	83.0		

Appearance											
kW			140.0	145.0	151.0	156.0	162.0	168.0	174.0	180.0	185.0
Model name			U-14ME2R8 U-16ME2R8 U-20ME2R8	U-16ME2R8 U-16ME2R8 U-20ME2R8	U-14ME2R8 U-20ME2R8 U-20ME2R8	U-16ME2R8 U-20ME2R8 U-20ME2R8	U-18ME2R8 U-20ME2R8 U-20ME2R8	U-20ME2R8 U-20ME2R8 U-20ME2R8	U-14ME2R8 U-16ME2R8 U-16ME2R8	U-16ME2R8 U-16ME2R8 U-16ME2R8	U-16ME2R8 U-16ME2R8 U-20ME2R8
Power supply			400/415V/3-phase/50Hz								
Capacity	Cooling	kW	140.0	145.0	151.0	156.0	162.0	168.0	174.0	180.0	185.0
		BTU/h	477,800	494,900	515,400	532,400	552,900	573,400	593,700	614,200	631,200
	Heating	kW	155.0	160.0	169.0	175.0	182.0	189.0	195.0	201.0	207.0
		BTU/h	529,000	546,100	576,800	597,300	621,200	645,100	665,300	686,000	706,300
EER / COP	Cooling	W/W	3.39	3.32	3.21	3.15	3.12	3.01	3.60	3.52	3.28
	Heating	W/W	4.29	4.27	4.11	4.08	4.06	3.94	4.45	4.42	4.16
Dimensions	H x W x D	mm	1,842 x 4,020 x 1,000	1,842 x 4,020 x 1,000	1,842 x 4,380 x 1,000	1,842 x 4,380 x 1,000	1,842 x 4,740 x 1,000	1,842 x 4,740 x 1,000	1,842 x 4,900 x 1,000	1,842 x 4,900 x 1,000	1,842 x 5,210 x 1,000
Net weight		kg	1,005	1,005	1,065	1,065	1,125	1,125	1,260	1,260	1,285
Electrical ratings	Cooling	Running current	A	64.1 / 61.8	67.8 / 65.4	72.2 / 69.6	76.0 / 73.3	79.8 / 77.0	84.8 / 81.7	75.8 / 73.0	80.3 / 77.4
		Power input	kW	41.3	43.7	47.0	49.5	52.0	55.8	48.3	51.2
	Heating	Running current	A	56.6 / 54.6	58.8 / 56.7	63.8 / 61.5	66.6 / 64.2	69.5 / 67.0	73.7 / 71.0	69.5 / 67.0	72.2 / 69.6
		Power input	kW	36.1	37.5	41.1	42.9	44.8	48.0	43.8	45.5
Starting current	A	6	6	6	6	6	6	8	8	7	
Air flow rate	m³/h	52,140	52,140	62,520	62,520	72,900	72,900	55,680	55,680	75,960	
	L/s	14,483	14,483	17,366	17,366	20,250	20,250	15,466	15,466	21,100	
Refrigerant amount at shipment	kg	33.6	33.6	33.3	33.3	33.0	33.0	45.2	45.2	44.4	
External static pressure	Pa	80	80	80	80	80	80	80	80	80	
Piping connections	Gas pipe	mm (inches)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	
	Liquid pipe	mm (inches)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	
	Balance pipe	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	
Ambient temperature operating range			Cooling: -10°C (DB)~ +52°C (DB). Heating: -25°C (WB)~ +18°C (WB)								
Sound pressure level	Normal mode	dB (A)	65.5	65.5	65.0	65.5	64.5	65.0	67.0	67.0	66.0
	Silent mode (2)	dB (A)	60.5	60.5	60.0	60.5	59.5	60.0	62.0	62.0	61.0
Sound power level	Normal mode	dB	86.5	86.5	86.0	86.5	85.5	86.0	88.0	88.0	87.0



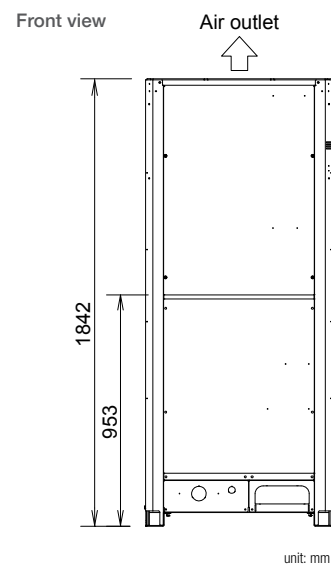
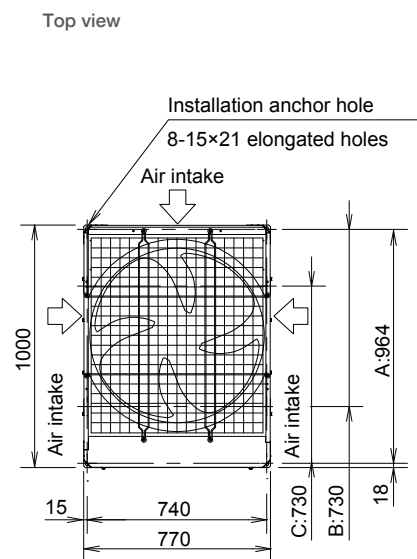
											
