

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	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	22.2	22.4	22.6	
External static pressure	Pa	80	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-20ME2R8 U-20ME2R8	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	86.6 / 83.5
		Power input	kW	41.3	43.7	47.0	49.5	52.0	55.8	48.3	51.2	56.4
	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	77.1 / 74.3
		Power input	kW	36.1	37.5	41.1	42.9	44.8	48.0	43.8	45.5	49.7
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)	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)	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)	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	



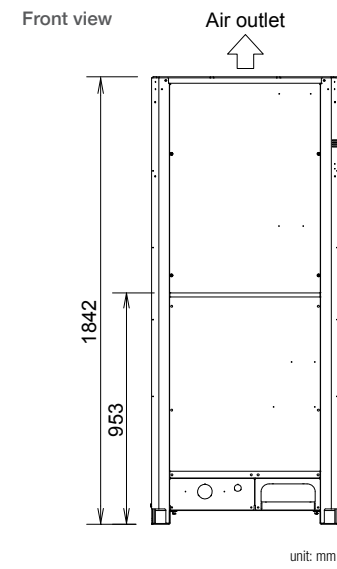
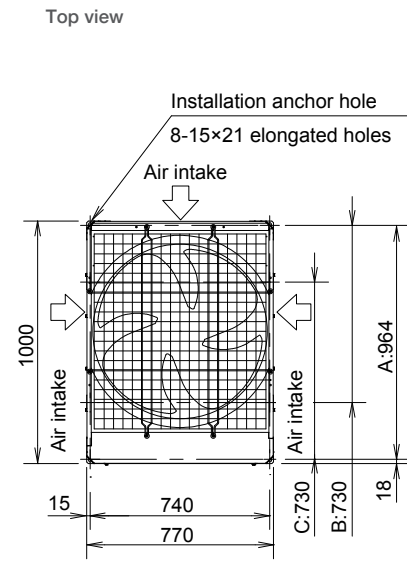
											
73.0	78.5	85.0	90.0	96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0
U-10ME2R8 U-16ME2R8	U-12ME2R8 U-16ME2R8	U-14ME2R8 U-16ME2R8	U-16ME2R8 U-16ME2R8	U-14ME2R8 U-20ME2R8	U-16ME2R8 U-20ME2R8	U-18ME2R8 U-20ME2R8	U-20ME2R8 U-20ME2R8	U-10ME2R8 U-16ME2R8 U-16ME2R8	U-12ME2R8 U-16ME2R8 U-16ME2R8	U-14ME2R8 U-16ME2R8 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
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	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

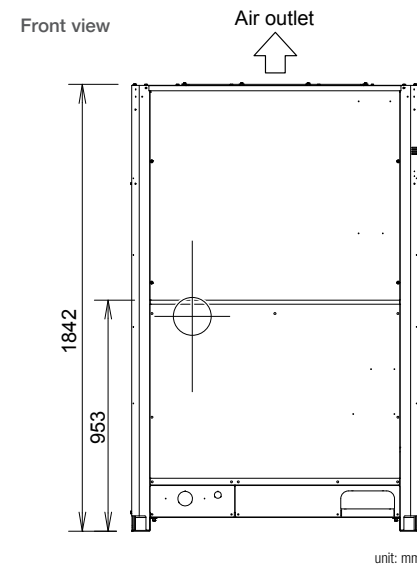
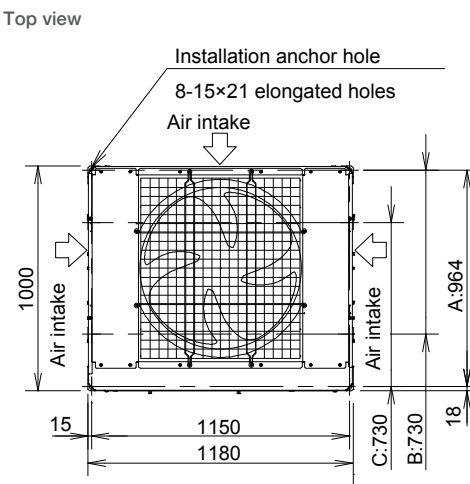
U-12ME2R8
U-14ME2R8
U-16ME2R8

