# V4 Plus Cooling Only Unit

| MODEL | | | MDV-252 (8) | MDV-280 (10) | MDV-335 (12) | MDV-400 (14) | MDV-450 (16) |
|---|---|---|---|---|---|---|---|
| Power supply | | V-Ph-Hz | 220V-3Ph-60Hz | 220V-3Ph-60Hz | 220V-3Ph-60Hz | 220V-3Ph-60Hz | 220V-3Ph-60Hz |
| Cooling | Capacity | RT | 7.2 | 8.0 | 9.5 | 11.4 | 12.8 |
| | | kW | 25.2 | 28 | 33.5 | 40 | 45 |
| | | Btu/h | 86,000 | 95,500 | 114,300 | 136,500 | 153,500 |
| | | kcal/h | 21,672 | 24,080 | 28,810 | 34,400 | 38,700 |
| | Input | kW | 5.87 | 7.2 | 9.05 | 12.31 | 14.02 |
| | EER | kW/kW | 4.29 | 3.89 | 3.7 | 3.25 | 3.21 |
| Connectable Indoor Unit | Total Capacity | % | 50-130 | 50-130 | 50-130 | 50-130 | 50-130 |
| | Max. Quantity | | 13 | 16 | 16 | 16 | 20 |
| Sound Pressure Level | | dB(A) | 57 | 57 | 58 | 60 | 60 |
| Pipe Connections | Liquid pipe | in.(mm) | Φ1/2(Φ12.7) | Φ1/2(Φ12.7) | Φ5/8(Φ15.9) | Φ5/8(Φ15.9) | Φ5/8(Φ15.9) |
| | Gas pipe | in.(mm) | Φ1(Φ25.4) | Φ1(Φ25.4) | Φ1-1/4(Φ31.8) | Φ1-1/4(Φ31.8) | Φ1-1/4(Φ31.8) |
| | Oil balance pipe | in.(mm) | Φ1/4(Φ6.35) | Φ1/4(Φ6.35) | Φ1/4(Φ6.35) | Φ1/4(Φ6.35) | Φ1/4(Φ6.35) |
| Outdoor fan motor | Motor type | | DC Inverter | DC Inverter | DC Inverter | DC Inverter | DC Inverter |
| | Quantities | | 1 | 1 | 2 | 2 | 2 |
| | Air Flow Rate | $m^3/h$ | 11,700 | 11,700 | 15,600 | 15,600 | 15,600 |
| | | CFM | 6,880 | 6,880 | 9,173 | 9,173 | 9,173 |
| | Motor output | W | 750 | 750 | 560× 2 | 560× 2 | 560× 2 |
| | Fan type | | Axial | Axial | Axial | Axial | Axial |
| | ESP | Pa | 0~20 (default) | 0~20 (default) | 0~20 (default) | 0~20 (default) | 0~20 (default) |
| | | | 20～40(customized) | 20～40(customized) | 20～60(customized) | 20～40(customized) | 20～40(customized) |
| DC Inverter compressor | Quantities | | 1 | 1 | 1 | 1 | 1 |
| | Capacity | W | 11,800 | 11,800 | 11,800 | 11,800 | 11,800 |
| | Crankcase heater | W | 27.6×2 | 27.6×2 | 27.6×2 | 27.6×2 | 27.6×2 |
| | Refrigerant oil | gal.(ml) | FVC68D 0.132/ 500 | FVC68D 0.132/ 500 | FVC68D 0.132/ 500 | FVC68D 0.132×2/ 500×2 | FVC68D 0.132×2/ 500×2 |
| Fixed scroll compressor | Quantities | | 1 | 1 | 1 | 2 | 2 |
| | Capacity | W | 15,500 | 15,500 | 15,500 | 15,500×2 | 15,500×2 |
| | Crankcase heater | W | 27.6 | 27.6 | 27.6 | 27.6×2 | 27.6×2 |
| | Refrigerant oil | gal.(ml) | FVC68D 0.132/ 500 | FVC68D 0.132/ 500 | FVC68D 0.132/ 500 | FVC68D 0.132×2/ 500×2 | FVC68D 0.132×2/ 500×2 |
| Refrigerant | Type | | R410A | R410A | R410A | R410A | R410A |
| | Factory Charging | lbs.(kg) | 22(10) | 22(10) | 26(12) | 33(15) | 33(15) |
| Design Pressure (Hi/Lo) | | MPa | 4.4/2.6 | 4.4/2.6 | 4.4/2.6 | 4.4/2.6 | 4.4/2.6 |
| Unit Dimension | Net (W×H×D) | in.(mm) | 37-25/32×63-9/16×30-1/8(960×1,615×765) | | 49-7/32×63-9/16×30-1/8(1,250×1,615×765) | | |
| | Packing Size (W×H×D) | in.(mm) | 40-3/8×70-1/2×32-11/16(1,025×1,790×830) | | 51-9/16×70-1/2×32-1/2(1,305×1,790×820) | | |
| Unit weight | Net | lbs.(kg) | 560(245) | 560(245) | 607(275) | 717(325) | 717(325) |
| | Gross weight | lbs.(kg) | 573(260) | 573(260) | 651(295) | 761(345) | 761(345) |
| Operating Temp. Range- cooling | | ℉(℃) | 23℉-118.4℉(-5℃－48℃) | | | | |