73.0	78.5	85.0	90.0	96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0
U-10ME2R8 U-16ME2R8	U-12ME2R8 U-16ME2R8	U-14ME2R8 U-16ME2R8	U-16ME2R8 U-16ME2R8	U-14ME2R8 U-20ME2R8	U-16ME2R8 U-20ME2R8	U-18ME2R8 U-20ME2R8	U-20ME2R8 U-20ME2R8	U-10ME2R8 U-16ME2R8 U-16ME2R8	U-12ME2R8 U-16ME2R8 U-16ME2R8	U-14ME2R8 U-16ME2R8 U-16ME2R8	U-16ME2R8 U-16ME2R8 U-16ME2R8
400V/415V/3-phase/50Hz											
73.0	78.5	85.0	90.0	96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0
249,100	267,900	290,100	307,200	327,600	344,700	365,200	385,700	402,700	423,200	443,700	460,800
81.5	87.5	95.0	100.0	108.0	113.0	119.0	127.0	132.0	138.0	145.0	150.0
278,200	298,600	324,200	341,300	368,600	385,700	406,100	433,300	450,500	471,000	494,900	511,900
3.80	3.69	3.68	3.52	3.32	3.22	3.16	3.00	3.69	3.62	3.62	3.52
4.55	4.56	4.48	4.42	4.17	4.14	4.13	3.92	4.49	4.50	4.46	4.42
1,842 x 2,010 x 1,000	1,842 x 2,420 x 1,000	1,842 x 2,420 x 1,000	1,842 x 2,420 x 1,000	1,842 x 2,780 x 1,000	1,842 x 2,780 x 1,000	1,842 x 3,140 x 1,000	1,842 x 3,140 x 1,000	1,842 x 3,250 x 1,000	1,842 x 3,660 x 1,000	1,842 x 3,660 x 1,000	1,842 x 3,660 x 1,000
535	585	630	630	690	690	750	750	850	900	945	945
30.1 / 29.0	33.1 / 31.9	36.6 / 35.3	40.2 / 38.7	44.9 / 43.2	48.2 / 46.5	52.1 / 50.2	57.3 / 55.2	50.2 / 48.4	53.2 / 51.3	56.9 / 54.9	60.2 / 58.1
19.2	21.3	23.1	25.6	28.9	31.4	33.9	37.7	32.0	34.3	35.9	38.4
28.4 / 27.4	30.1 / 29.0	33.6 / 32.4	35.8 / 34.6	40.6 / 39.2	42.4 / 40.8	44.7 / 43.1	49.8 / 48.0	46.6 / 44.9	48.2 / 46.4	51.5 / 49.7	53.8 / 51.8
17.9	19.2	21.2	22.6	25.9	27.3	28.8	32.4	29.4	30.7	32.5	33.9
3	3	4	4	4	4	4	4	5	5	6	6
27,360	27,840	27,840	27,840	38,220	38,220	48,600	48,600	41,280	41,760	41,760	41,760
7,600	7,733	7,733	7,733	10,616	10,616	13,500	13,500	11,466	11,600	11,600	11,600
22.4	22.6	22.6	22.6	22.3	22.3	22.0	22.0	33.7	33.9	33.9	33.9
80	80	80	80	80	80	80	80	80	80	80	80
031.75 (01-1/4)	031.75 (01-1/4)	031.75 (01-1/4)	031.75 (01-1/4)	031.75 (01-1/4)	038.10 (01-1/2)	038.10 (01-1/2)	038.10 (01-1/2)	038.10 (01-1/2)	038.10 (01-1/2)	038.10 (01-1/2)	038.10 (01-1/2)
019.05 (03/4)	019.05 (03/4)	019.05 (03/4)	019.05 (03/4)	019.05 (03/4)	019.05 (03/4)	019.05 (03/4)	019.05 (03/4)	019.05 (03/4)	019.05 (03/4)	019.05 (03/4)	019.05 (03/4)
06.35 (01/4)	06.35 (01/4)	06.35 (01/4)	06.35 (01/4)	06.35 (01/4)	06.35 (01/4)	06.35 (01/4)	06.35 (01/4)	06.35 (01/4)	06.35 (01/4)	06.35 (01/4)	06.35 (01/4)
Cooling: -10°C (DB)~ +52°C (DB). Heating: -25°C (WB)~ +18°C (WB)											
62.5	63.5	63.5	64.0	63.0	63.5	62.5	63.0	65.0	65.5	65.5	66.0
57.5	58.5	58.5	59.0	58.0	58.5	57.5	58.0	60.0	60.5	60.5	61.0
83.5	84.5	84.5	85.0	84.0	84.5	83.5	84.0	86.0	86.5	86.5	87.0

