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SOLUTIONS | HVAC
SYSTEMS

Rooftop Package Unit



TEKNOGEN®

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Teknogen

Who we are, what we do?

TEKNOGEN, a trademark of BY HVAC SYSEEM INC. has been operating since 2011 in selling of products that have been manufactured with superior quality and service mentality. Teknogen product range covers air handling units, fancoil units, hygienic air handling units, swimming pool air handling units, unit heaters, floor convectors, rooftop package units and heat recovery units.

National and international standards are considered during manufacturing. Proper and high-end components are used throughout all manufacturing processes to ensure that performance of all units are measurable and standards are met. Therefore we cooperate with leading component manufacturers in order to observe innovations and to introduce these developments to our production.

Heating, Ventilating and Air Conditioning (HVAC) sector has been growing significantly in recent years and energy efficiency has become prominent due to the developments in construction technology. As Teknogen, we are manufacturing devices with high energy efficiency and make them available to be used in buildings with low energy consumption.

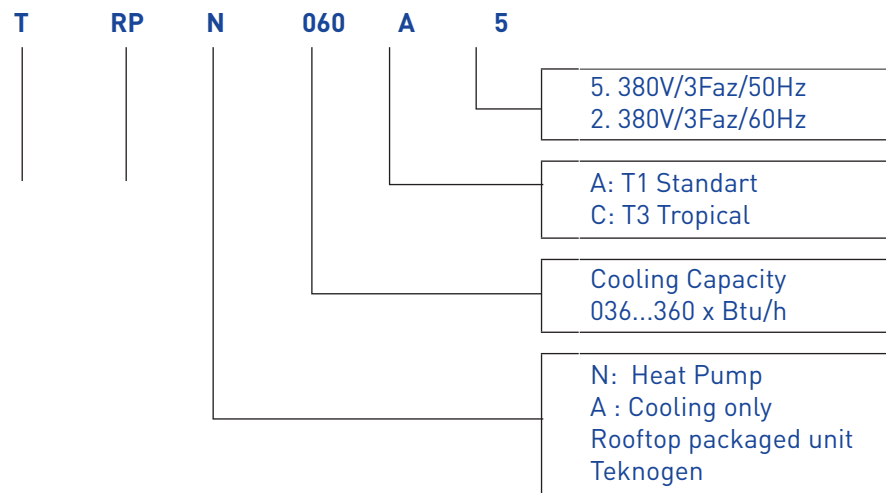
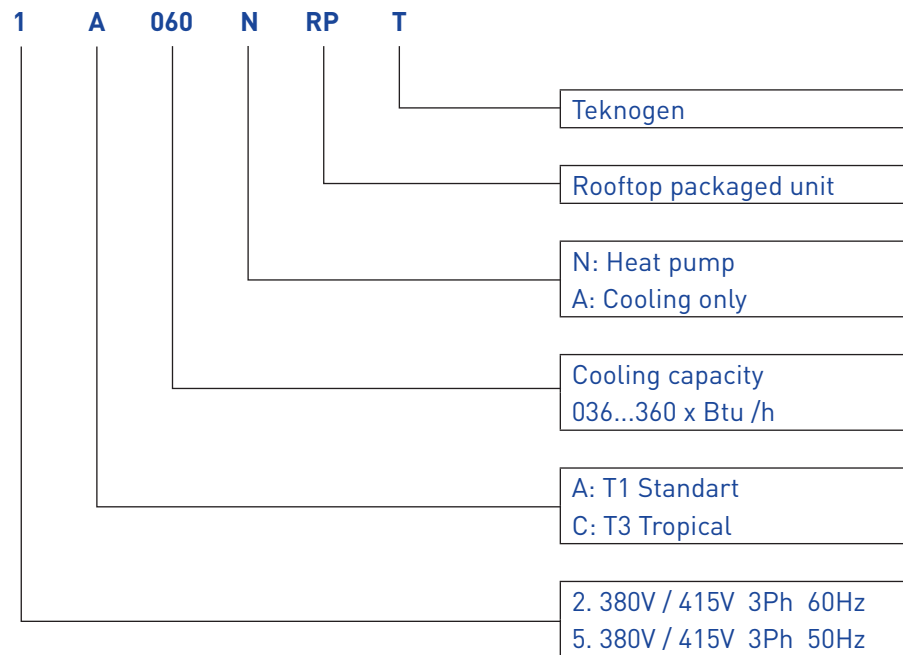
If you are looking for high quality production and a solution partner, we Teknogen are ready.

Optional Free Cooling

Energy consumption of air conditioning systems, constitute an important part of the energy consumed in the process. Various applications of energy savings and return air cooling are used. Cooling applications with significant energy savings are. In circumstances where the outside temperature is lower than the indoor temperature, outdoor air directly sent to the indoor then heat gain are met. This cooling method is referred to as Economizer. Temperature-controlled cooling of technogenic roof-top devices are optional. Thermostat used in the system, as can be set to a particular temperature can be adjusted according to the difference between external air and room temperature. The device, according to the outside air temperature setpoint, makes mechanical cooling, natural cooling or partial cooling.