U-18ME2R8
U-20ME2R8

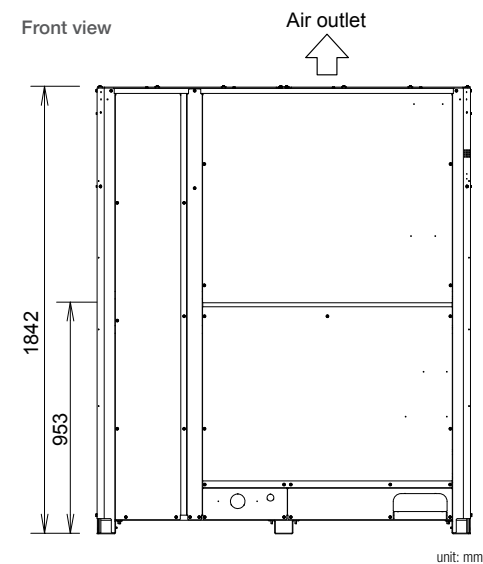
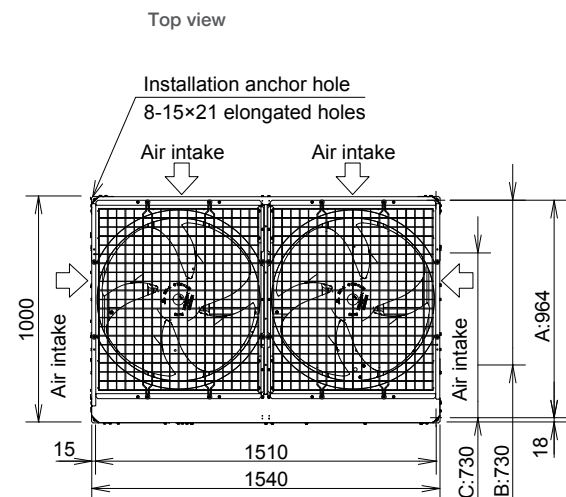
A: (Installation hole pitch) For removing pipe forward
B: (Installation hole pitch) For removing the tube downward
C: (Installation hole pitch)