U-8ME2R8
U-10ME2R8

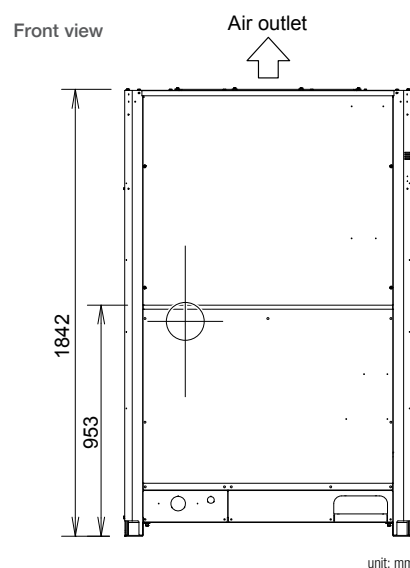
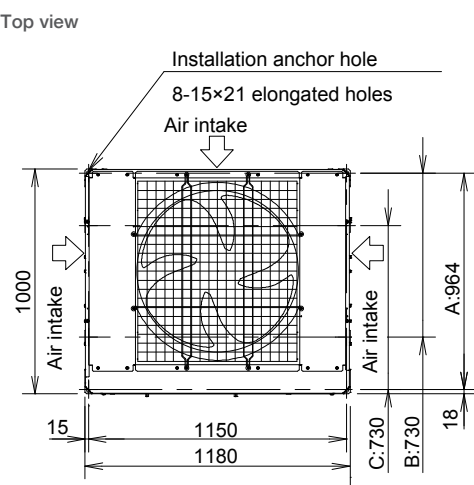
U-12ME2R8
U-14ME2R8
U-16ME2R8

U-18ME2R8
U-20ME2R8

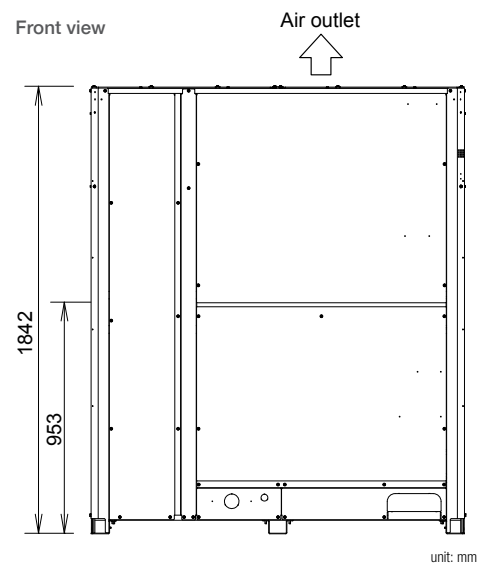
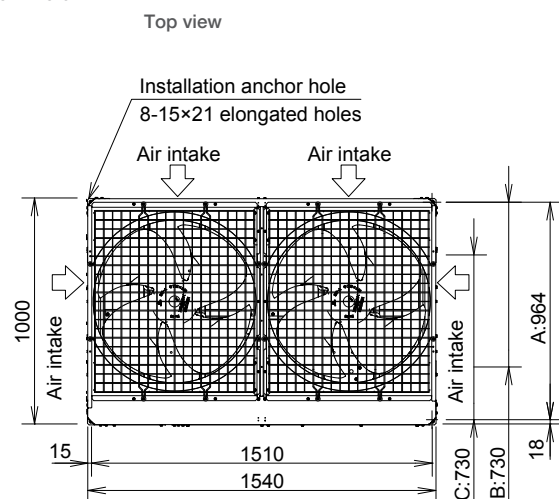
A: (Installation hole pitch) For removing pipe forward
B: (Installation hole pitch) For removing the tube downward
C: (Installation hole pitch)



A: (Installation hole pitch) For removing pipe forward
B: (Installation hole pitch) For removing the tube downward
C: (Installation hole pitch)