1. In cases where the outside temperature rises above a set value, mechanical cooling is done using a compressor and condenser. Return air is used for ventilation.
- 2- If the outside air value below the set value, the maximum rate of cooling is done using outside air. The outside air is directly sent into the internal environment when value is below the blowing temperature of the outside air temperature. Condenser and compressor remains disabled, the complete study (100%) is called a cooling.
3. If the outside air temperature value is greater than the blowing of the outside air temperature, then the outside air passing through the evaporator is cooled to the blowing temperature.. Condenser and compressor are switched on, but the condenser and compressor load is reduced. This type of operation is called partial cooling

Nomenclature



Specification

Table 1 - Cooling only 50Hz

Model		TRPA036A5	TRPA048A5	TRPA060A5	TRPA072A5	TRPA096A5
Cooling Capacity	kW	9.6	12.35	15.68	19.95	26.70
Cooling Input	kW	3.85	5.0	6.3	8.1	11
Circuit Number		1	1	1	2	2
Power	V / Ph / Hz	380 / 3 / 50				
Refrigerant		R407c				
Compressor	Type	Hermetically Sealed Scroll Compressor				
Cond. Fan	Type	Axial				
	Drive	Direct				
Supply Fan	Type	Centrifugal				
Air Flow	m ³ /h	2100	2700	3400	4200	5200
Max. ESP	Pa	200	200	200	270	300
Noise	dB (A)	59	59	59	65	65
Ref. Charge	Kg	1.6	2.0	2.2	2.7 x 2	3.0 x 2
Dimensions	L (mm)	1107	1107	1107	1682	1682
	W (mm)	730	730	730	1106	1106
	H (mm)	848	848	848	1042	1042
Weight	Kg	160	170	190	260	310

Notes: Cooling conditioning: Indoor temperature DB: 27°C, WB: 19°C;
Outdoor temperature DB: 35°C, WB: 24°C

Model		TRPA125A5	TRPA168A5	TRPA250A5	TRPA300A5	TRPA360A5
Cooling Capacity	kW	31.83	42.75	66.50	80.75	99.75
Cooling Input	kW	12.6	18	28	34	40
Circuit Number		2	2	2	2	2
Power	V / Ph / Hz	380 / 3 / 50				
Refrigerant		R407c				
Compressor	Type	Hermetically Sealed Scroll Compressor				
Cond. Fan	Type	Axial				
	Drive	Direct				
Supply Fan	Type	Centrifugal				
Air Flow	m ³ /h	6000	8000	12500	17000	21800
Max. ESP	Pa	300	400	400	800	800
Noise	dB (A)	65	68	72	80	83
Ref. Charge	Kg	4.8 x 2	6.5 x 2	7.6 x 2	13 x 2	16 x 2
Dimensions	L (mm)	2010	2010	2843	3445	3445
	W (mm)	1106	1106	2111	2115	2115
	H (mm)	1150	1150	1192	1195	1195
Weight	Kg	384	600	860	1700	1700

Notes: Cooling conditioning: Indoor temperature DB: 27°C, WB: 19°C;
Outdoor temperature DB: 35°C, WB: 24°C

Table 2 - Cooling only 60Hz

Model		TRPA036A2	TRPA048A2	TRPA060A2	TRPA072A2	TRPA096A2
Cooling Capacity	kW	9.6	12.35	15.68	19.95	26.70
Cooling Input	kW	3.85	5.0	6.3	8.1	11
Circuit Number		1	1	1	2	2
Power	V / Ph / Hz	380 / 3 / 60				
Refrigerant		R407c				
Compressor	Type	Hermetically Sealed Scroll Compressor				
Cond. Fan	Type	Axial				
	Drive	Direct				
Supply Fan	Type	Centrifugal				
Air Flow	m ³ /h	2100	2700	3400	4200	5200
Max. ESP	Pa	200	200	200	270	300
Noise	dB (A)	59	59	59	65	65
Ref. Charge	Kg	1.6	2.0	2.2	2.7 x 2	3.0 x 2
Dimensions	L (mm)	1107	1107	1107	1682	1682
	W (mm)	730	730	730	1106	1106
	H (mm)	848	848	848	1042	1042
Weight	Kg	160	170	190	260	310

Notes: Cooling conditioning: Indoor temperature DB: 27°C, WB: 19°C;
Outdoor temperature DB: 35°C, WB: 24°C

Model		TRPA125A2	TRPA168A2	TRPA250A2	TRPA300A2	TRPA360A2
Cooling Capacity	kW	31.83	42.75	66.50	80.75	99.75
Cooling Input	kW	12.6	18	28	34	40
Circuit Number		2	2	2	2	2
Power	V / Ph / Hz	380 / 3 / 60				
Refrigerant		R407c				
Compressor	Type	Hermetically Sealed Scroll Compressor				
Cond. Fan	Type	Axial				
	Drive	Direct				
Supply Fan	Type	Centrifugal				
Air Flow	m ³ /h	6000	8000	12500	17000	21800
Max. ESP	Pa	300	400	400	800	800
Noise	dB (A)	65	68	72	80	83
Ref. Charge	Kg	4.8 x 2	6.5 x 2	7.6 x 2	13 x 2	16 x 2
Dimensions	L (mm)	2010	2010	2843	3445	3445
	W (mm)	1106	1106	2111	2115	2115
	H (mm)	1150	1150	1192	1195	1195
Weight	Kg	384	600	860	1700	1700