Notes:

1.Nominal conditions

| | | | | |
|---|---|---|---|---|
| Cooling | 27°C DB(80.6°F), 19°C WB(60°F) | 35°C DB(95°F) | 7.5m(24.6ft) | 0m(0ft) |

2.Sound level: Anechoic chamber conversion value, measured at a position 1m(3.28ft) in front of the unit and 1.3m(4.26ft)above the floor.

3.Refrigerant pipe dim.listed here only for when the total equivalent length ＜90m(295.2ft). For the data when total quivalent length ≥90m(295.2ft) please refer to technical manual.

4.The above data may be changed without notice for further improvement on quality and performance.

# Recommended combination table

| Model (capacity) | | N°of outdoor units | N°of compressors | Maximum N° of connectable indoor units | Capacity (kW) | |
|---|---|---|---|---|---|---|
| HP | kW | | | | Cooling | Heating |
| 8 | 25.2 | 1 | 2 | 13 | 25.2 | 27 |
| 10 | 28.0 | 1 | 2 | 16 | 28 | 31.5 |
| 12 | 33.5 | 1 | 2 | 16 | 33.5 | 37.5 |
| 14 | 40.0 | 1 | 3 | 16 | 40 | 45 |
| 16 | 45.0 | 1 | 3 | 20 | 45 | 50 |
| 18 | 53.2 | 2 | 4 | 20 | 53.2 | 58.5 |
| 20 | 56.0 | 2 | 4 | 24 | 56 | 63 |
| 22 | 61.5 | 2 | 4 | 24 | 61.5 | 69 |
| 24 | 68.0 | 2 | 5 | 28 | 68 | 76.5 |
| 26 | 73.0 | 2 | 5 | 28 | 73 | 81.5 |
| 28 | 80.0 | 2 | 6 | 28 | 80 | 90 |
| 30 | 85.0 | 2 | 6 | 32 | 85 | 95 |
| 32 | 90.0 | 2 | 6 | 32 | 90 | 100 |
| 34 | 96.0 | 3 | 7 | 36 | 96 | 108 |
| 36 | 101.0 | 3 | 7 | 36 | 101 | 113 |
| 38 | 106.5 | 3 | 7 | 36 | 106.5 | 119 |
| 40 | 113.0 | 3 | 8 | 42 | 113 | 126.5 |
| 42 | 120.0 | 3 | 9 | 42 | 120 | 135 |
| 44 | 125.0 | 3 | 9 | 42 | 125 | 140 |
| 46 | 130.0 | 3 | 9 | 48 | 130 | 145 |
| 48 | 135.0 | 3 | 9 | 48 | 135 | 150 |
| 50 | 143.2 | 4 | 10 | 54 | 143.2 | 158.5 |
| 52 | 146.0 | 4 | 10 | 54 | 146 | 163 |
| 54 | 151.5 | 4 | 10 | 54 | 151.5 | 169 |
| 56 | 158.0 | 4 | 11 | 58 | 158 | 176.5 |
| 58 | 165.0 | 4 | 12 | 58 | 165 | 185 |
| 60 | 170.0 | 4 | 12 | 58 | 170 | 190 |
| 62 | 175.0 | 4 | 12 | 64 | 175 | 195 |
| 64 | 180.0 | 4 | 12 | 64 | 180 | 200 |

Notes:

Capacities are based on the following conditions:

Cooling: Indoor temperature 27℃(80.6°F) DB/19℃(66.2°F) WB; Outdoor temperature 35℃(95°F) DB/24℃(75.2°F) WB

Heating: Indoor temperature 20℃(68°F) DB/15℃(59°F) WB; Outdoor temperature 7℃(44.6°F) DB/6℃(42.8°F) WB

Piping length: Interconnecting piping length is 7.5m, level difference is zero.

