

SHRMe Refrigerant Saving Installation

TOSHIBA are pleased to announce the technical information of "SHRMe refrigerant saving installation". This technical information details liquid main pipe size for refrigerant saving installation and compliance conditions.

1. Guidance

- Installation Manual and Data Engineering Book are subject to revision and updated documents will be issued when completed.
- Standard materials supplied with the current outdoor units do not include required sockets. These pipe reducers must be procured locally to enable downsizing of main liquid pipe. These items are detailed in this bulletin.
- Outdoor unit Line-up for both single and combinations remain unchanged.
- Saving installation enables the reduction of the main liquid line size from outdoor to first Y joint subject to ③ Main Piping.
- Refrigerant saving installation option is already included in the latest release software Selection tool version v1.2.46.

2. Line-up (No Change)

HP	Appearance	Model Name	Module
8		MMY-MAP0806FT8P-UK	8
10		MMY-MAP1006FT8P-UK	10
12		MMY-MAP1206FT8P-UK	12
14		MMY-MAP1406FT8P-UK	14
16		MMY-MAP1606FT8P-UK	16
18		MMY-MAP1806FT8P-UK	18
20		MMY-MAP2006FT8P-UK	20
22		MMY-AP2216FT8P-UK	12+10
24		MMY-AP2416FT8P-UK	14+10
26		MMY-AP2616FT8P-UK	14+12
28		MMY-AP2816FT8P-UK	14+14
30		MMY-AP3016FT8P-UK	16+14
32		MMY-AP3216FT8P-UK	18+14
34		MMY-AP3416FT8P-UK	18+16
36		MMY-AP3616FT8P-UK	18+18
38		MMY-AP3816FT8P-UK	20+18
40		MMY-AP4016FT8P-UK	20+20
42		MMY-AP4216FT8P-UK	14+14+14

3. Additional refrigerant volume calculation

Calculation of additional refrigerant charge volume will remain unchanged as shown table below.

Heat recovery model	8HP	10HP	12HP	14HP	16HP	18HP	20HP
Refrigerant amount charged in factory	11.0 kg	11.0 kg	11.0 kg	11.0 kg	11.0 kg	11.0 kg	11.0 kg

Additional refrigerant charge amount at site	=	Real length of liquid pipe	x	Additional refrigerant charge amount per liquid pipe 1 m (Table 1)	x	1.3 + Compensation by corrective of refrigerant by system HP (Table 2)
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Table 1

Pipe dia. at liquid side (mm)	Ø 6.4	Ø 9.5	Ø 12.7	Ø 15.9	Ø 19.1	Ø 22.2
Additional refrigerant amount / 1 m	0.025 kg	0.055 kg	0.105 kg	0.160 kg	0.250 kg	0.350 kg

Table 2

Equivalent HP	Model name of outdoor unit MMY-	Combination of outdoor unit MMY-			Corrective of refrigerant
		Unit 1	Unit 2	Unit 3	
8HP	MAP0806FT8P-UK	MAP0806FT8P-UK	-	-	2
10HP	MAP1006FT8P-UK	MAP1006FT8P-UK	-	-	3
12HP	MAP1206FT8P-UK	MAP1206FT8P-UK	-	-	8
14HP	MAP1406FT8P-UK	MAP1406FT8P-UK	-	-	10
16HP	MAP1606FT8P-UK	MAP1606FT8P-UK	-	-	12
18HP	MAP1806FT8P-UK	MAP1806FT8P-UK	-	-	14
20HP	MAP2006FT8P-UK	MAP2006FT8P-UK	-	-	15
22HP	AP2216FT8P-UK	MAP1206FT8P-UK	MAP1006FT8P-UK	-	6
24HP	AP2416FT8P-UK	MAP1406FT8P-UK	MAP1006FT8P-UK	-	8
26HP	AP2616FT8P-UK	MAP1406FT8P-UK	MAP1206FT8P-UK	-	12
28HP	AP2816FT8P-UK	MAP1406FT8P-UK	MAP1406FT8P-UK	-	12
30HP	AP3016FT8P-UK	MAP1606FT8P-UK	MAP1406FT8P-UK	-	14
32HP	AP3216FT8P-UK	MAP1806FT8P-UK	MAP1406FT8P-UK	-	15
34HP	AP3416FT8P-UK	MAP1806FT8P-UK	MAP1606FT8P-UK	-	16
36HP	AP3616FT8P-UK	MAP1806FT8P-UK	MAP1806FT8P-UK	-	18
38HP	AP3816FT8P-UK	MAP2006FT8P-UK	MAP1806FT8P-UK	-	22
40HP	AP4016FT8P-UK	MAP2006FT8P-UK	MAP2006FT8P-UK	-	24
42HP	AP4216FT8P-UK	MAP1406FT8P-UK	MAP1406FT8P-UK	MAP1406FT8P-UK	14