Notes: Cooling conditioning: Indoor temperature DB: 27°C, WB: 19°C;
Outdoor temperature DB: 35°C, WB: 24°C

Specification

Table 3 - Heat Pump 50Hz

Model		TRPN036A5	TRPN048A5	TRPN060A5	TRPN072A5	TRPN096A5
Cooling Capacity	kW	9.6	12.35	15.68	19.95	26.70
Heating Capacity	kW	9.88	12.73	16.06	20.43	27.17
Cooling Input	kW	3.85	5.0	6.3	8.1	11
Heating Input	kW	3.61	4.7	5.95	7.9	10.5
Circuit Number		1	1	1	2	2
Power	V / Ph / Hz	380 / 3 / 50				
Refrigerant		R407c				
Compressor	Type	Hermetically Sealed Scroll Compressor				
Cond. Fan	Type	Direct driven axial fan				
Supply Fan	Type	Direct driven centrifugal fan				
Air Flow	m ³ /h	2100	2700	3400	4200	5200
Max. ESP	Pa	200	200	200	270	300
Noise	dB (A)	59	59	59	65	65
Ref. Charge	Kg	1.6	2.0	2.2	2.7 x 2	3.0 x 2
Dimensions	L (mm)	1107	1107	1107	1682	1682
	W (mm)	730	730	730	1106	1106
	H (mm)	848	848	848	1042	1042
Weight	Kg	160	170	190	260	310

Notes: Cooling conditioning: Indoor temperature DB: 27°C, WB: 19°C; outdoor temperature DB: 35°C, WB: 24°C
 Outdoor temperature DB: 35°C, WB: 24°C; outdoor temperature DB: 7°C, WB: 6°C

Model		TRPN125A5	TRPN168A5	TRPN250A5	TRPN300A5	TRPN360A5
Cooling Capacity	kW	31.83	42.75	66.50	80.75	99.75
Heating Capacity	kW	9.88	12.73	16.06	20.43	27.17
Cooling Input	kW	12.6	18	28	34	40
Heating Input	kW	11.5	17.2	26.8	36	42
Circuit Number		2	2	2	2	2
Power	V / Ph / Hz	380 / 3 / 50				
Compressor	Type	Hermetically Sealed Scroll Compressor				
Cond. Fan	Type	Direct driven axial fan				
Supply Fan	Type	Direct driven centrifugal fan				
Air Flow	m ³ /h	6000	8000	12500	17000	21800
Max. ESP	Pa	300	400	400	800	800
Noise	dB (A)	65	68	72	80	83
Ref. Charge	Kg	4.8 x 2	6.5 x 2	7.6 x 2	13 x 2	16 x 2
Dimensions	L (mm)	2010	2010	2843	3445	3445
	W (mm)	1106	1106	2111	2115	2115
	H (mm)	1150	1150	1192	1195	1195
Weight	Kg	384	600	860	1700	1700

Notes: Cooling conditioning: Indoor temperature DB: 27°C, WB: 19°C; outdoor temperature DB: 35°C, WB: 24°C
 Outdoor temperature DB: 35°C, WB: 24°C; outdoor temperature DB: 7°C, WB: 6°C

Table 4 - Heat Pump 60Hz

Model		TRPN036A2	TRPN048A2	TRPN060A2	TRPN072A2	TRPN096A2
Cooling Capacity	kW	9.6	12.35	15.68	19.95	26.70
Heating Capacity	kW	9.88	12.73	16.06	20.43	27.17
Cooling Input	kW	3.85	5.0	6.3	8.1	11
Heating Input	kW	3.61	4.7	5.95	7.9	10.5
Circuit Number		1	1	1	2	2
Power	V / Ph / Hz	220 / 3 / 60				
Compressor	Type	Hermetically Sealed Scroll Compressor				
Cond. Fan	Type	Direct driven axial fan				
Supply Fan	Type	Direct driven centrifugal fan				
Air Flow	m ³ /h	2100	2700	3400	4200	5200
Max. ESP	Pa	200	200	200	270	300
Noise	dB (A)	59	59	59	65	65
Ref. Charge	Kg	1.6	2.0	2.2	2.7 x 2	3.0 x 2
Dimensions	L (mm)	1107	1107	1107	1682	1682
	W (mm)	730	730	730	1106	1106
	H (mm)	848	848	848	1042	1042
Weight	Kg	160	170	190	260	310

Notes: Cooling conditioning: Indoor temperature DB: 27°C, WB: 19°C; outdoor temperature DB: 35°C, WB: 24°C
 Outdoor temperature DB: 35°C, WB: 24°C; outdoor temperature DB: 7°C, WB: 6°C