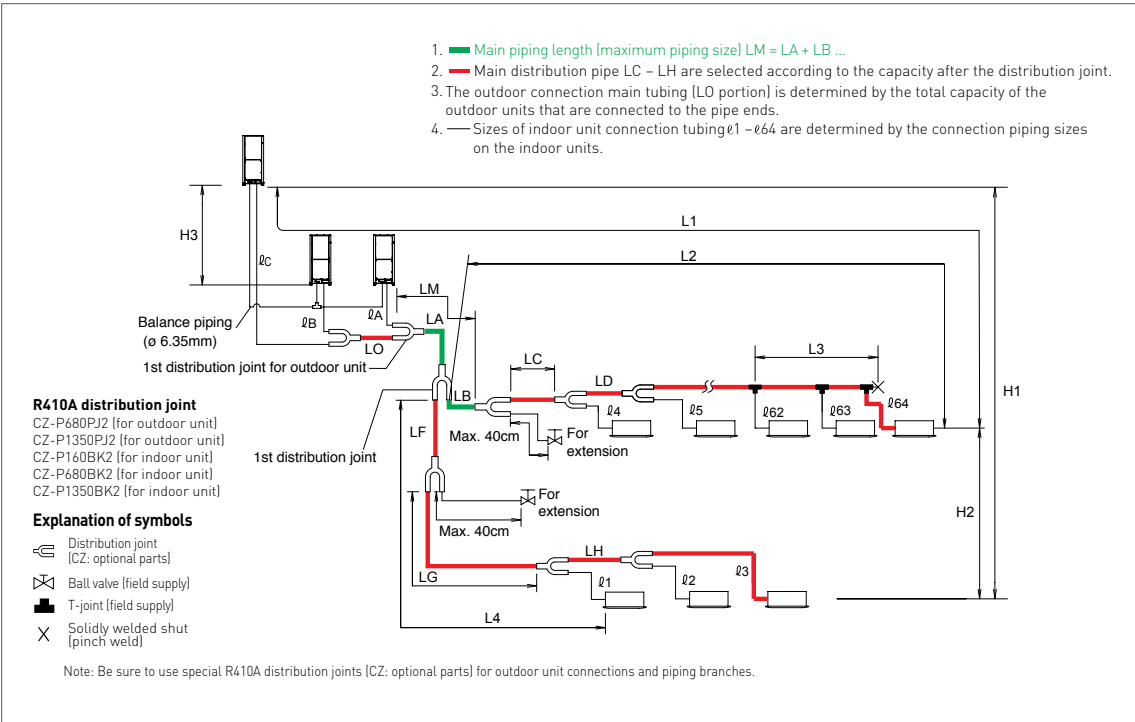


A: (Installation hole pitch) For removing pipe forward
B: (Installation hole pitch) For removing the tube downward
C: (Installation hole pitch)



Piping Design

Select installation locations so that the lengths and sizes of refrigerant piping are within the allowable ranges shown in the figure below.



Ranges that apply to refrigerant piping lengths and to differences in installation heights

Items	Mark	Contents	Length (m)
Allowable piping length	L1	Maximum piping length	≤200 ^{*2}
		Equivalent length	≤210 ^{*2}
	Δ L (L2-L4)	Difference between max. length and minimum length from the 1st distribution joint	≤50 ^{*5}
	LM	Maximum length of main piping (at maximum size) * Even after 1st distribution joint, LM is allowed if at maximum piping length.	— ^{*3}
	ℓ1, ℓ2~ ℓ64	Maximum length of each distribution pipe	≤30 ^{*7}
	L1+ ℓ1+ ℓ2~ ℓ63+ ℓA+ ℓB+LF+LG+LH	Total maximum piping length including length of each distribution pipe (only liquid tubing)	≤1000
Allowable elevation difference	ℓA, ℓB+LO, ℓC+LO	Maximum piping length from outdoor's 1st distribution joint to each outdoor unit	≤10
	H1	When outdoor unit is installed higher than indoor unit	≤50
	H2	When outdoor unit is installed lower than indoor unit	≤40
	H3	Maximum difference between indoor units	≤15 ^{*6}
Allowable length of joint tubing	L3	T-joint piping (field-supply); Max. piping length between the first T-joint and solidly welded-shut end point	≤2