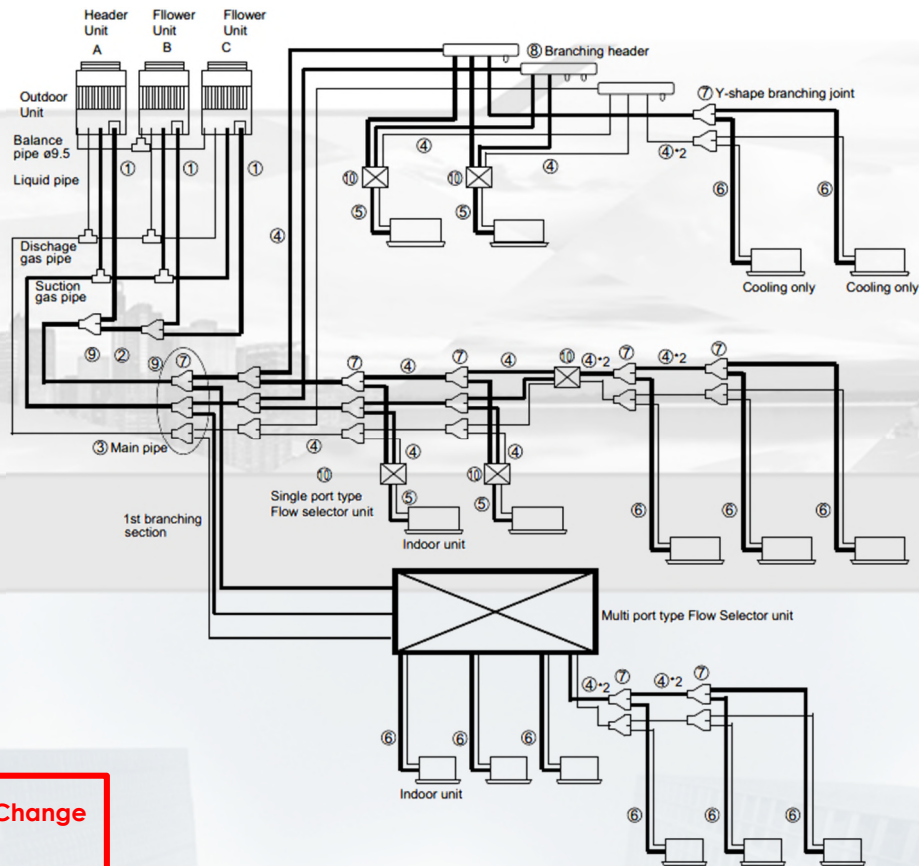
4. Main Liquid pipe size and refrigerant amount volume

Main Liquid pipe size and Additional refrigerant volume are shown table below in each standard and saving installation. In case of saving installation, Liquid Main Piping Length is shorter than standard installation. Also, the height between indoor and outdoor units is ≤ 30m.

HP	Main Liquid pipe size (mm)		Restriction for Saving installation (Max, m)		Additional charge volume (kg) * (Reference)	
	Standard	Saving	Main Liquid Piping length	Height diff. CDU and FCU	Standard	Saving
8	12.7	9.5	40	30	7.5	4.9
10	12.7	9.5	25		6.4	4.8
12	12.7	9.5	15		10.0	9.1
14	15.9	12.7	50		20.4	16.8
16	19.1	12.7	40		25.0	17.5
18	19.1	15.9	50		30.3	24.4
20					31.3	25.4
22					22.3	16.4
24					24.3	18.4
26	22.2	19.1			34.8	28.3
28					34.8	28.3
30					36.8	30.3
32					37.8	31.3
34					38.8	32.3
36		30			31.7	27.8
38					35.7	31.8
40					37.7	33.8
42					27.7	23.8

* Additional charge volume shown above is calculated based on maximum liquid piping length for saving installation.

5. Refrigerant piping design



Addition

Change

③ Main piping

Total capacity code outdoor units		Suction gas side (mm)	Discharge gas side	Standard (mm)	Liquid side	
Equivalent to capacity	Equivalent to HP				Saving * (mm)	(Max. length)
22.4 to below 28.0	8 to below 10	Ø 22.2	Ø 19.1	Ø 12.7	Ø 9.5	(40m)
28.0 to below 33.5	10 to below 12	Ø 22.2	Ø 19.1	Ø 12.7	Ø 9.5	(25m)
33.5 to below 38.4	12 to below 14	Ø 28.6	Ø 19.1	Ø 12.7	Ø 9.5	(15m)
38.4 to below 45.0	14 to below 16	Ø 28.6	Ø 22.2	Ø 15.9	Ø 12.7	(50m)
45.0 to below 50.4	16 to below 18	Ø 28.6	Ø 22.2	Ø 19.1	Ø 12.7	(40m)
50.4 to below 61.5	18 to below 22	Ø 28.6	Ø 22.2	Ø 19.1	Ø 15.9	(50m)
61.5 to below 73.0	22 to below 26	Ø 34.9	Ø 28.6	Ø 19.1	Ø 15.9	(50m)
73.0 to below 100.8	26 to below 36	Ø 34.9	Ø 28.6	Ø 22.2	Ø 19.1	(50m)
100.8 or more	36 or more	Ø 41.3	Ø 34.9	Ø 22.2	Ø 19.1	(30m)

⑦ Y-shaped branching joint

Current (Standard)

Total capacity code of indoor units	Equivalent to capacity kW	Equivalent to HP	Model name
Below 18.0	Below 6.4	For 3 piping	For 2 piping
18.0 to below 40.0	6.4 to below 14.2	RBM-BY55FE	RBM-BY55E
40.0 to below 70.5	14.2 to below 25.2	RBM-BY105FE	RBM-BY105E
70.5 or more	25.2 or more	RBM-BY205FE	RBM-BY205E
		RBM-BY305FE	RBM-BY305E