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

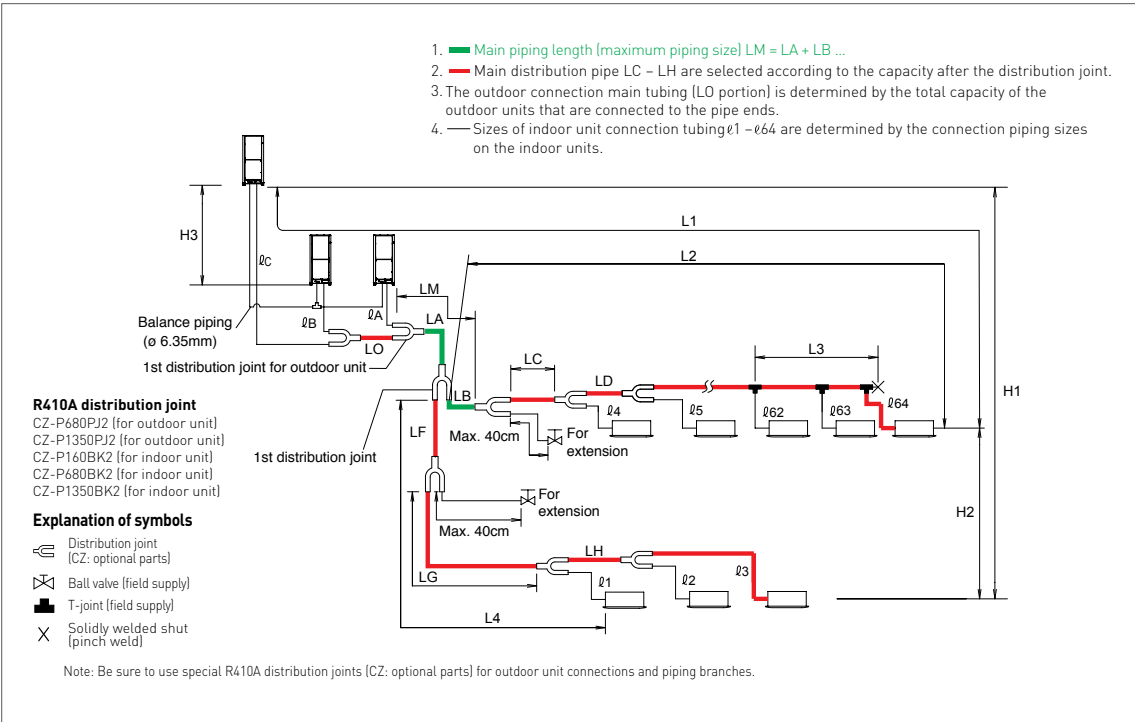


A: (Installation hole pitch) For removing pipe forward
B: (Installation hole pitch) For removing the tube downward
C: (Installation hole pitch)



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	Actual length $\leq 200^{*2}$
			Equivalent length $\leq 210^{*2}$
	ΔL (L2-L4)	Difference between max. length and minimum length from the 1st distribution joint	$\leq 50^{*5}$
	LM	Maximum length of main piping (at maximum size) * Even after 1st distribution joint, LM is allowed if at maximum piping length.	— ^{*3}
	$\varnothing 1, \varnothing 2 - \varnothing 64$	Maximum length of each distribution pipe	$\leq 30^{*7}$
	$L1 + \varnothing 1 + \varnothing 2 - \varnothing 63 + \varnothing A + \varnothing B + LF + LG + LH$	Total maximum piping length including length of each distribution pipe (only liquid tubing)	≤ 1000
Allowable elevation difference	$\varnothing A, \varnothing B + LO, \varnothing C + LO$	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	$\leq 15^{*6}$
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)
$\varnothing 6.35$ ($\varnothing 1/4$)	26
$\varnothing 9.52$ ($\varnothing 3/8$)	56
$\varnothing 12.7$ ($\varnothing 1/2$)	128
$\varnothing 15.88$ ($\varnothing 5/8$)	185
$\varnothing 19.05$ ($\varnothing 3/4$)	259
$\varnothing 22.22$ ($\varnothing 7/8$)	366
$\varnothing 25.4$ ($\varnothing 1$)	490

Refrigerant piping (Existing piping can be used.)

Piping size (mm)	Material Temper - O	$\varnothing 6.35$	$\varnothing 9.52$	$\varnothing 12.7$	$\varnothing 15.88$	$\varnothing 19.05$		
		t 0.8	t 0.8	t 0.8	t 1.0	t 1.2		
	Material Temper - 1/2 H, H	$\varnothing 22.22$	$\varnothing 25.4$	$\varnothing 28.58$	$\varnothing 31.75$	$\varnothing 38.1$	$\varnothing 41.28$	$\varnothing 44.45$
		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.



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	1680.0kW or less	For indoor unit

1. CZ-P680PJ2

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

Technical drawing of a 100' long 28.6 inch diameter steel pipe. The main drawing shows the pipe with various fittings and dimensions. The total length is 100' ± 3. The pipe has a nominal wall thickness of 0.1875 inches. The drawing includes the following dimensions and specifications:

- Overall length: 100' ± 3
- End fittings: 28.6 inch diameter, 0.1875 inch wall thickness
- Intermediate fittings: 28.6 inch diameter, 0.1875 inch wall thickness
- Dimensions: 18, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
- Material: 304/316 SS
- Quantity: 1

[illegible]