L = Length, H = Height

NOTE

- The outdoor connection main piping (LO portion) is determined by the total capacity of the outdoor units that are connected to the pipe ends.
- If the longest piping length (L1) exceeds 90m (equivalent length), increase the sizes of the main pipe (LM) by 1 rank for gas pipe and liquid pipe. Use a field supply reducer. Select the pipe size from the table of main piping sizes (Table 3) and from the table of refrigerant piping sizes (Table 8) on the second following page.
- If the longest main piping length (LM) exceeds 50m, increase the main piping size at the portion before 50m by 1 rank for the gas pipe. Use a field supply reducer.
Determine the length less than the limitation of allowable maximum piping length. For the portion that exceeds 50m, set based on the main piping size (LA) listed in Table 3.
- If the size of the existing piping is already larger than the standard piping size, it is not necessary to further increase the size.
* If the existing piping is used, and the amount of on-site refrigerant charge exceeds the value listed below, then change the size of the piping to reduce the amount of refrigerant.
Total amount of refrigerant for the system with 1 outdoor unit: 50kg
Total amount of refrigerant for the system with 2 outdoor units: 80kg
Total amount of refrigerant for the system with 3 outdoor units or 4 outdoor units: 105kg
- When the piping length exceeds 40m, increase a longer liquid or gas piping by 1 rank. Refer to the Technical Data for the details.
- If the total distribution piping length exceeds 500m, maximum allowable elevation difference (H2) between the indoor units is calculated by the following formula. Make sure the indoor unit's actual elevation difference should fall within the figure calculated as follows.
Unit of account (metre): $15 \times (2 - \text{total piping length(m)} \div 500)$
- If any of the piping length exceeds 30m, increase the size of the liquid and gas pipe by 1 rank.

Necessary amount of additional refrigerant charge per outdoor unit

U-8ME2R8	U-10ME2R8	U-12ME2R8	U-14ME2R8	U-16ME2R8	U-18ME2R8	U-20ME2R8
0kg	0kg	4.0kg	4.0kg	4.0kg	5.5kg	5.5kg

System limitations

Max. No. allowable connected outdoor units	4 ^{*2}
Max. capacity allowable connected outdoor units	224kW (80HP)
Max. connectable indoor units	64 ^{*1}
Max. allowable indoor/outdoor capacity ratio	50-130 % ^{*3}

- ^{*1}: In the case of 107.0kW or smaller units, the number is limited by the total capacity of the connected indoor units.
^{*2}: Up to 4 units can be connected if the system has been extended.
^{*3}: If the following conditions are satisfied, the effective range is above 130% and below 200%.
i) Obey the limited number of connectable indoor units.
ii) The lower limit of operating range for heating outdoor temperature is limited to -10°CWB (standard -25°CWB).
iii) Simultaneous operation is limited to less than 130% of connectable indoor units.

Additional refrigerant charge

Liquid piping size mm (inches)	Amount of refrigerant charge/m (g/m)
ø6.35 (ø1/4)	26
ø9.52 (ø3/8)	56
ø12.7 (ø1/2)	128
ø15.88 (ø5/8)	185
ø19.05 (ø3/4)	259
ø22.22 (ø7/8)	366
ø25.4 (ø1)	490

Refrigerant piping (Existing piping can be used.)

Piping size (mm)	Material Temper - O	ø6.35	ø9.52	ø12.7	ø15.88	ø19.05		
		t 0.8	t 0.8	t 0.8	t 1.0	t 1.2		
	Material Temper - 1/2 H, H	ø22.22	ø25.4	ø28.58	ø31.75	ø38.1	ø41.28	ø44.45
		t 1.0	t 1.0	t 1.0	t 1.1	over t 1.35	over t 1.45	over t1.55

* When bending the pipes, use a bending radius that is at least 4 times the outer diameter of the pipes.
In addition, take sufficient care to avoid crushing or damaging the pipes when bending them.



Refrigerant Branch Pipes (accessories) for 2-PIPE ME2 Series

See the installation instructions packaged with the refrigerant branch pipes for the installation procedure.

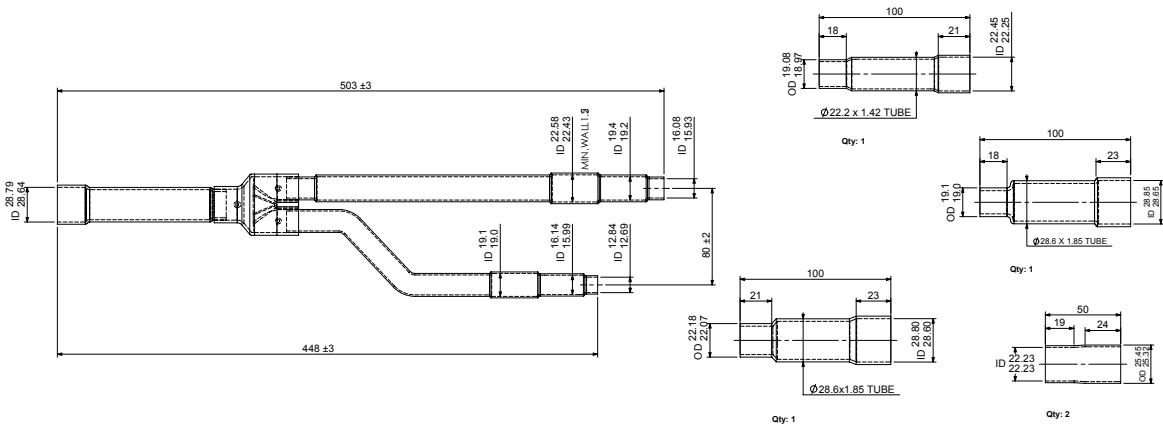
Model name	Cooling capacity after distribution	Remarks
1. CZ-P680PJ2	68.0kW or less	For outdoor unit
2. CZ-P1350PJ2	168.0kW or less	For outdoor unit
3. CZ-P160BK2	22.4kW or less	For indoor unit
4. CZ-P680BK2	68.0kW or less	For indoor unit
5. CZ-P1350BK2	168.0kW or less	For indoor unit