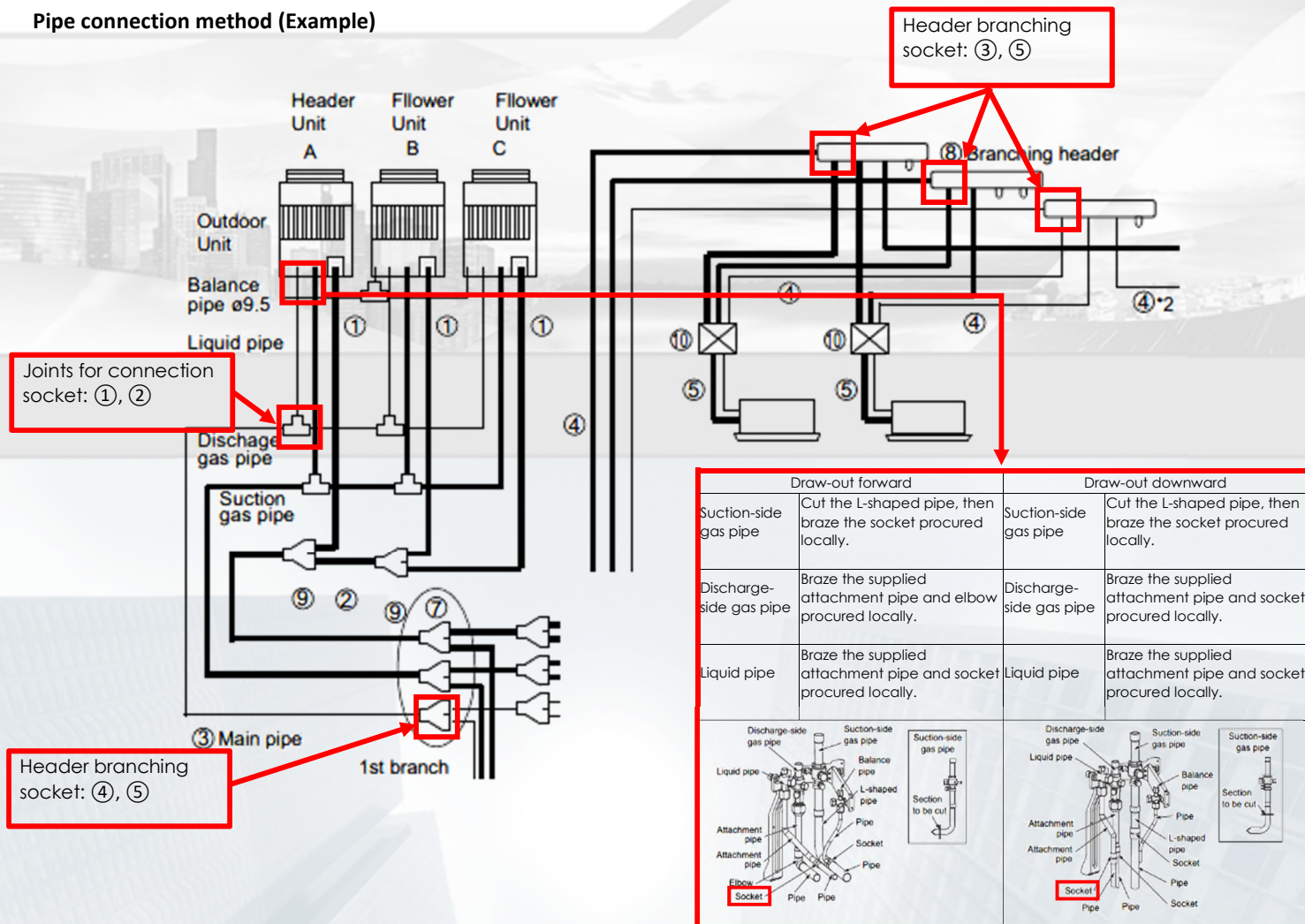
New (Both standard and saving installation)

Total capacity code indoor units	Equivalent to capacity kW	Equivalent to HP	Model name
Below 18.0	Below 6.4	For 3 piping	For 2 piping
18.0 to below 45.0	6.4 to below 16.1	RBM-BY55FE	RBM-BY55E
45.0 to below 70.5	16.1 to below 25.2	RBM-BY105FE	RBM-BY105E
70.5 or more	25.2 or more	RBM-BY205FE	RBM-BY205E
		RBM-BY305FE	RBM-BY305E

6. Additional parts required (local procurement)

Standard materials supplied with the current outdoor units do not include required sockets. These pipe reducers must be procured locally to enable downsizing of main liquid pipe. Please refer to the tables below for required items.

Pipe connection method (Example)

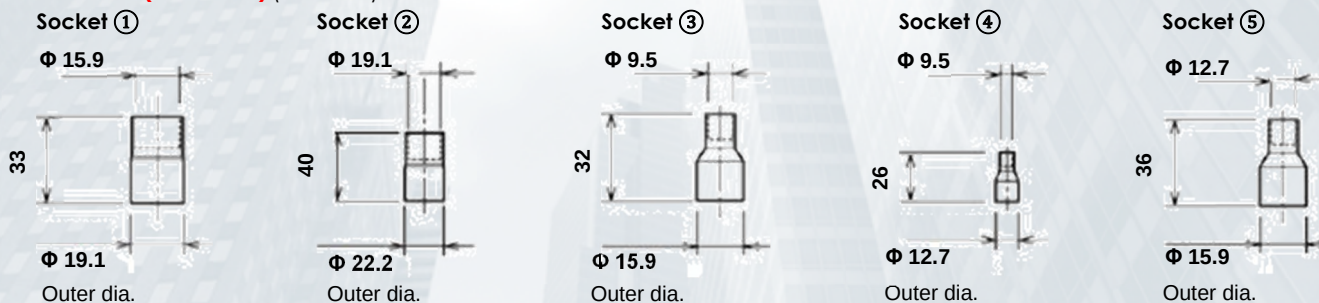


Item	HP	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
1) CDU liquid pipe		④	④	③	⑤	⑤													
2) Joints for connection									①						②	②	②	②	
3) Branching joint		④	④	④		⑤													
4) Headers branching				③	⑤														

Additional parts and quantity procured locally

① Socket	19.1 → 15.9mm									1									
② Socket	22.2 → 19.1mm														1	1	1	1	
③ Socket	15.9 → 9.5mm			2															
④ Socket	12.7 → 9.5mm	2	2	1															
⑤ Socket	15.9 → 12.7mm				2	2													

Socket dimension (Reference) (Unit: mm)



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7. Specification



Standard model (50Hz/380~415V)