Model		TRPN125A2	TRPN168A2	TRPN250A2	TRPN300A2	TRPN360A2
Cooling Capacity	kW	31.83	42.75	66.50	80.75	99.75
Heating Capacity	kW	32.49	43.70	68.31	82.12	101.45
Cooling Input	kW	12.6	18	28	34	40
Heating Input	kW	11.5	17.2	26.8	36	42
Circuit Number		2	2	2	2	2
Power	V / Ph / Hz	220 / 3 / 60				
Compressor	Type	Hermetically Sealed Scroll Compressor				
Cond. Fan	Type	Direct driven axial fan				
Supply Fan	Type	Direct driven centrifugal fan				
Air Flow	m ³ /h	6000	8000	12500	17000	21800
Max. ESP	Pa	300	400	400	800	800
Noise	dB (A)	65	68	72	80	83
Ref. Charge	Kg	4.8 x 2	6.5 x 2	7.6 x 2	13 x 2	16 x 2
Dimensions	L (mm)	2010	2010	2843	3445	3445
	W (mm)	1106	1106	2111	2115	2115
	H (mm)	1150	1150	1192	1195	1195
Weight	Kg	348	600	860	1700	1700

Notes: Cooling conditioning: Indoor temperature DB: 27°C, WB: 19°C; outdoor temperature DB: 35°C, WB: 24°C
 Outdoor temperature DB: 35°C, WB: 24°C; outdoor temperature DB: 7°C, WB: 6°C

Specification

Table 5 - T3 Tropical

Model		TRPA036C5	TRPA048C5	TRPA060C5	TRPA072C5
Cooling Capacity R407c	kW (A)	10.1	13	16.5	21
	kW (B)	9	11.7	14.8	18.9
Cooling Input	kW (A)	3.85	5.0	6.3	8.1
	kW (B)	4.2	5.5	6.9	8.9
Circuit Number		1	1	1	2
Power	V / Ph / Hz	380 / 3 / 50			
Refrigerant		R407c			
Compressor	Type	Hermetically Sealed Scroll Compressor			
Cond. Fan	Type	Direct driven axial fan			
Supply Fan	Type	Direct driven centrifugal fan			
Air Flow	m ³ /h	2100	2700	3400	4200
Max. ESP	Pa	200	300	300	300
Noise	dB (A)	59	59	59	65
Ref. Charge	Kg	2.5	3.1	3.8	2.7 x 2
Dimensions	L (mm)	1320	1320	1320	1784
	W (mm)	980	980	980	1202
	H (mm)	870	870	870	1147
Weight	Kg	165	200	210	260

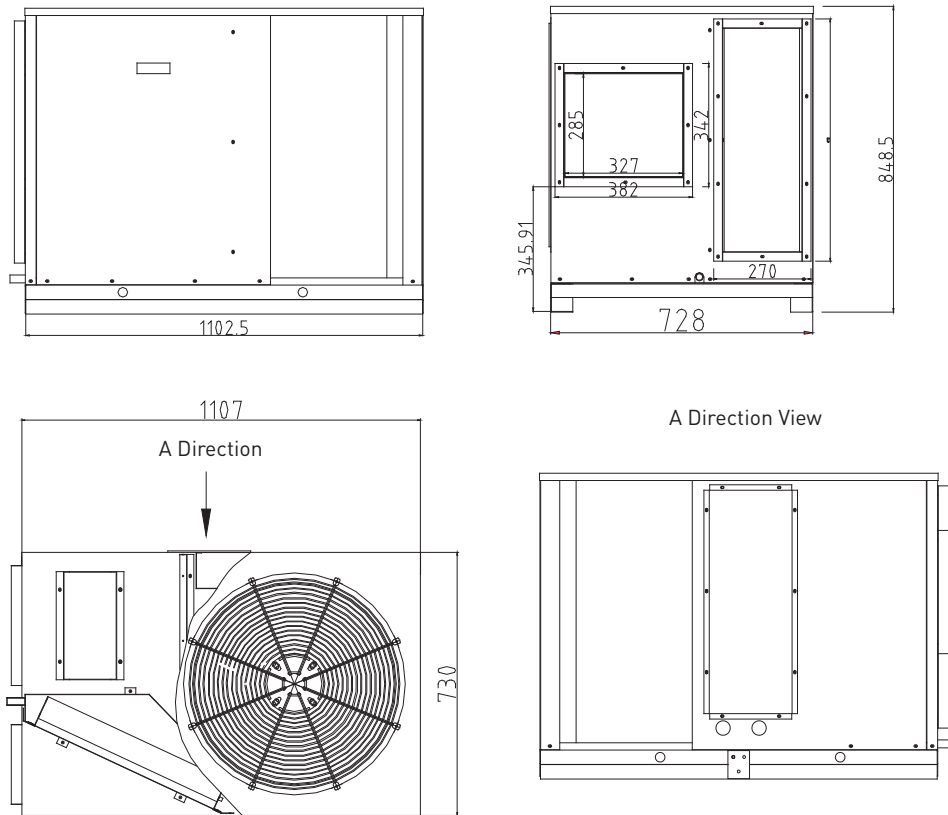
Notes: Cooling conditioning: Indoor temperature DB: 29°C, WB: 19°C;
Outdoor temperature (A) DB: 35°C, WB: 24°C. (B) DB: 46°C, WB: 24°C