Piping size (with thermal insulation)

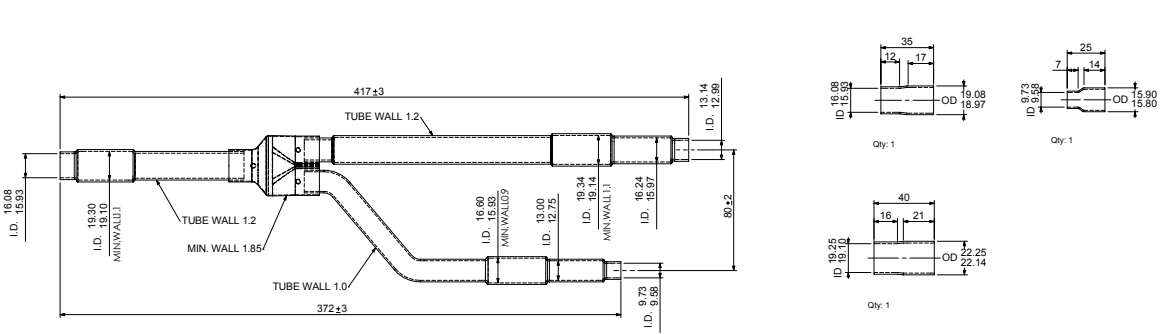
1. CZ-P680PJ2

Use: For outdoor unit
(Capacity after refrigerant branch pipe is 68.0kW or less.)

GAS PIPING



LIQUID PIPING

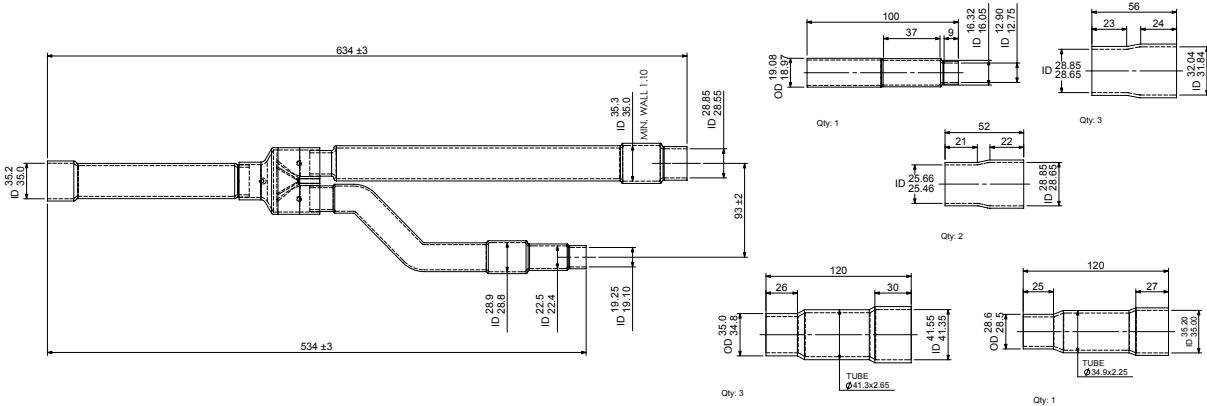


All measurements are in mm. Size of connection points on each part shown are inside diameters of piping.

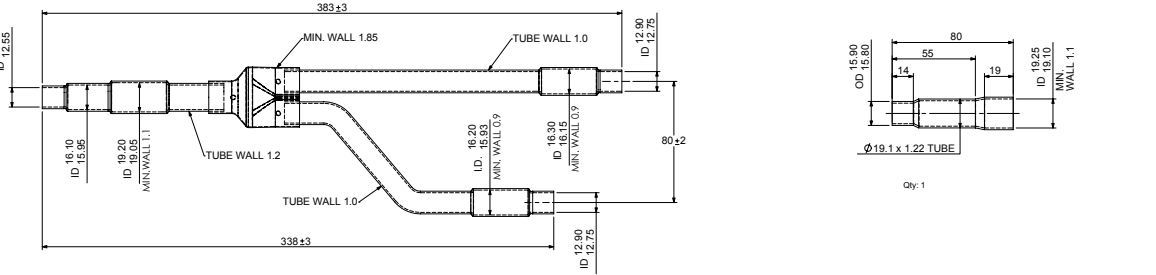
2. CZ-P1350PJ2

Use: For outdoor unit (Capacity after refrigerant branch pipe is greater than 68.0kW and no more than 168.0kW.)