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

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

Technical drawing of a 3-way manifold assembly. The main assembly drawing shows a central manifold with three outlets. Dimensions include a total length of 634 ±3, a distance of 534 ±3 from the inlet to the first outlet, and a distance of 93 ±2 from the manifold to the end of the longest outlet. The inlet has an outer diameter (OD) of 35.2 and an inner diameter (ID) of 35.0. The manifold has an ID of 28.9. The three outlets have different lengths and diameters: the top outlet has an ID of 35.3 and a minimum wall thickness of 1.10; the bottom-left outlet has an ID of 28.8; the bottom-right outlet has an ID of 22.4. The end of the longest outlet has an ID of 19.25 and a distance of 13.10 from the manifold. The end of the shortest outlet has an ID of 28.85 and a distance of 28.25 from the manifold. Three detailed views are provided: Qty: 1 shows a section of the manifold with dimensions 100, 37, 9, 16.32, 16.05, 12.80, 12.75, and diameters 19.08, 18.57, 16.32, 16.05; Qty: 2 shows a section of the manifold with dimensions 52, 21, 22, 25.66, 25.46, 26.66, 26.66, 26.66, 26.66; Qty: 3 shows a section of the manifold with dimensions 120, 28, 30, 41.55, 41.35, 28.6, 28.5, 120, 26, 27, 33.20, 33.20, and diameters 35.0, 34.4, 41.32, 41.25, 34.9, 34.25.

Technical drawing of a 1.22m tube assembly with a Y-junction. The drawing includes a side view and a cross-section.

Side View Dimensions:

- Overall length: 383±3
- Left section length: 338±3
- Right section length: 80±2
- Top diameters (left to right): ID 12.70, ID 12.85, ID 15.95, ID 16.20, ID 15.93, ID 16.30, ID 12.90, ID 12.75
- Wall thicknesses: MIN. WALL 1.85, TUBE WALL 1.0, TUBE WALL 1.2

Cross-section Dimensions:

- Outer Diameter (OD): 15.80
- Inner Diameter (ID): 19.10
- Tube Wall Thickness: 1.1
- Tube Wall Thickness: 1.0
- Tube Wall Thickness: 1.2
- Tube Wall Thickness: 1.85
- Tube Wall Thickness: 0.9
- Tube Wall Thickness: 0.7
- Tube Wall Thickness: 0.6
- Tube Wall Thickness: 0.5
- Tube Wall Thickness: 0.4
- Tube Wall Thickness: 0.3
- Tube Wall Thickness: 0.2
- Tube Wall Thickness: 0.1
- Tube Wall Thickness: 0.0

Qty: 1

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.)

Qty: 1

Qty: 2

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

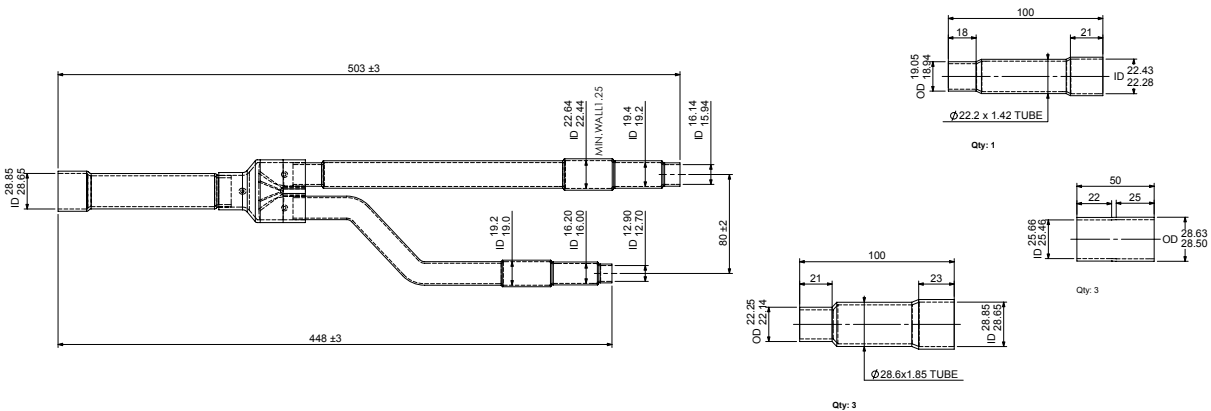
Refrigerant Branch Pipes (accessories) for 2-PIPE ME2 Series

Piping size (with thermal insulation)