Model		TRPA096C5	TRPA125C5	TRPA168C5	TRPA250C5
Cooling Capacity R407c	kW (A)	28.1	33.5	45	70
	kW (B)	25	30	40.5	63
Cooling Input	kW (A)	11	12.6	18	28
	kW (B)	12.1	14.3	18.9	30
Circuit Number		2	2	2	2
Power	V / Ph / Hz	380 / 3 / 50			
Refrigerant		R407c			
Compressor	Type	Hermetically Sealed Scroll Compressor			
Cond. Fan	Type	Direct driven axial fan			
Supply Fan	Type	Direct driven centrifugal fan			
Air Flow	m ³ /h	5200	6000	8000	12500
Max. ESP	Pa	300	300	400	400
Noise	dB (A)	65	65	68	72
Ref. Charge	Kg	3.0 x 2	4.8 x 2	6.5 x 2	7.6 x 2
Dimensions	L (mm)	1784	2110	2110	2840
	W (mm)	1202	1280	1280	2111
	H (mm)	1147	1270	1270	1193
Weight	Kg	310	384	600	860

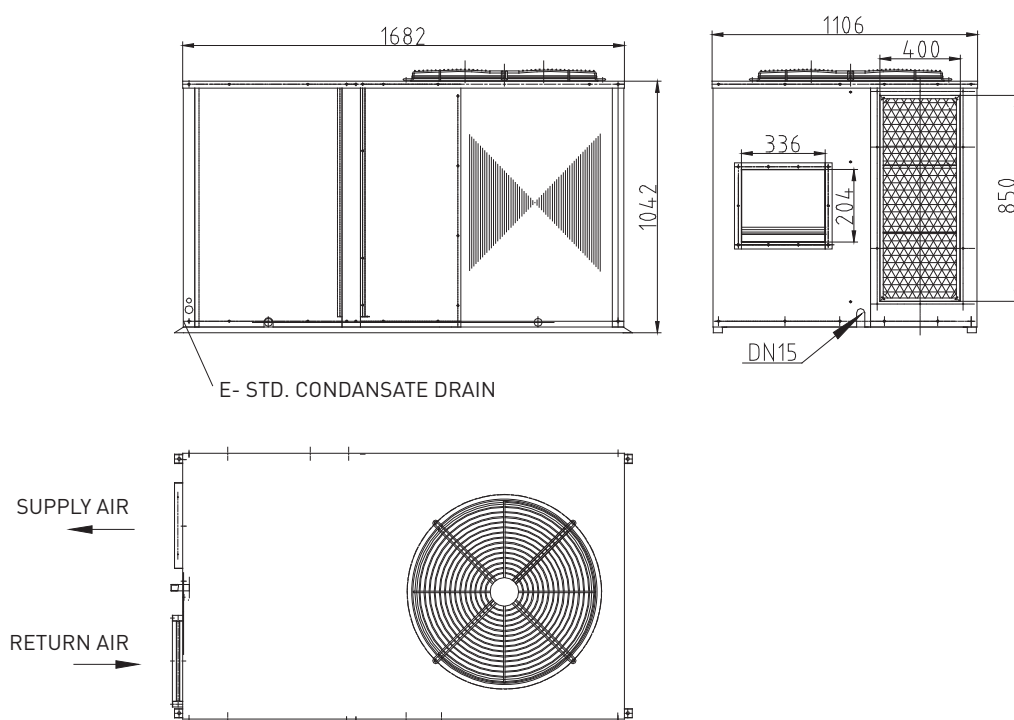
Notes: Cooling conditioning: Indoor temperature DB: 27°C, WB: 19°C;
Outdoor temperature DB: 35°C, WB: 24°C