GAS PIPING



LIQUID PIPING

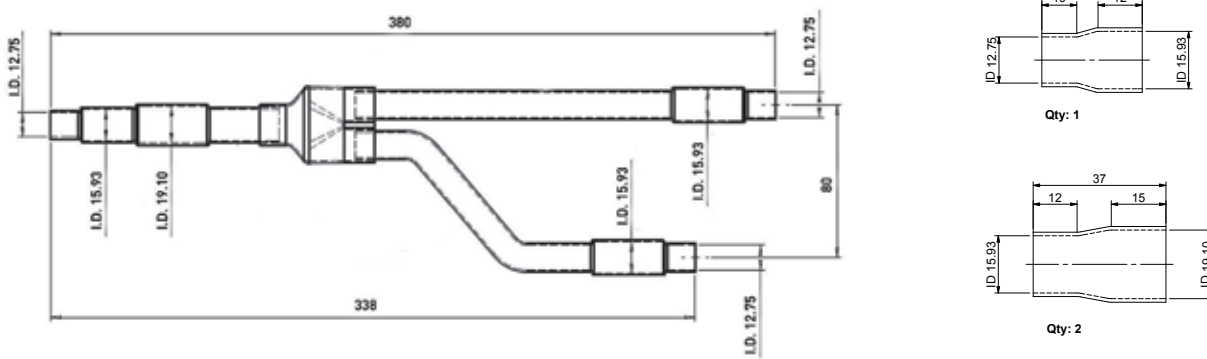


All measurements are in mm. Size of connection points on each part shown are inside diameters of piping.

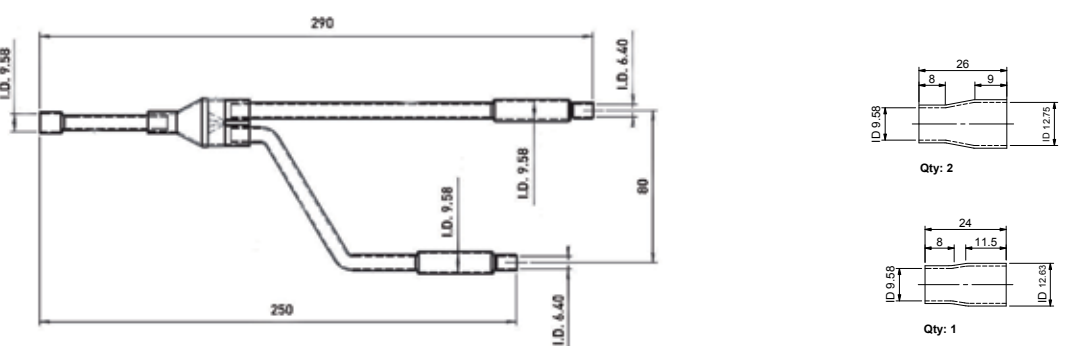
3. CZ-P160BK2

Use: For indoor unit (Capacity after refrigerant branch pipe is 22.4kW or less.)

GAS PIPING



LIQUID PIPING



All measurements are in mm. Size of connection points on each part shown are inside diameters of piping.

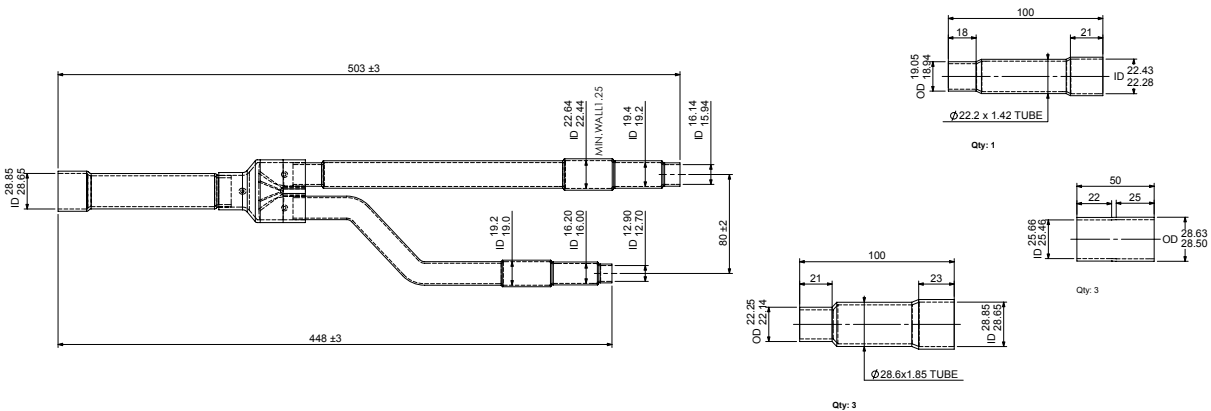
Refrigerant Branch Pipes (accessories) for 2-PIPE ME2 Series