Model name			Heat	MMY-MAP0806FT8P-UK	MMY-MAP1006FT8P-UK	MMY-MAP1206FT8P-UK	MMY-MAP1406FT8P-UK
Outdoor unit type				Inverter unit	Inverter unit	Inverter unit	Inverter unit
Cooling capacity (*1)		Nominal.	kW	22.4	28.0	33.5	40.0
Heating capacity (*1)		Nominal.	kW	22.4	28.0	33.5	40.0
		Maximum.	kW	25.0	31.5	37.5	45.0
Capacity range			HP	8	10	12	14
Power supply				3N~ 50Hz 400V(380-415V)	3N~ 50Hz 400V(380-415V)	3N~ 50Hz 400V(380-415V)	3N~ 50Hz 400V(380-415V)
Voltage range (*2)		Minimum	V	342	342	342	342
		Maximum	V	456	456	456	456
Electrical characteristic (*1)	Cooling	Running current	A	9.44	12.49	15.46	19.92
		Power input	kW	5.95	7.96	9.75	12.70
		EER	kW/kW	3.76	3.51	3.43	3.14
	Heating	Running current	A	8.57	11.06	13.80	16.47
		Power input	kW	5.40	7.05	8.70	10.50
		COP	kW/kW	4.14	3.97	3.85	3.80
	Starting current	A	Soft Start	Soft Start	Soft Start	Soft Start	
Dimension	Height	mm	1830	1830	1830	1830	
	Width	mm	990	990	1210	1210	
	Depth	mm	780	780	780	780	
Weight	Heat recovery	kg	263	263	316	316	
Colour				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
Compressor		Type		Hermetic twin rotary compressor	Hermetic twin rotary compressor	Hermetic twin rotary compressor	Hermetic twin rotary compressor
		Motor output	kW	2.3x2	3.1x2	3.9x2	4.8x2
Fan unit		Fan		Propeller fan	Propeller fan	Propeller fan	Propeller fan
		Motor output	W	1.0	1.0	1.0	1.0
		Air volume	m3/h	9700	9700	12200	12200
Max. external static pressure			Pa	60	50	50	40
Heat exchanger				Finned tube	Finned tube	Finned tube	Finned tube
Refrigerant	Name			R410A	R410A	R410A	R410A
	Charge	Heat recovery	kg	11.0	11.0	11.0	11.0
High-pressure switch			MPa	OFF:2.9 ON:3.73	OFF:2.9 ON:3.73	OFF:2.9 ON:3.73	OFF:2.9 ON:3.73
Protective devices				(*3)	(*3)	(*3)	(*3)
Power supply wiring		MCA (*4)	A	21.5	26.1	31.0	35.8
		MOCP (*5)	A	25.0	32.0	40.0	50.0
Piping connections	Suction	Type		Brazing	Brazing	Brazing	Brazing
		Diameter	mm	22.2	22.2	28.6	28.6
	Discharge	Type		Brazing	Brazing	Brazing	Brazing
		Diameter	mm	19.1	19.1	19.1	22.2
	Liquid	Type		Flare	Flare	Flare	Flare
		Diameter	mm	12.7 or 9.5 (*9)	12.7 or 9.5 (*9)	12.7 or 9.5 (*9)	15.9 or 12.7 (*9)
	Balance	Type		Flare	Flare	Flare	Flare
		Diameter	mm	9.5	9.5	9.5	9.5
Max. number of connected indoor units (*6)				18	22	27	31
Sound pressure level		Cooling	dB(A)	59.0	59.0	60.0	62.0
		Heating	dB(A)	61.0	61.0	62.0	64.0
Sound power level		Cooling	dB(A)	80.0	80.0	80.0	81.0
		Heating	dB(A)	82.0	82.0	82.0	83.0
Operation temperature range		Cooling(*7)	CDB	-10.0 to 46.0	-10.0 to 46.0	-10.0 to 46.0	-10.0 to 46.0
		Heating(*6)	CWB	-25.0 to 15.5	-25.0 to 15.5	-25.0 to 15.5	-25.0 to 15.5

Note

(*1) Rated conditions cooling: Indoor 27 degC Dry Bulb / 19 degC Wet Bulb, Outdoor 35 degC Dry Bulb.

Heating: Indoor 20 degC Dry Bulb, Outdoor 7 degC Dry Bulb / 6 degC Wet Bulb.

Based on equivalent piping length of 7.5m and piping height difference of 0m.

(*2) Voltage range: Units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.

(*3) Discharge temp. Sensor / Suction temp. Sensor / High-pressure sensor / Low-pressure sensor / Compressor case thermostat / PC board fuse

(*4) Select wire size base on the larger value of MCA.

MCA: Minimum Circuit Amps

(*5) MOCP: Maximum Overcurrent Protection (Amps)

(*6) It is 54 units in case central control is in system.

(*7) Low ambient cooling (-5degC or less)

1. Not suitable for applications, which require precise room temperature control, due to increased risk of indoor ON/OFF control and potential low air off temperatures.

2. For areas that do demand a precise room temperature control, we would recommend the installation of a secondary system, which has been designed solely for the purpose of low ambient cooling.

(*8) Low ambient heating (-20degC or less) for extended periods of time is not allowed

(*9) This pipe size can be used for the less local refrigerant charge saving case.
- Refrigerant saving case will cause the following conditions.
* Real length of main piping (L1) varies 15m ~ 50m by outdoor unit capacity.
* Height difference between outdoor to indoor units (H1) is 30m or less.

Addition

Change



Better Air Solutions



Standard model (50Hz/380~415V)

