VRF Outdoor Units - SHRMe

The new Toshiba SHRMe puts the emphasis on evolution, driving excellence in energy savings, expansion in capacity line-up and enhancement in applications. Together, these offer professionals outstanding seasonal efficiency at lower operating cost, faster design, installation and commissioning, superior air comfort and enhanced quality and reliability.

High Efficiency And Low Operating Costs

Full of Toshiba innovations, the new SHRMe achieves an ESEER (European Seasonal Energy Efficiency Ratio) of 8 and above in most capacities. Toshiba's unique combination of twin-rotary compressors and all-inverter-driven control, can adjust the operating speed of the compressors in steps of just 0.1 Hz. This technology when combined with SHRMe all-new 3-row heat exchanger and Toshiba's "intelligent flow" technology ensures both maximum system performance and even capacity distribution throughout the entire system.

Exceptional Quality And Reliability

The SHRMe's innovative dual vane technology reduces variances between the vane and roller, while its unique Diamond-Like Carbon coating technology offers outstanding wear-resistance. Together, these further optimise performance, efficiency, durability and reliability. SHRMe's sophisticated oil management control ensures optimum oil levels inside each compressor and using Toshiba's dedicated oil balance line control, which can actively transfer oil from one condensing unit to another, ensures total reliability for the whole system.

Simultaneous Heating And Cooling Solution For Large Buildings

Superior air comfort
The SHRMe's Automatic Temperature Control system sets minimum and maximum temperatures and maintains air at the desired temperature. Toshiba's new Dual Set Point function instructs the system to stop operation and change mode once the maximum or minimum temperature has been reached. The system allows continuous heating, even during external defrost, while the new soft cooling mode offers personalised air flow for enhanced cool comfort. The SHRMe also features individual on/off temperature control via remote control, when multiple indoor units are connected to a single flow selector box.

Flexible design and quick installation
With its new multi-flow selector units, the SHRMe expands capacity line-up with fewer connections for faster and simpler installation. It also offers extended piping length and operating temperature range for a more flexible design. Improved external static pressure allows flexible unit positioning, whilst Toshiba's unique Wave Tool app enables remote monitoring of CDU operations, an industry first.

Creating Benefits Around Comfort

BENEFITS FOR THE USER

Infinite comfort
Achieved by fully-controllable room temperature, a perfect alternative to traditional heating and cooling systems.

Infinite efficiency
Low operating costs thanks to reduced installation costs and very high levels of efficiency via optimal load adjustment.

Infinite integration
Cooling, heating and fresh air ventilation, all perfectly and conveniently attuned to one another within a single system – and so easy to use!

Infinite reliability
Hassle-free operation based upon decades of experience and intensive testing programs for all systems.

Infinite transparency
Clearly-defined billing so you can quickly review energy costs and consumption.

BENEFITS FOR THE CONSULTANT

Absolute customisation
A wide range of products ensures that the customers' requirements are fully addressed.

Absolute validation
SHRMe is EUROVENT certified and adheres to all current European legislations.

Absolute control
Fully-integrated controls network, allowing unlimited access to the system controls and its operation.

Absolute flexibility
A high degree of system flexibility, aided by a fully-flexible piping specification and an extremely compact modular design.

Simplified design
Toshiba Design Airs software makes the selection of a system's components simple.

BENEFITS FOR THE INSTALLER

So simple
One supplier – one point of contact for a total solution: cooling, heating, hot water, ventilation and controls.

So versatile
Maximised installation flexibility.

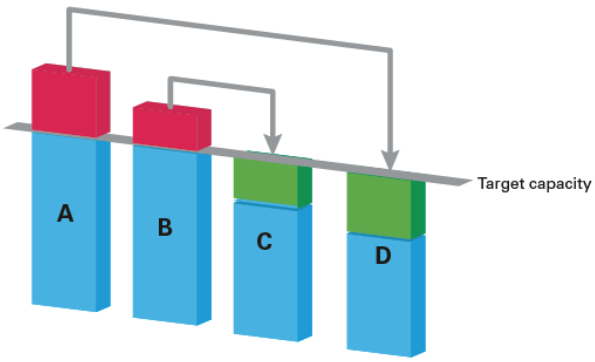
So convenient
Easy access for all service and maintenance needs.

So professional
Intensive training and instruction offered by local Toshiba-trained experts.

So accessible
Simplified and swift commissioning assisted by the all new Wave Tool App.

Intelligent Flow Technology

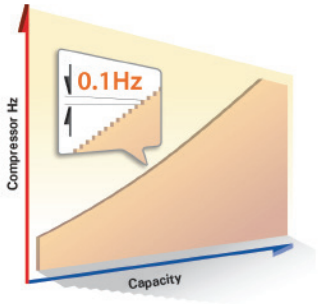
The unique Intelligent Flow Technology control continually adjusts the operation of both indoor and outdoor units, based on feedback from multiple sensors. While the refrigerant flow to each indoor unit is precisely controlled by the outdoor unit, ensuring even capacity distribution throughout the system, the evaporative and condensing temperature is automatically adjusted to maintain optimum indoor room temperature, regardless of the unit's load or its physical distance from the outdoor unit.