The above combination models are factory-recommended models.

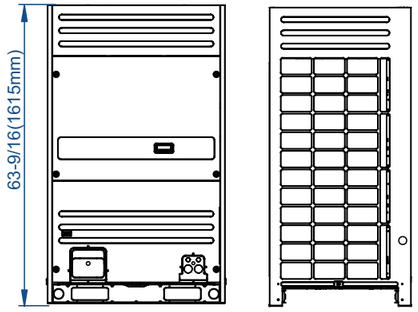
V4 Plus Series

# Dimensions

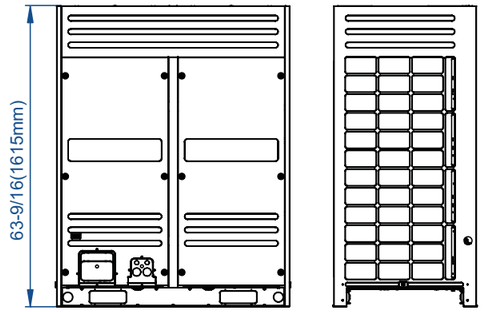
## Body dimensions

Unit: in.(mm)

8、10 HP

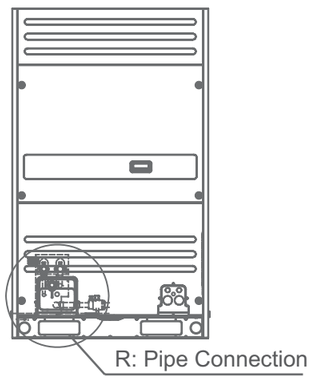


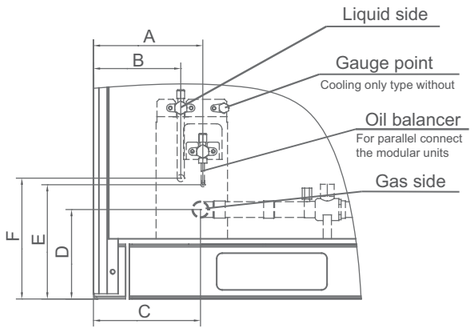

12、14、16 、18 HP




## Pipe connection

Unit: in.(mm)



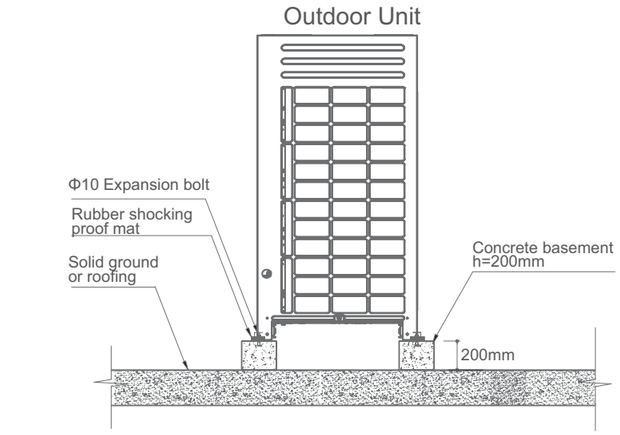



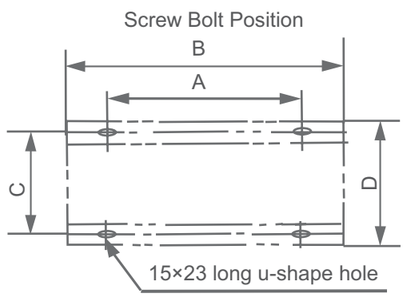

R Section View

| SIZE \ HP | 8HP | 10HP | 12HP | 14HP | 16HP |
|---|---|---|---|---|---|
| A | 7-53/64(199) | | 6-21/32(169) | | |
| B | 6-17/64(159) | | 8-15/64(209) | | |
| C | 7-43/64(195) | | 6-21/32(169) | | |
| D | 6-39/64(168) | | 6-39/64(168) | | |
| E | 8-3/16(208) | | 8-3/16(208) | | |
| F | 8-21/32(220) | | 8-21/32(220) | | |
| Liquid pipe | Φ1/2(Φ12.7) | | Φ5/8(Φ15.9) | | |
| Gas pipe | Φ1(Φ25.4) | | Φ1-1/4(Φ31.8) | | |