Model name			Heat recovery	MMY-MAP1606FT8P-UK	MMY-MAP1806FT8P-UK	MMY-MAP2006FT8P-UK
Outdoor unit type				Inverter unit	Inverter unit	Inverter unit
Cooling capacity (*1)		Nominal.	kW	45.0	50.4	56.0
Heating capacity (*1)		Nominal.	kW	45.0	50.4	56.0
		Maximum.	kW	50.0	56.5	58.0
Capacity range			HP	16	18	20
Power supply				3N~ 50Hz 400V(380-415V)	3N~ 50Hz 400V(380-415V)	3N~ 50Hz 400V(380-415V)
Voltage range (*2)		Minimum	V	342	342	342
		Maximum	V	456	456	456
Electrical characteristic (*1)	Cooling	Running current	A	21.81	25.10	29.18
		Power input	kW	13.90	16.00	18.60
		EER	kW/kW	3.23	3.15	3.01
	Heating	Running current	A	19.14	21.49	24.68
		Power input	kW	12.20	13.70	15.90
		COP	kW/kW	3.68	3.67	3.52
	Starting current	A	Soft Start	Soft Start	Soft Start	
Dimension		Height	mm	1830	1830	1830
		Width	mm	1600	1600	1600
		Depth	mm	780	780	780
Weight	Heat recovery	kg	377	377	377	
Colour			Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	
Compressor		Type	Hermetic twin rotary compressor	Hermetic twin rotary compressor	Hermetic twin rotary compressor	
		Motor output	kW	5.8x2	6.5x2	7.6x2
Fan unit		Fan	Propeller fan	Propeller fan	Propeller fan	
		Motor output	kW	2.0	2.0	2.0
		Air volume	m3/h	17300	17300	17900
Max. external static pressure			Pa	40	40	40
Heat exchanger				Finned tube	Finned tube	Finned tube
Refrigerant		Name		R410A	R410A	R410A
		Charge	kg	11.0	11.0	11.0
High-pressure switch C			g MPa	OFF:2.9 ON:3.73	OFF:2.9 ON:3.73	OFF:2.9 ON:3.73
Protective devices				(*3)	(*3)	(*3)
Power supply wiring		MCA (*4)	A	40.6	44.9	49.3
		MOCP (*5)	A	50.0	50.0	63.0
Piping connections	Suction	Type		Brazing	Brazing	Brazing
		Diameter	mm	28.6	28.6	28.6
	Discharge	Type		Brazing	Brazing	Brazing
		Diameter	mm	22.2	22.2	22.2
	Liquid	Type		Flare	Flare	Flare
		Diameter	mm	19.1 or 12.7 (*9)	19.1 or 15.9 (*9)	19.1 or 15.9 (*9)
	Balance	Type		Flare	Flare	Flare
Max. number of connected indoor units (*6)				36	40	41
Sound pressure level		Cooling	dB(A)	61.0	61.0	61.0
		Heating	dB(A)	62.0	62.0	62.0
Sound power level		Cooling	dB(A)	83.0	83.0	83.0
		Heating	dB(A)	84.0	84.0	84.0
Operation temperature range		Cooling(*7)	CDB	-10.0 to 46.0	-10.0 to 46.0	-10.0 to 46.0
		Heating(*6)	CWB	-25.0 to 15.5	-25.0 to 15.5	-25.0 to 15.5

Note

(*1) Rated conditions

cooling: Indoor 27 degC Dry Bulb / 19 degC Wet Bulb, Outdoor 35 degC Dry Bulb.

Heating: Indoor 20 degC Dry Bulb, Outdoor 7 degC Dry Bulb / 6 degC Wet Bulb.

Based on equivalent piping length of 7.5m and piping height difference of 0m.

(*2) Voltage range: Units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.

(*3) Discharge temp. Sensor / Suction temp. Sensor / High-pressure sensor / Low-pressure sensor / Compressor case thermostat / PC board fuse

(*4) Select wire size base on the larger value of MCA.

MCA: Minimum Circuit Amps

(*5) MOCP: Maximum Overcurrent Protection (Amps)

(*6) It is 54 units in case central control is in system.

(*7) Low ambient cooling (-5degC or less)

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2. For areas that do demand a precise room temperature control, we would recommend the installation of a secondary system, which has been designed solely for the purpose of low ambient cooling.

(*8) Low ambient heating (-20degC or less) for extended periods of time is not allowed

(*9) This pipe size can be used for the less local refrigerant charge saving case.
- Refrigerant saving case will cause the following conditions.
* Real length of main piping (L1) varies 15m ~ 50m by outdoor unit capacity.
* Height difference between outdoor to indoor units (H1) is 30m or less.

Addition

Change



Standard model (50Hz/380~415V)

Model	Name		Heat recovery			MMY-AP2216FT8P-UK	MMY-AP2416FT8P-UK	MMY-AP2616FT8P-UK	MMY-AP2816FT8P-UK
	Combination	Heat recovery			MMY-MAP1206FT8P-UK	MMY-MAP1406FT8P-UK	MMY-MAP1406FT8P-UK	MMY-MAP1406FT8P-UK	
					MMY-MAP1006FT8P-UK	MMY-MAP1006FT8P-UK	MMY-MAP1206FT8P-UK	MMY-MAP1406FT8P-UK	
Outdoor unit type						Inverter unit	Inverter unit	Inverter unit	Inverter unit
Cooling capacity (*1)			Nominal.	kW	61.5	68.0	73.5	80.0	
Heating capacity (*1)			Nominal.	kW	61.5	68.0	73.5	80.0	
			Maximum.	kW	69.0	76.5	82.5	90.0	
Capacity range				HP	22	24	26	28	
Power supply					3N~ 50Hz 400V(380-415V)	3N~ 50Hz 400V(380-415V)	3N~ 50Hz 400V(380-415V)	3N~ 50Hz 400V(380-415V)	
Voltage range (*2)			Minimum	V	342	342	342	342	
			Maximum	V	456	456	456	456	
Electrical characteristic (*1)	Cooling	Running	A	27.94	32.41	35.41	39.85		
		Power input	kW	17.71	20.66	22.45	25.40		
		EER	kW/kW	3.47	3.29	3.27	3.15		
	Heating	Running	A	24.85	27.53	30.29	32.95		
		Power input	kW	15.75	17.55	19.20	21.00		
		COP	kW/kW	3.90	3.87	3.83	3.81		
		Starting current		A	Soft Start	Soft Start	Soft Start	Soft Start	
Weight	Heat recovery			kg	316 + 263	316 + 263	316 + 316	316 + 316	
Colour					Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	
Compressor	Type				Hermetic twin rotary compressor	Hermetic twin rotary compressor	Hermetic twin rotary compressor	Hermetic twin rotary compressor	
	Motor output			kW	3.9x2 + 3.1x2	4.8x2 + 3.1x2	4.8x2 + 3.9x2	4.8x2 + 4.8x2	
Fan unit	Fan				Propeller fan	Propeller fan	Propeller fan	Propeller fan	
	Motor output			kW	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0	
	Air volume			m3/h	12200 + 9700	12200 + 9700	12200 + 12200	12200 + 12200	
Max. external static pressure					Pa	50	40	40	
Heat exchanger					Finned tube	Finned tube	Finned tube	Finned tube	
Refrigerant	Name				R410A	R410A	R410A	R410A	
	Charge	Heat recovery		kg	11.0 + 11.0	11.0 + 11.0	11.0 + 11.0	11.0 + 11.0	
High-pressure switch					MPa	OFF:2.9 ON:3.73	OFF:2.9 ON:3.73	OFF:2.9 ON:3.73	
Protective devices					(*3)	(*3)	(*3)	(*3)	
Power supply wiring			MCA (*4)	A	57.1	62.0	66.8	71.6	
			MOCP (*5)	A	63.0	80.0	80.0	80.0	
Piping connections	Suction	Type			Brazing	Brazing	Brazing	Brazing	
		Diameter	mm		34.9	34.9	34.9	34.9	
	Discharge	Type			Brazing	Brazing	Brazing	Brazing	
		Diameter	mm		28.6	28.6	28.6	28.6	
	Liquid	Type			Flare	Flare	Flare	Flare	
		Diameter	mm		19.1 or 15.9 (*9)	19.1 or 15.9 (*9)	22.2 or 19.1 (*9)	22.2 or 19.1 (*9)	
	Balance	Type			Flare	Flare	Flare	Flare	
		Diameter	mm		9.5	9.5	9.5	9.5	
Max. number of connected indoor units (*6)					49	54	58	63	
Sound pressure level			Cooling	dB(A)	63.0	64.0	64.5	65.5	
			Heating	dB(A)	65.0	66.0	66.5	67.5	
Sound power level			Cooling	dB(A)	83.5	84.0	84.0	84.5	
			Heating	dB(A)	85.5	86.0	86.0	86.5	
Operation temperature range			Cooling(*7)	CDB	-10.0 to 46.0	-10.0 to 46.0	-10.0 to 46.0	-10.0 to 46.0	
			Heating(*6)	CWB	-25.0 to 15.5	-25.0 to 15.5	-25.0 to 15.5	-25.0 to 15.5	