Excess capacity in units A & B can be re-distributed to units C & D, ensuring perfect operation throughout the entire system. Toshiba "IFT" technology ensures that any surplus capacity can be re-distributed in order to achieve optimum performance and efficiency throughout the entire system.

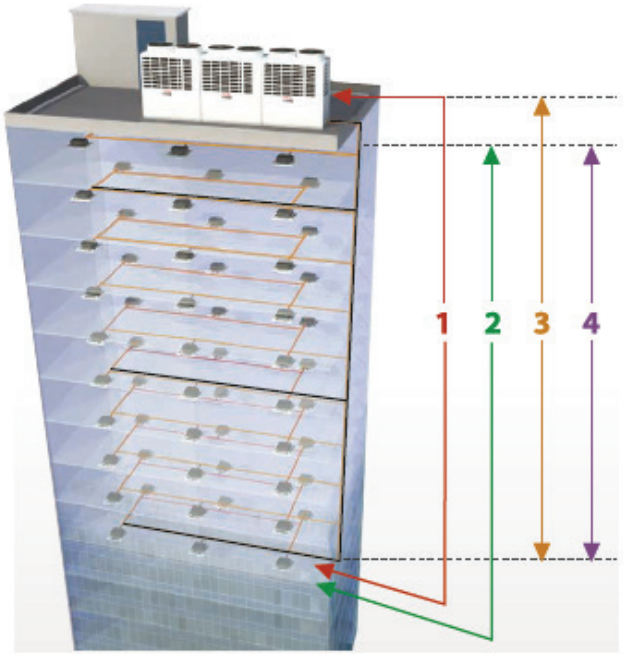
Infinite variable control

This feature has continually evolved and been further developed since its inception by Toshiba engineers back in 2004 with the original SMMS system. The control has the ability to adjust the compressor rotational speed in near seamless 0.1 Hz steps. This control when matched with Toshiba's newest and latest twin-rotary compressors, allows the system to respond precisely to the capacity needs of the end user, while minimising energy losses.



Piping design flexibility

Toshiba's piping technology makes them one of the industry's leaders in system flexibility and ease of installation and with the new SHRMe system, the level of flexibility has increased further, giving more options to the contractor and installer alike.



1 Total piping length

Applied with Toshiba's unique and greatly improved technology, SHRM-e can reach up to 1,000 meters maximum piping length.

Total piping lengh
1,000 m*

2 Farthest equivalent length

The maximum equivalent distance between the outdoor unit and the farthest indoor unit tops at 235 meters, a best-in-class for the industry.

Farthest equivalent length
200 m

3 Height between outdoor unit and indoor unit

Another industry best-in-class feature is the maximum vertical distance between the outdoor and indoor units, which can extend up to 90 meters. SHRM-e's enhanced piping capabilities results in more benefits for system design and installation flexibility, as well as lower installation costs.

90m**

4 Piping design flexibility "FS unit-FSU"

Farthest pipe from FS unit-Indoor unit
50 m***

As the SHRM-e multi-flow selector and indoor unit can be as far as 50 meters apart, the refrigerant piping can be lengthened, offering more flexibility in design to make every space both more comfortable and attractive.

* Above 34HP combination
** It is 70 m for normal time, and has some specific conditions for 90 m, 50 m if piping length between Indoor units is more than 3 m
*** It is allowed only if you use the Multi port FS unit

The latest generation single-port flow selector unit increases the design flexibility of the system, offering longer distances of up to 50 m between flow selector box and indoor units, for example where noise level is of paramount importance, and connection of up to 8 indoor units onto one individual flow selector box.

The use of multi-flow selector units increases the design flexibility of the system, offering the same overall capacity and allows much faster and simpler installation, while layout design is more flexible, thanks to simplified branch and branch connections. Reducing the length of the branches also allows increased capacity. This configuration is available with either group or individual remote control.

SHRMe
New single-port FS unit

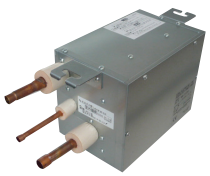
FS box to indoor unit up to 50 m

SHRMe
New multi-port FS unit

x 6 branch

x 4 branch

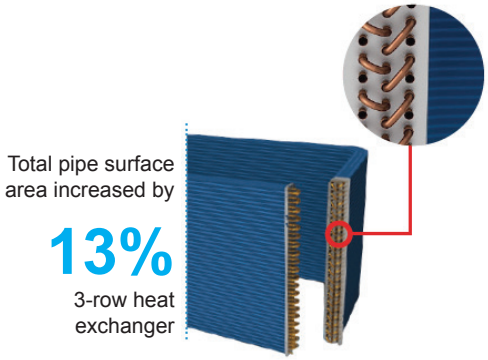
Previous model
Single FS unit



Max. 15 m

Advanced heat exchanger

Toshiba's new 3-row heat exchanger design, with reduced pipe size from 8 mm to 7 mm and increased total number of passes, improves both system performance and efficiency. While the 3-row heat exchanger design allows the condensing unit to automatically select the most suitable heat exchanger size, precisely matching the indoor capacity load, its 4-sided design ensures maximum possible flow rate across the entire coil, maximising system efficiency.