## Installation dimensions

Unit: in.(mm)




| SIZE \ HP | 8/10 | 12/14/16 |
|---|---|---|
| A | 32-43/64(830) | 44-3/32(1120) |
| B | 37-51/64(960) | 49-7/32(1250) |
| C | 28-31/32(736) | 28-31/32(736) |
| D | 30-1/8(765) | 30-1/8(765) |

Notes:

(1) Ensure that the outdoor unit is installed in a dry, well-ventilated place.

(2) Ensure that the noise and exhaust ventilation of the outdoor unit do not affect the neighbors of the property owner or the surrounding ventilation.

(3) Ensure that the outdoor unit is installed in a well-ventilated place that is possibly closest to the indoor unit.

(4) Ensure that the outdoor unit is installed in a cool place without direct sunshine exposure or direct radiation of high-temp heat source.

(5) Do not install the outdoor unit in a dirty or severely polluted place, so as to avoid blockage of the heat exchanger in the outdoor unit.

(6) Do not install the outdoor unit in a place with oil pollution or full of harmful gases such as sulfurous gas.

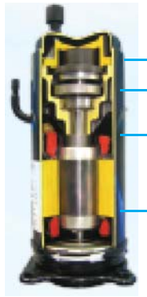
(7) Do not install the outdoor unit in a place surrounded by salty air. (Except for the models with corrosion-resistant function.)

V4 Plus Series

# Technologies

## High efficiency full DC inverter compressor

High efficiency DC inverter compressor reduces power consumption by 25%.



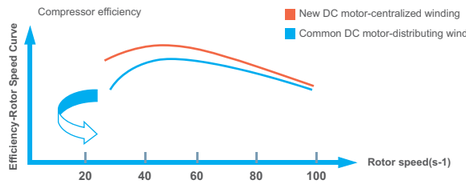
- New structure-enhanced mid-frequency performance
- Specially designed scroll profile for R410A
- More compact, weight reduced by 50%
- Advanced permanent magnet DC motor improves low-frequency band performance

Powerful magnets provide high torque and efficiency and achieve 70% reduction in volume.

Centralizing winding



Distributing winding

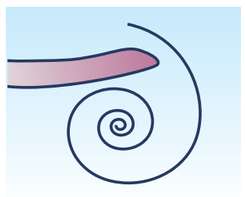



## Fan grille

Optimized fan blade shape with new air outlet grille enhanced air flow volume which greatly improves fan performance and decreases noise.
Also, a higher external static pressure has been achieved up to 40Pa. (0-20Pa is standard, 20~40Pa should be customized.)

## New profile fan blade

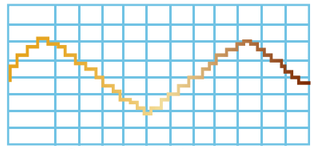
A new blade with sharp edges and a slight curve increases the airflow rate and lowers vibration and airflow resistance.



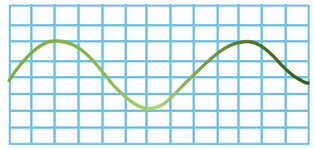


## Smooth 180°sine wave DC Inverter

Adopting the 180° Sine Wave Inverter to smooth motor rotation greatly improves operating efficiency compared with traditional sawtooth wave.