Note

- (*1) Rated conditions cooling: Indoor 27 degC Dry Bulb / 19 degC Wet Bulb, Outdoor 35 degC Dry Bulb.
 Heating: Indoor 20 degC Dry Bulb, Outdoor 7 degC Dry Bulb / 6 degC Wet Bulb.
 Based on equivalent piping length of 7.5m and piping height difference of 0m.
- (*2) Voltage range: Units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.
- (*3) Discharge temp. Sensor / Suction temp. Sensor / High-pressure sensor / Low-pressure sensor / Compressor case thermostat / PC board fuse
- (*4) Select wire size base on the larger value of MCA.
 MCA: Minimum Circuit Amps
- (*5) MOCP: Maximum Overcurrent Protection (Amps)
- (*6) It is 54 units in case central control is in system.
- (*7) Low ambient cooling (-5degC or less)
- Not suitable for applications, which require precise room temperature control, due to increased risk of indoor ON/OFF control and potential low air off temperatures.
 - For areas that do demand a precise room temperature control, we would recommend the installation of a secondary system, which has been designed solely for the purpose of low ambient cooling.
- (*8) Low ambient heating (-20degC or less) for extended periods of time is not allowed

((*)9) This pipe size can be used for the less local refrigerant charge saving case.
 - Refrigerant saving case will cause the following conditions.
 * Real length of main piping (L1) varies 15m ~ 50m by outdoor unit capacity.
 * Height difference between outdoor to indoor units (H1) is 30m or less.

Addition

Change





Standard model (50Hz/380~415V)

Outdoor unit model (300V/50Hz/415V)				MMY-AP3016FT8P-UK	MMY-AP3216FT8P-UK	MMY-AP3416FT8P-UK
Model	Name	Heat recovery		MMY-MAP1606FT8P-UK	MMY-MAP1806FT8P-UK	MMY-MAP1806FT8P-UK
	Combination	Heat recovery		MMY-MAP1406FT8P-UK	MMY-MAP1406FT8P-UK	MMY-MAP1606FT8P-UK
Outdoor unit type				Inverter unit	Inverter unit	Inverter unit
Cooling capacity (*1)		Nominal.	kW	85.0	90.4	95.4
Heating capacity (*1)		Nominal.	kW	85.0	90.4	95.4
		Maximum.	kW	95.0	101.5	106.5
Capacity range			HP	30	32	34
Power supply				3N~ 50Hz 400V(380-415V)	3N~ 50Hz 400V(380-415V)	3N~ 50Hz 400V(380-415V)
Voltage range (*2)		Minimum	V	342	342	342
		Maximum	V	456	456	456
Electrical characteristic (*1)	Cooling	Running	A	41.73	43.62	46.91
		Power input	kW	26.60	28.70	29.90
		EER	kW/kW	3.20	3.15	3.19
		Heating	Running	A	35.61	38.28
	Power input		kW	22.70	24.40	25.90
	COP		kW/kW	3.74	3.70	3.68
	Starting current		A	Soft Start	Soft Start	Soft Start
Weight	Heat recovery		kg	377 + 316	377 + 316	377 + 377
Colour				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
Compressor	Type			Hermetic twin rotary compressor	Hermetic twin rotary compressor	Hermetic twin rotary compressor
	Motor output		kW	5.8x2 +4.8x2	6.5x2 +4.8x2	6.5x2 +5.8x2
Fan unit	Fan			Propeller fan	Propeller fan	Propeller fan
	Motor output		kW	2.0 + 1.0	2.0 + 1.0	2.0 + 2.0
	Air volume		m3/h	17300 + 12200	17300 + 12200	17300 + 17300
Max. external static pressure			Pa	40	40	40
Heat exchanger				Finned tube	Finned tube	Finned tube
Refrigerant	Name			R410A	R410A	R410A
	Charge	Heat recovery	kg	11.0 + 11.0	11.0 + 11.0	11.0 + 11.0
High-pressure switch			kg	OFF:2.9 ON:3.73	OFF:2.9 ON:3.73	OFF:2.9 ON:3.73
Protective devices				(*3)	(*3)	(*3)
Power supply wiring		MCA (*4)	A	76.5	81.3	85.6
		MOCP (*5)	A	100.0	100.0	100.0
Piping connections	Suction	Type		Brazing	Brazing	Brazing
		Diameter	mm	34.9	34.9	34.9
	Discharge	Type		Brazing	Brazing	Brazing
		Diameter	mm	28.6	28.6	28.6
	Liquid	Type		Flare	Flare	Flare
		Diameter	mm	22.2 or 19.1 (*9)	22.2 or 19.1 (*9)	22.2 or 19.1 (*9)
	Balance	Type		Flare	Flare	Flare
		Diameter	mm	9.5	9.5	9.5
Max. number of connected indoor units (*6)				64	64	64
Sound pressure level		Cooling	dB(A)	65.0	65.0	64.5
		Heating	dB(A)	66.5	66.5	65.5
Sound power level		Cooling	dB(A)	85.5	85.5	86.5
		Heating	dB(A)	87.0	87.0	87.5
Operation temperature range		Cooling(*7)	CDB	-10.0 to 46.0	-10.0 to 46.0	-10.0 to 46.0
		Heating(*6)	CWB	-25.0 to 15.5	-25.0 to 15.5	-25.0 to 15.5