Dimensions

TRPA(N) 036, 048, 060

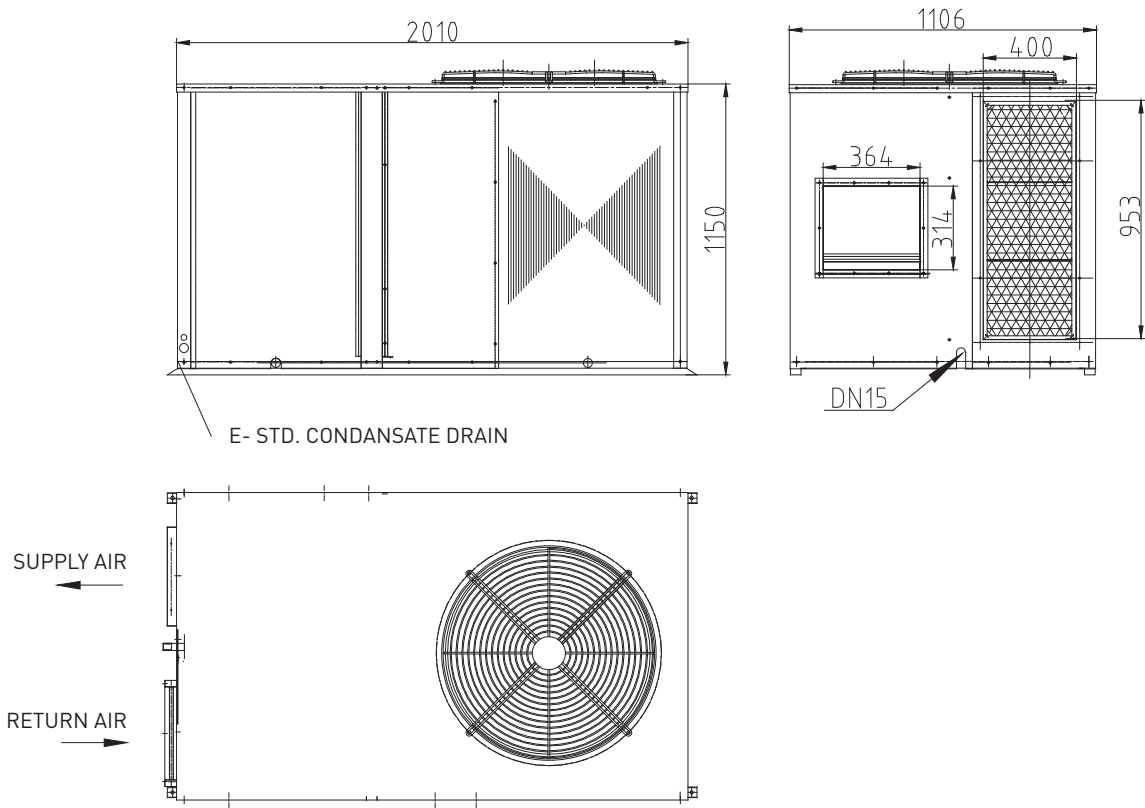


TRPA(N) 072, 096

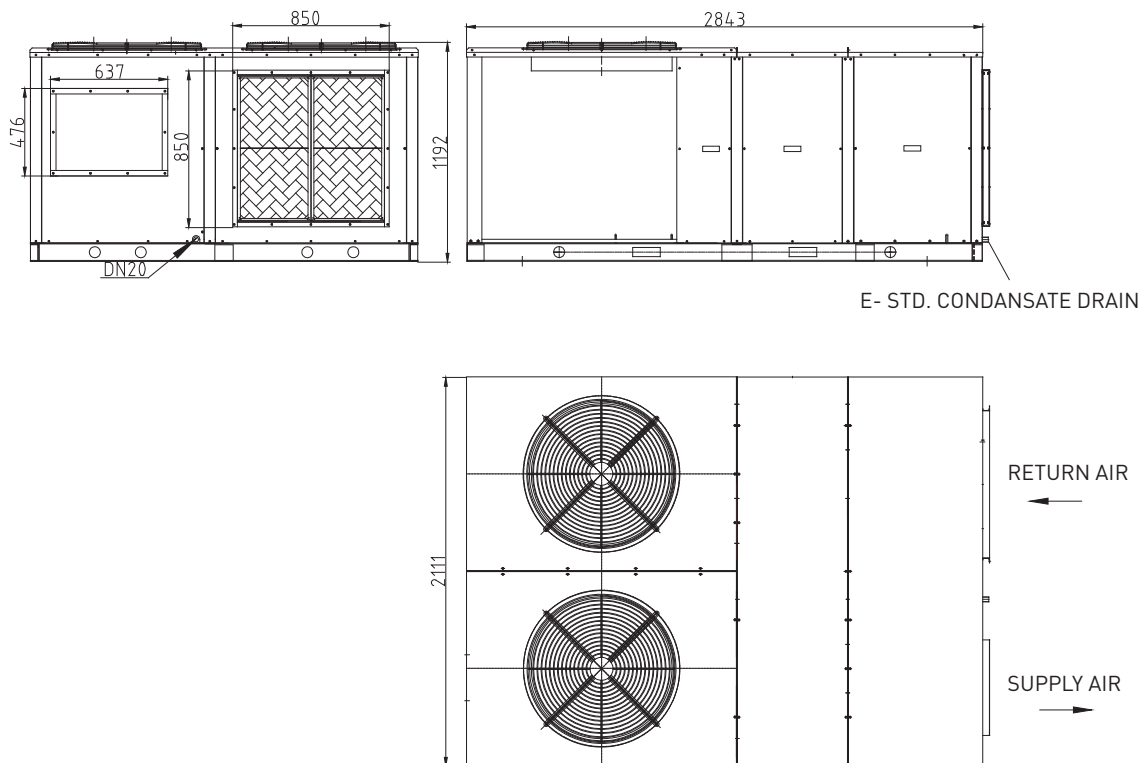


Dimensions

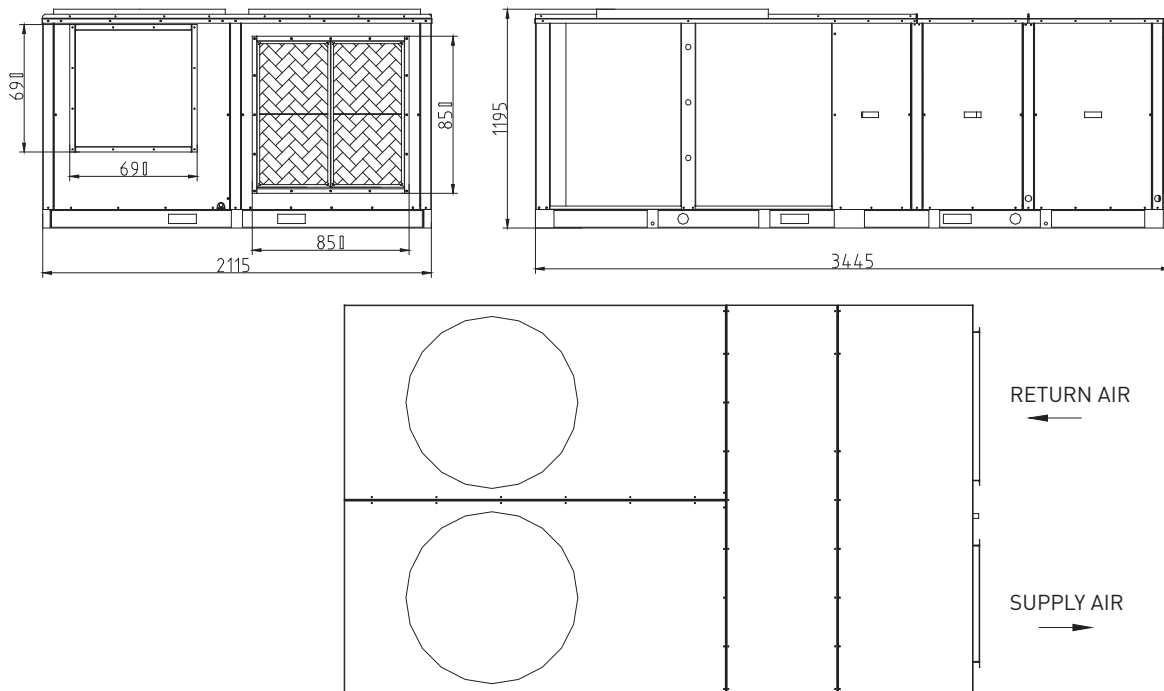
TRPAIN) 125, 168



TRPAIN)250



TRPA(N)300, 360



Installation

Installation Notice

1. Aptitude

The equipment installation must be completed by professionals. Installation by non-professional staff may lead to improper operation, even failure.

2. Acceptance

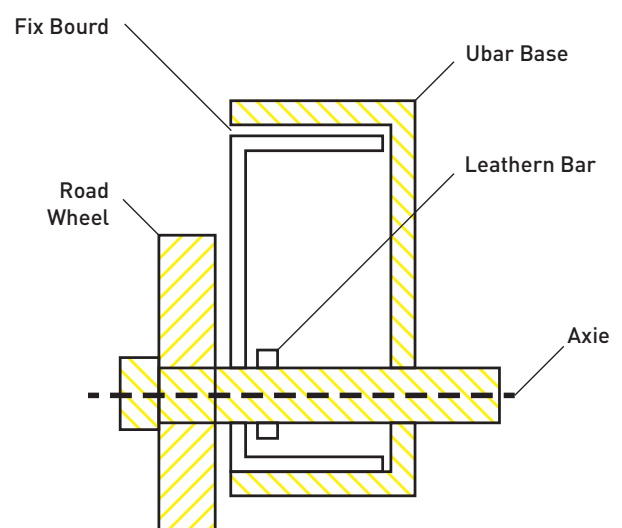