Common sawtooth wave



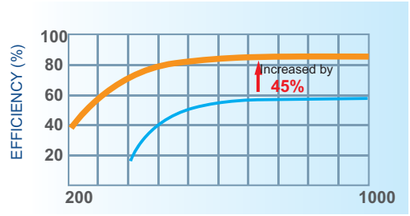
180° Sine Wave DC inverter

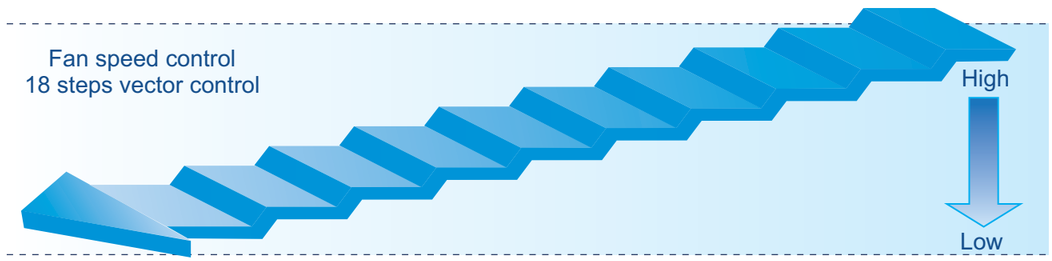
## DC fan motor

According to the running load and pressure, it controls the speed of DC fan to achieve the minimum power consumption.

- Used across entire range of models (from 8 to 64 HP).
- Efficiency improvement up to 45% especially at low speed.
- Wide speed adjustment with 18 steps vetor control.

DC motor



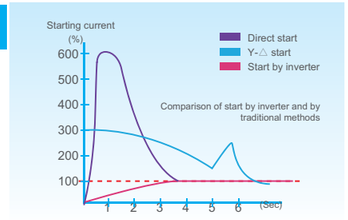

## Multi solenoid valves control technology

Multi solenoid valves control technology in one system. All the solenoid valves equipped in the unit ensure temperature-control precisely, system running steadily and economic to provide a comfortable environment.

# Enhanced Comfort

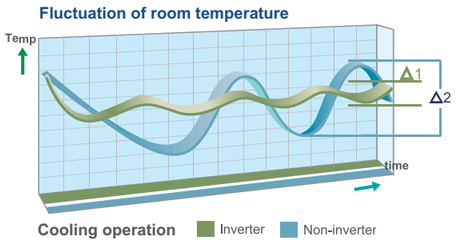
## Intelligent soft start technology

DC inverter compressor soft start function reduces strike to the electric network. This kind of high-performance and low sound scroll compressor operates at a faster rate when starting, reducing start-up time. It also helps the unit to quickly adjust the room temperature to the set level.




## Quick warm-up & cool-down design

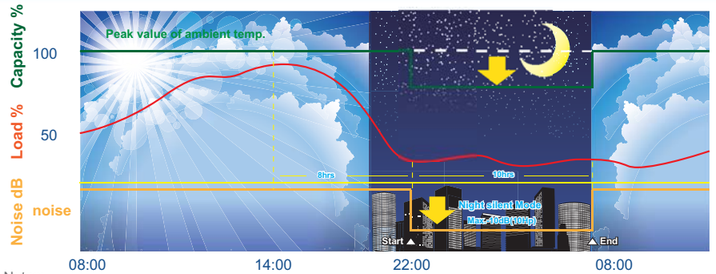
By utilizing the benefits of the inverter compressor, the system can reach full load quickly and shorten the warm-up and cool-down times to provide an immediate and comfortable air solution. Less temperature fluctuation will create a better living environment.




## Night silent operation mode

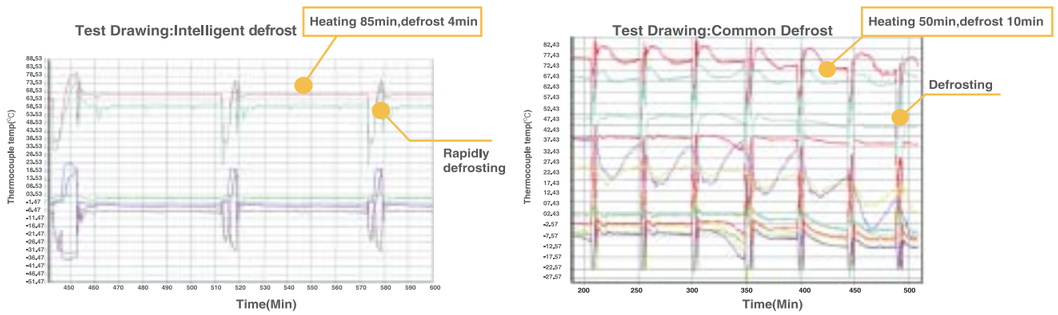
Midea's Night Silent Mode feature which is easily set on the PCB board allows the unit to be set to varies time options during Non Peak and Peak operation time optimizing the units noise output.
Extra silent operation mode can reduce sound level further, minimum 46.8dB (A).
Night silent operation will be activated X hours after the peak temperature during daytime, and it will go back to normal operation after Y hours.