Note

(*1) Rated conditions cooling: Indoor 27 degC Dry Bulb / 19 degC Wet Bulb, Outdoor 35 degC Dry Bulb.
 Heating: Indoor 20 degC Dry Bulb, Outdoor 7 degC Dry Bulb / 6 degC Wet Bulb.
 Based on equivalent piping length of 7.5m and piping height difference of 0m.

(*2) Voltage range: Units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.

(*3) Discharge temp. Sensor / Suction temp. Sensor / High-pressure sensor / Low-pressure sensor / Compressor case thermostat / PC board fuse

(*4) Select wire size base on the larger value of MCA.

MCA: Minimum Circuit Amps

(*5) MOCP: Maximum Overcurrent Protection (Amps)

(*6) It is 54 units in case central control is in system.

(*7) Low ambient cooling (-5degC or less)

1. Not suitable for applications, which require precise room temperature control, due to increased risk of indoor ON/OFF control and potential low air off temperatures.

2. For areas that do demand a precise room temperature control, we would recommend the installation of a secondary system, which has been designed solely for the purpose of low ambient cooling.

(*8) Low ambient heating (-20degC or less) for extended periods of time is not allowed

((*9) This pipe size can be used for the less local refrigerant charge saving case.
 - Refrigerant saving case will cause the following conditions.
 * Real length of main piping (L1) varies 15m ~ 50m by outdoor unit capacity.
 * Height difference between outdoor to indoor units (H1) is 30m or less.

Addition

Change





Standard model (50Hz/380~415V)

Model	Name	Heat recovery		MMY-AP3616FT8P-UK	MMY-AP3816FT8P-UK	MMY-AP4016FT8P-UK	MMY-AP4216FT8P-UK
	Combination	Heat recovery		MMY-MAP1806FT8P-UK	MMY-MAP2006FT8P-UK	MMY-MAP2006FT8P-UK	MMY-MAP1406FT8P-UK
				MMY-MAP1806FT8P-UK	MMY-MAP1806FT8P-UK	MMY-MAP2006FT8P-UK	MMY-MAP1406FT8P-UK
				-	-	-	MMY-MAP1406FT8P-UK
Outdoor unit type				Inverter unit	Inverter unit	Inverter unit	Inverter unit
Cooling capacity (*1)		Nom.	kW	100.8	106.4	112.0	120.0
Heating capacity (*1)		Nom.	kW	100.8	106.4	112.0	120.0
		Max.	kW	113.0	114.5	116.0	135.0
Capacity range			HP	36	38	40	42
Power supply				3N 50Hz 400V(380-415V)	3N 50Hz 400V(380-415V)	3N 50Hz 400V(380-415V)	3N 50Hz 400V(380-415V)
Voltage range (*2)		Minimum	V	342	342	342	342
		Maximum	V	456	456	456	456
Electrical characteristics (*1)	Cooling	Running	A	50.20	54.28	58.36	59.8
		Power input	kW	32.00	34.60	37.20	38.1
		EER	kW/kW	3.15	3.08	3.01	3.15
		Running	A	42.99	46.19	49.35	49.4
	Heating	Power input	kW	27.40	29.60	31.80	31.5
		COP	kW/kW	3.68	3.59	3.52	3.81
		Starting current	A	Soft Start	Soft Start	Soft Start	Soft Start
	Weight	Heat recovery	kg	377 + 377	377 + 377	377 + 377	316 + 316 + 316
Colour			Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	
Compressor	Type		Hermetic twin rotary compressor	Hermetic twin rotary compressor	Hermetic twin rotary compressor	Hermetic twin rotary compressor	
	Motor output	kW	6.5x2 + 6.5x2	7.6x2 + 6.5x2	7.6x2 + 7.6x2	4.8x2 + 4.8x2 + 4.8x2	
Fan unit	Fan		Propeller fan	Propeller fan	Propeller fan	Propeller fan	
	Motor output	kW	2.0 + 2.0	2.0 + 2.0	2.0 + 2.0	1.0 + 1.0 + 1.0	
	Air volume	m3/h	17300 + 17300	17900 + 17300	17900 + 17900	12200 + 12200 + 12200	
Max. external static pressure			Pa	40	40	40	40
Heat exchanger				Finned tube	Finned tube	Finned tube	Finned tube
Refrigerant	Name			R410A	R410A	R410A	R410A
	Charge	Heat recovery	kg	11.0 + 11.0	11.0 + 11.0	11.0 + 11.0	11.0 + 11.0 + 11.0
High-pressure switch C			kg	OFF :2.9 ON :3.73	OFF :2.9 ON :3.73	OFF :2.9 ON :3.73	OFF :2.9 ON :3.73
Protective devices				(*)3	(*)3	(*)3	(*)3
Power supply wiring		MCA (*4)	A	89.8	94.2	98.6	107.4
		MOCP (*5)	A	100.0	125.0	125.0	125.0
Piping connections	Suction	Type		Brazing	Brazing	Brazing	Brazing
		Diameter	mm	41.3	41.3	41.3	41.3
	Discharge	Type		Brazing	Brazing	Brazing	Brazing
		Diameter	mm	34.9	34.9	34.9	34.9
	Liquid	Type		Flare	Flare	Flare	Flare
		Diameter	mm	22.2 or 19.1 (*9)	22.2 or 19.1 (*9)	22.2 or 19.1 (*9)	22.2 or 19.1 (*9)
	Balance	Type		Flare	Flare	Flare	Flare
		Diameter	mm	9.5	9.5	9.5	9.5
Max. number of connected indoor units(*6)				64	64	64	64
Sound pressure level		Cooling	dB(A)	64.5	64.5	64.5	67.0
		Heating	dB(A)	65.5	65.5	65.5	69.0
Sound power level		Cooling	dB(A)	86.5	86.5	86.5	86.0
		Heating	dB(A)	87.5	87.5	87.5	88.0
Operation temperature range		Cooling(*7)	CDB	-10.0 to 46.0	-10.0 to 46.0	-10.0 to 46.0	-10.0 to 46.0
		Heating(*8)	CWB	-25.0 to 15.5	-25.0 to 15.5	-25.0 to 15.5	-25.0 to 15.5