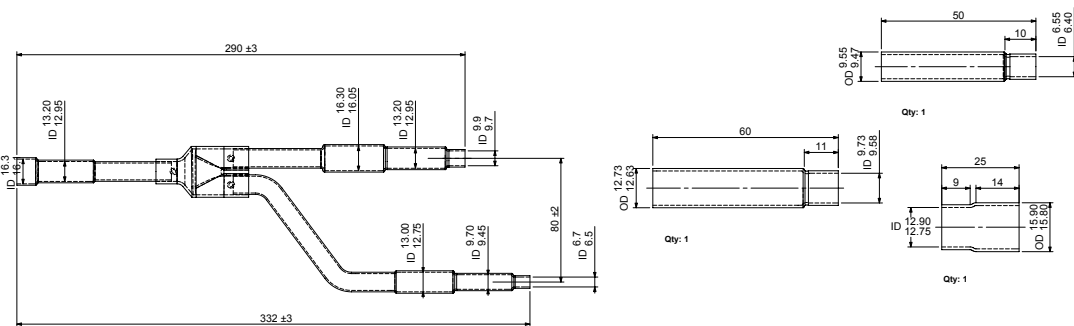
4. CZ-P680BK2

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

GAS PIPING



LIQUID PIPING

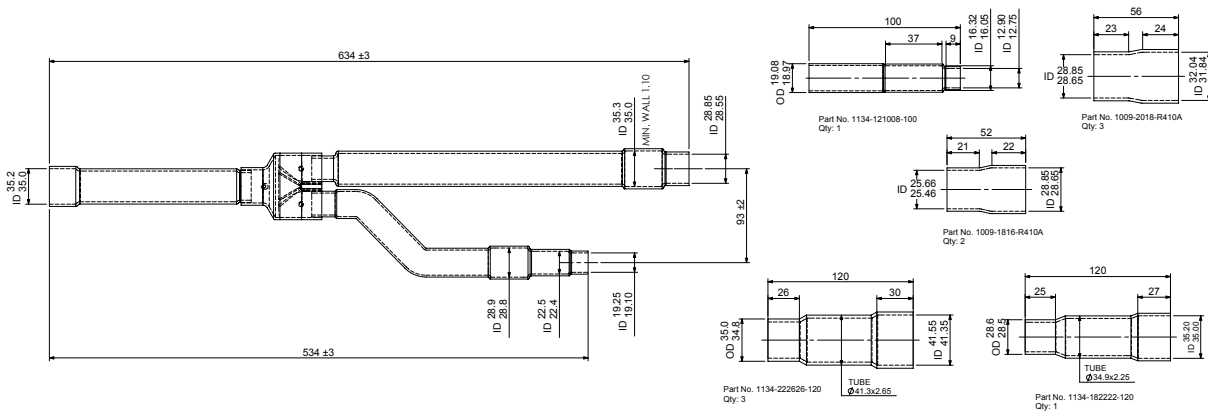


All measurements are in mm. Size of connection points on each part shown are inside diameters of piping.

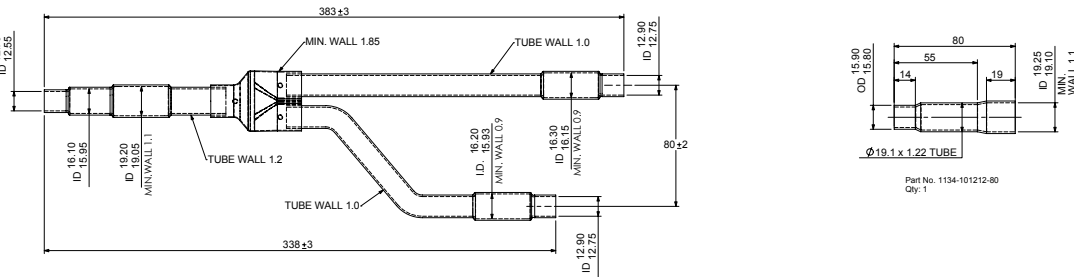
5. CZ-P1350BK2

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.