-Model 1→X: 6 hours, Y: 10 hours
-Model 2→X: 8 hours, Y: 10 hours
-Model 3→X: 6 hours, Y: 12 hours
-Model 4→X: 8 hours, Y: 8 hours




Notes:
This function can be activated by setting at site. Temperature(load) curve shown in the graph is just an example.

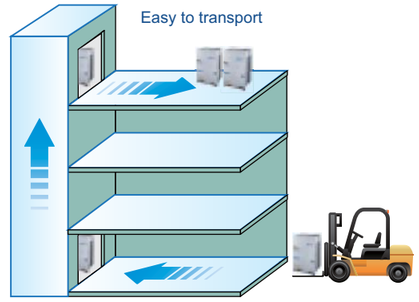
## Intelligent defrosting raises heat capacity*




*V4 Plus C system is without this function.

# Easier Installation and Service

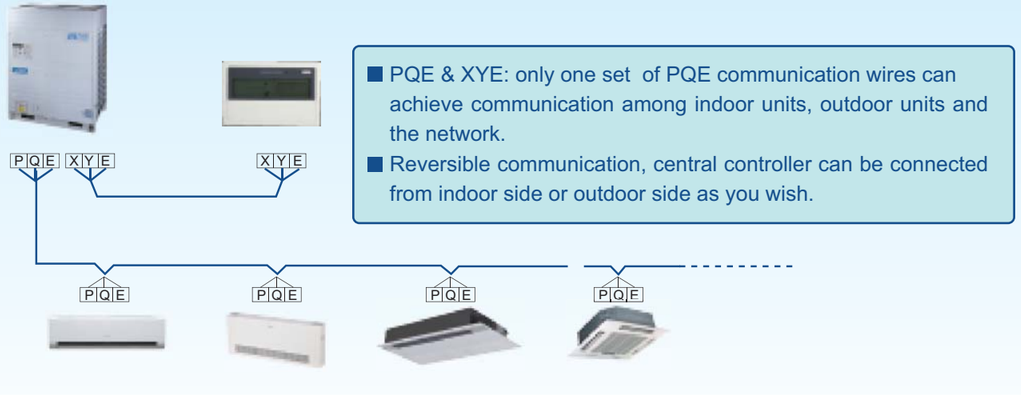
## Compact design for effective use of space




Compact size and light weight design minimizes the installation footprint, reduces the installation floor load, and is easier for transportation. For some projects the units can even be transported through the elevator or forklift, reduce access problem at the jobsite.

## Simple signal line connection

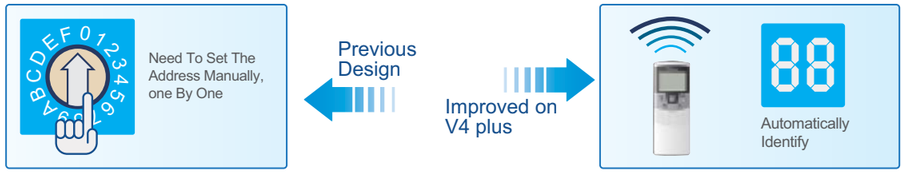
Installation is easier as communication wiring can be shared by indoor & outdoor units . It's easy for the user to retrofit the existing system with a centralized simply connecting to the outdoor units.




- PQE & XYE: only one set of PQE communication wires can achieve communication among indoor units, outdoor units and the network.
- Reversible communication, central controller can be connected from indoor side or outdoor side as you wish.

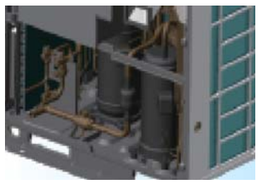
## Auto addressing

The outdoor unit can automatically distribute the addresses to indoor units without any manual settings.
Wireless controller can inquire and modify each indoor unit's address.




## Easy access

The checking window on electric control box for convenient spot checking and status enquiry.



Compressor is located near the door, which simplifies checks and enables valve or compressor parts to be replaced easily.