Note

(*1) Rated conditions cooling: Indoor 27 degC Dry Bulb / 19 degC Wet Bulb, Outdoor 35 degC Dry Bulb.

Heating: Indoor 20 degC Dry Bulb, Outdoor 7 degC Dry Bulb / 6 degC Wet Bulb.

Based on equivalent piping length of 7.5m and piping height difference of 0m.

(*2) Voltage range: Units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.

(*3) Discharge temp. Sensor / Suction temp. Sensor / High-pressure sensor / Low-pressure sensor / Compressor case thermostat / PC board fuse

(*4) Select wire size base on the larger value of MCA.

MCA: Minimum Circuit Amps

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(*6) It is 54 units in case central control is in system.

(*7) Low ambient cooling (-5degC or less)

1. Not suitable for applications, which require precise room temperature control, due to increased risk of indoor ON/OFF control and potential low air off temperatures.

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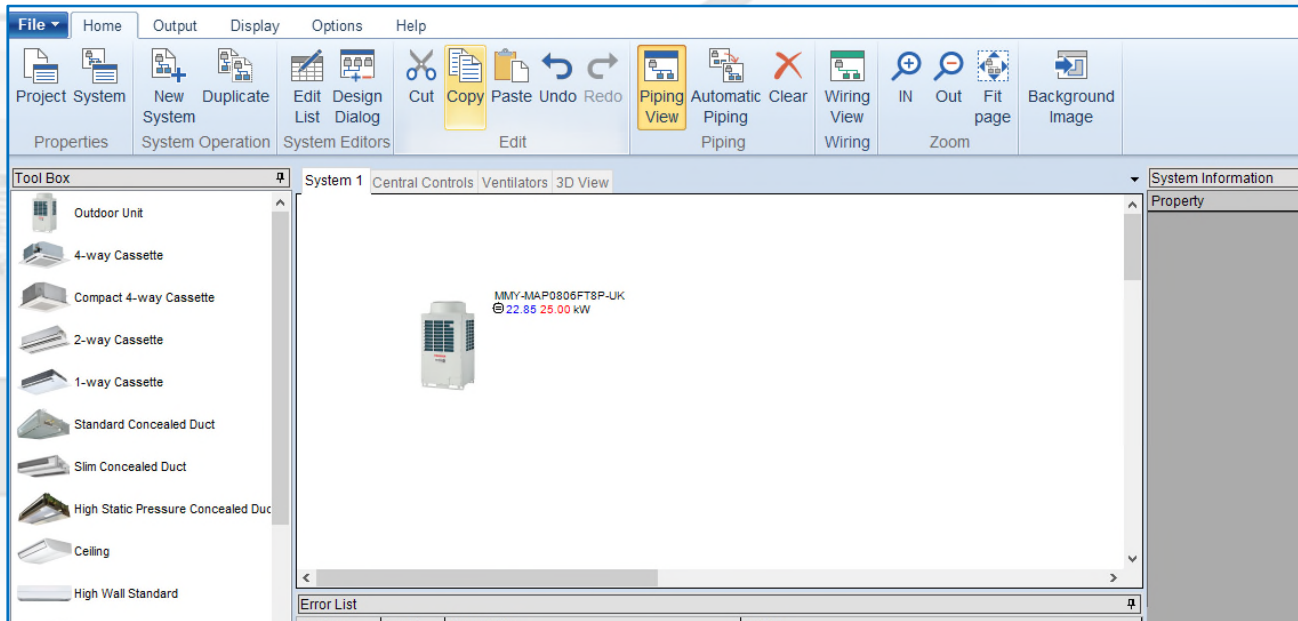
(*9) This pipe size can be used for the less local refrigerant charge saving case.
- Refrigerant saving case will cause the following conditions.
* Real length of main piping (L1) varies 15m ~ 50m by outdoor unit capacity.
* Height difference between outdoor to indoor units (H1) is 30m or less.

Addition

Change

8. Latest Release Software Selection Tool

Refrigerant saving installation option is already included in the latest release software Selection tool version v1.2.46. Please update your software to utilise this feature.



Toshiba Selection Tool

Start

[Quotation Mode](#)
[Design Mode](#)
[Drag & Drop Mode](#)

Recent

Update Information

31/05/2019 18:25 (JST)
 Version 1.2.46
 1) Improved quality of PDF output
 2) Added new feature (Piping size down for SHRM-e and Drawing mode setting)
 3) Updated report cover page layout

15/04/2019 12:48 (JST)
 Version 1.2.39
 Added R32 DI BIG and SDI
 Improved PDF output

21/02/2019 18:40 (JST)
 Version 1.2.32
 Improved reliability

14/02/2019 10:08 (JST)
 Version 1.2.31

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