Check the unit carefully when receiving the units to see if any failure occurs in the process of transportation. Check the amount of equipments and accessories. Contact the relevant staff if any problem occurs.

3. Move

Take necessary protection to the unit when moving the units. It is not allowed to make forcible operation to damage the units.

4. Method of dismantle the road wheel

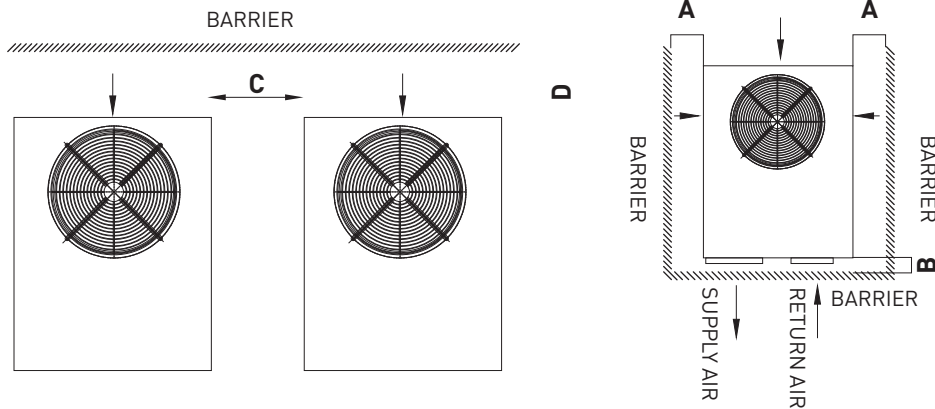
- a) dismantle the leathern bar
- b) take out the road wheel