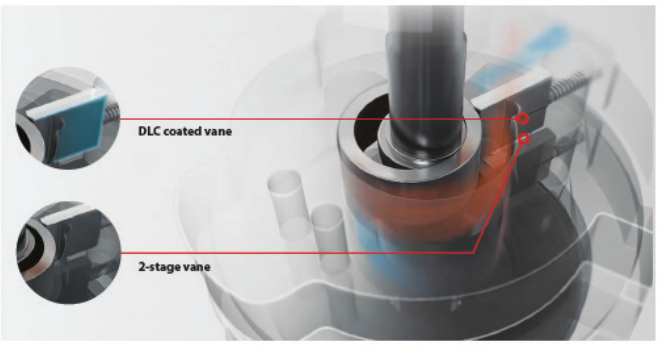
Smart automatic temperature control system

The SHRMe's Automatic Temperature Control (ATC) system has been designed to enhance user comfort and reduce energy consumption. Each user can easily set minimum and maximum temperatures with the ATC, which automatically maintains the air at the desired temperature. Once the maximum temperature has been reached, the intelligent Dual Set Point function will tell the system to shut down and change mode to adjust the temperature to the minimum required, or vice versa. This enhances efficiency and reduces running costs, by extending the thermal off periods, when the unit stops between changes in heating and cooling mode.

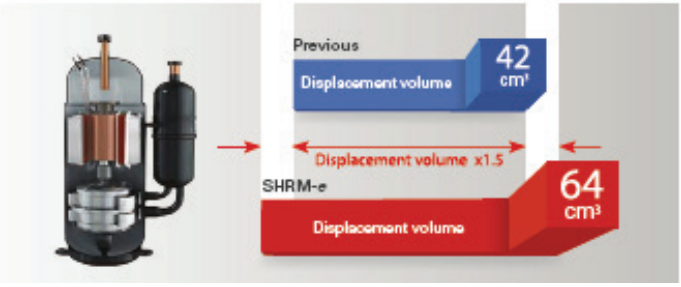
Innovative individual ON/OFF and temperature control

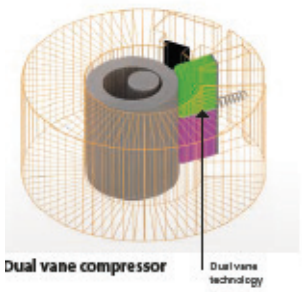
The innovative multi-flow selector allows smart temperature control in each space via individual remote controls. This meets users' different temperature requirements for maximum comfort, and if rooms are empty, the unit can be switched off. This solution helps reduce energy waste, improve efficiency and save on overall costs.

More durable with leading twin-rotary compressor technology
The advanced technology used within the SHRMe units results in a robust and durable system. The innovations made with Toshiba twin-rotary compressor have resulted in an even stronger and more reliable system, extending the operational life and, thus, reducing the overall maintenance costs.



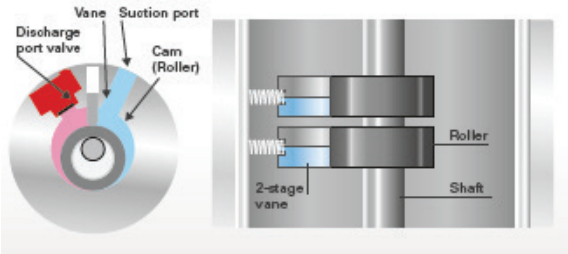
Wide-range compressor
Using new cutting-edge technology, Toshiba's new twin-rotary DC driven compressor can operate in a much wider range of rotational speed, giving increased performance, while maximising energy efficiencies.





Dual vane technology for enhanced performance
The all-new dual vane technology reduces any variances in the contact area between the vane and roller, even when the compressor is operating at very high speeds. This results in minimal compression losses inside the compressor, further optimising its performance, efficiency and reliability.

The Diamond-Like Carbon coating
The new Toshiba Diamond-Like Carbon coating technology is unique to Toshiba VRF compressors. It covers the wear surfaces on compression vanes for outstanding hardness and wear-resistance, enhancing both the compressor's performance and durability and confirming Toshiba's reputation of providing exceptional reliability.



Optimised heating operations
The SHRM-e allows continuous heating, even during external defrost operations, thanks to the new hot gas bypass control. Indoor units will now operate continually, with only a minimal reduction in capacity output. This results in an uninterrupted flow of warm air, ensuring maximum comfort to the end user.