Piping size (with thermal insulation)

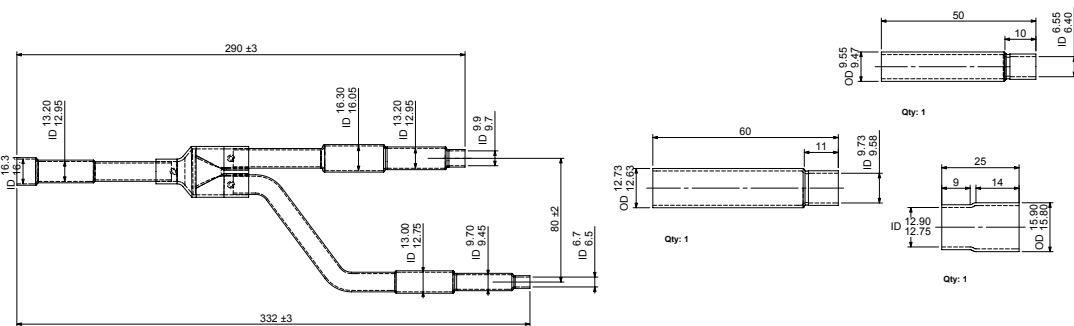
4. CZ-P680BK2

Use: For indoor unit (Capacity after refrigerant branch pipe is more than 22.4kW and no more than 68.0kW.)

GAS PIPING



LIQUID PIPING

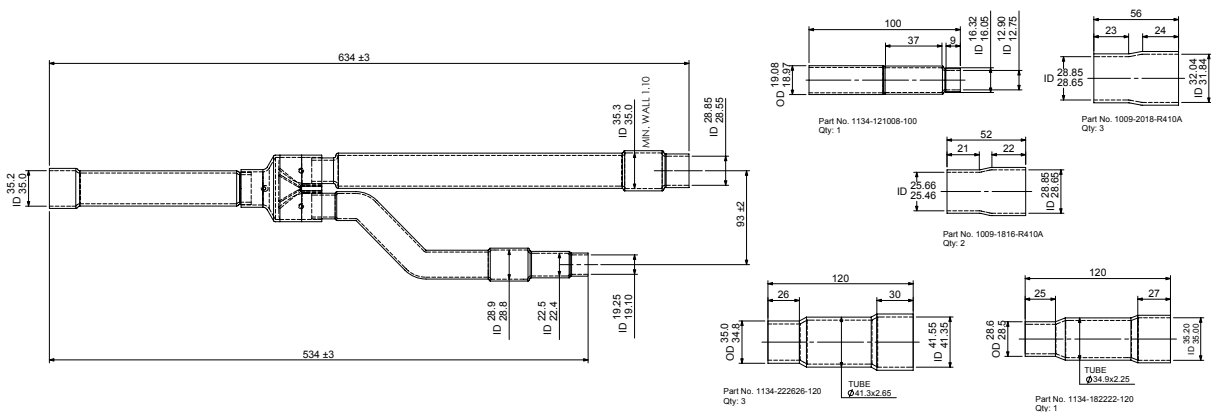


All measurements are in mm. Size of connection points on each part shown are inside diameters of piping.

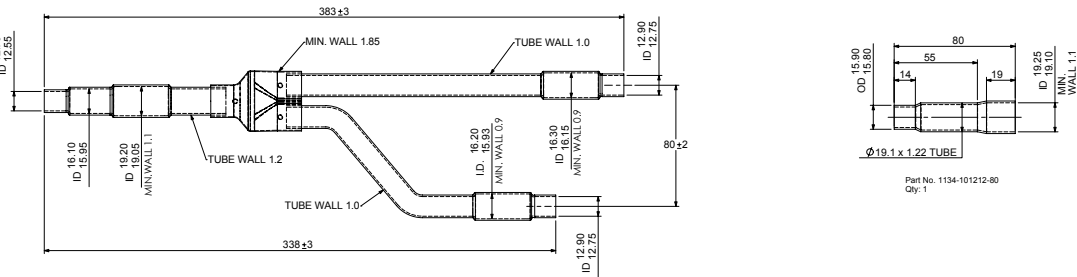
5. CZ-P1350BK2

Use: For indoor unit (Capacity after refrigerant branch pipe is greater than 68.0kW and no more than 168.0kW.)

GAS PIPING



LIQUID PIPING



All measurements are in mm. Size of connection points on each part shown are inside diameters of piping.