Installation

Unit installation

1. The installation location should make the hot air through condenser not to be absorbed back to the unit or absorb hot air which comes from another unit. Besides, enough space should be kept for unit maintenance.
2. Barrier should not exist to block the air discharge and air suction in the passage of air discharge and air suction of the units.
3. There should be good ventilation at the location of unit installation so as to take away the heat air blown from the unit and bring in the air at a lower temperature.
4. The unit should be installed on a base which is firm and flat, 50 - 100 mm higher than the plane. Enough strength should be kept to support the weight of the unit and the vibration when running.
5. The unit should be installed horizontally to decrease the vibration, lower the noise and make the condensing water discharge smooth. The condensing water discharge vent of the unit must have water seal whose height should be more than 50 mm.
6. Keep the installation away from the dirty or oily place so as not to block the heat exchanger.
7. Following space is suggested during installation.

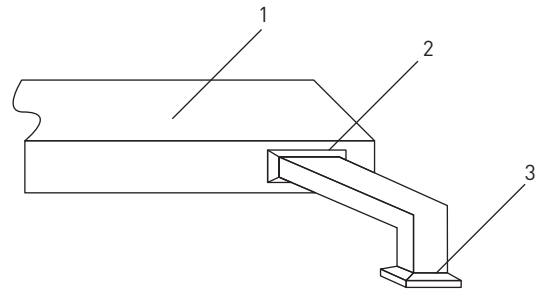


Model	072	096	125	168	250	300	360
A	1200	1200	1600	1600	2000	2500	2500
B	500	500	500	500	800	1200	1200
C	2000	2000	2000	2000	2000	2500	2500
D	1200	1200	1600	1600	2000	2500	2500

Duct installation

1. Usually two air supply ducts: Rectangle air duct and circular one.
2. Rectangle air duct can connect the air supply inlet of the indoor unit by flexible connection.
3. For circular duct, add a transition duct to the air inlet of indoor unit, and be connected separately to air diffuser (referring to the drawing), the air inlet velocity of air diffuser should be the same to meet the requirement.
4. Suggest using silencer box in the supply duct of the heavy airflow unit for lower noise.
5. If adopting fresh air, the fresh air entrance is better to choose the place where the air is clean and there is no pollution. As for the outdoor air entrance, rain-proof shutter and filter should be installed and at the fresh air section, air flow adjuster should be installed. It is suitable when the fresh air quantity makes up 10% of the total air quantity.

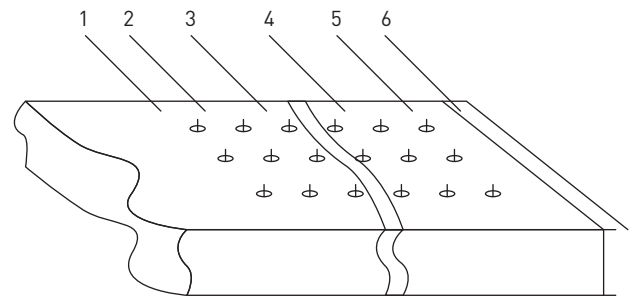
Model	Name
1	Main pipe
2	Branch pipe
3	Air supply pipe



Air duct heat preservation

Air supply and air return pipes should both have heat preservation. First of all, stick the nail on the air duct and then attach the cotton preservation with tin foil paper. Fasten it with nails and seal the connection with tin foil adhesive tape.

Model	Name
1	Galvanized Place
2	Nail
3	Cotton Preservation
4	Tin Oil
5	Nail Cover
6	Adhesive tape



Remarks:

1. Every air supply pipe and return air pipe should have iron bracket fastened on the floor prefabricated board. The air duct connector should be sealed tight by adhesive tape.
2. It is recommended that the air return margin should keep the wall 150 mm far.

Electrical installation

Notice

1. The power supply capacity must meet the a/c requirement. The voltage at the side of the power supply incoming line inside the a/c unit should remain within +10% rating and the power supply frequency is within 2%.
2. Cut the power supply at electric wire connection. Forbidden to operate with electricity.
3. To protect the staff and avoid the danger of electric shock caused by leakage, the unit body should have good and reliable grounding protection setting to prevent the electric shock accident. It also needs check the grounding line very often to guarantee a good grounding (grounding resistance should not exceed 4 ohm)
4. The layout of power supply routing must conform to the national standard and the unit body must have good grounding to avoid the danger caused by insulation failure. The indoor suspending routing adopts electric specialized PVC conduit tube and PVC connection wire box with cover (not use recycling material connection wire box) Wiring conduit should flat and erect and be fixed. Threading pipe should not use right angle elbow plumbing, but use proper siphon spring bend. The radius of the syphon should be more than four times as long as the diameter of the conduit. Drape should not occur after bending the threading pipe. Lay the connection box properly so as to easy maintenance and wire changeover.
5. The communication wire (Temp. Probe connection wire) and the power supply source should be laid separately to prevent interruption.

SIMPLY THE BEST
SOLUTIONS

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reserves the right to make alterations due to technical
developments without prior notice.



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