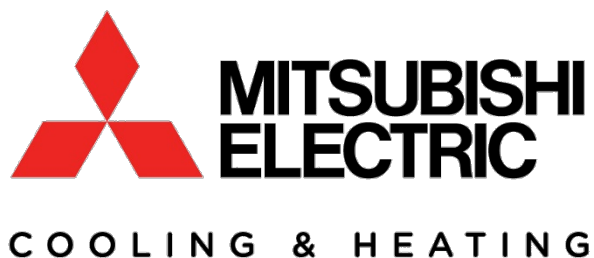




Mini-Split Heat Pump Information Booklet

- ◆ About Us
 - ◆ What is a Mini-Split Heat Pump?
 - ◆ Control Capabilities
 - ◆ Financing Opportunities
 - ◆ Rebate Programs
 - ◆ Service Department
 - ◆ 12-Year Mitsubishi Warranty



*Contact us today for a free HVAC or plumbing
quote!*

projects@nmdgreen.com

About Us

Nelson Mechanical Design Inc. is Martha's Vineyard leading "green" mechanical contractor. We take the utmost pride in bringing our customers the top of the line mechanical systems for residential and small commercial establishments. We specialize in designing and installing mechanical systems including heating, cooling, ductless heat pump systems, ducted heat pump systems, geothermal systems, water treatment systems, well water services, ventilation systems and control systems for all of the systems listed above.

We have received multiple awards over the years for our emphasis on a "green" environment. Awards have included 1st Place in "Most Innovative Design" and 2nd Place in "Best Residential Green Design" in the nationwide Green Awards held at Greenbuild 2009 in Phoenix AZ.

But it doesn't stop there... The NMD team has made it our personal goal to bring our customers the most efficient, energy saving equipment on the market. We have adjusted and followed the market as technology grows and new innovations are released. We make it a point to deliver these systems to you, our customers.

This is our thirteenth year on the island of Martha's Vineyard and we have had no thoughts about slowing down to reach our ultimate goal... Make Martha's Vineyard the greenest, cleanest island possible. With our continued research and training programs, we make certain our technicians and installers are up to date with the newest technology as we know this is a vital asset to reaching our main objective.



What is a Mini-Split Heat Pump?

Ductless Mini-Split Heat Pump's are taking the HVAC industry by storm. They eliminate the need for separate heating and cooling systems in homes as the two systems are merged into ONE highly efficient system. The engineers who work for the large manufacturers have created a small reversing valve in the outdoor units which reverse the flow of refrigerant depending on what the controller is calling for. This gives you both heat and air conditioning in ONE small, compact system at the push of a single button!



Example of a Mitsubishi FH Series High
Wall Mounted Unit



Example of a Mitsubishi KJ Series
Floor Mounted Unit



Example of a Mitsubishi KA Series Flush
Ceiling Cassette Unit

Mini-Split Components



The conduit shown to the left is what holds the refrigeration lines, condensate line & communication wires. The conduit comes in white, gray & ivory.



Above shows the outdoor heat pump mounted to a 12" Quick-Sling Snow Stand.

It is essential to keep your heat pump elevated at a minimum of 12" above ground level to prevent snow and debris build up.

The picture below is showing the connection of the outdoor heat pump to the indoor unit. The units are connected by two refrigeration lines: liquid and vapor. They are contained in the fortress seen above, along with the condensate drain line and the communication wire.

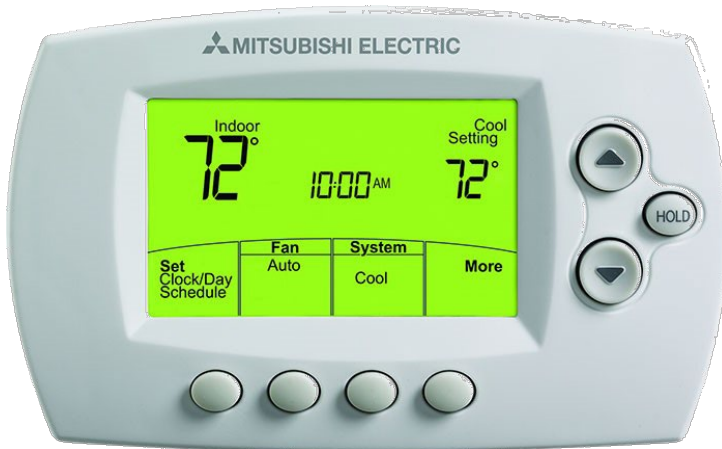


Control Capabilities

Whether you're a full time islander or a part-time summer resident, our control systems are for you.....

We have kept up to date with the latest technology and are proud to announce, **our customer's now have the capability to control their HVAC systems right from your smart phone, tablet or computer!**

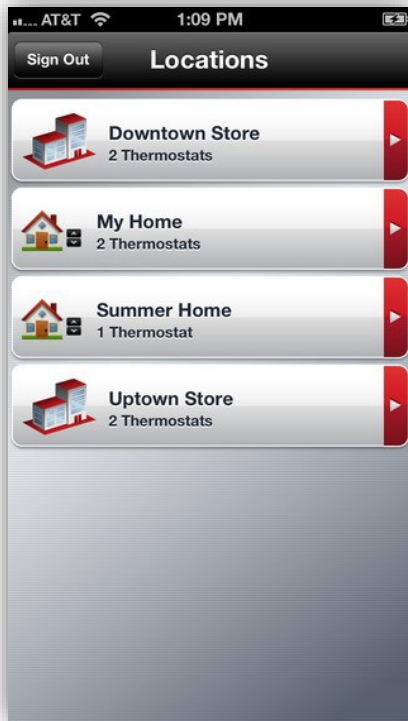
Shown below are the wall mounted thermostats that you can connect to the Honeywell Redlink Gateway. The thermostat and gateway combination gives you the opportunity to control your system from your smart phone or computer. Another feature of this combination is a notification alarm.. If the temperature drops below or above your custom set point, you will be notified via phone or email IMMEDIATELY (no more worrying about a failing system going unnoticed!):



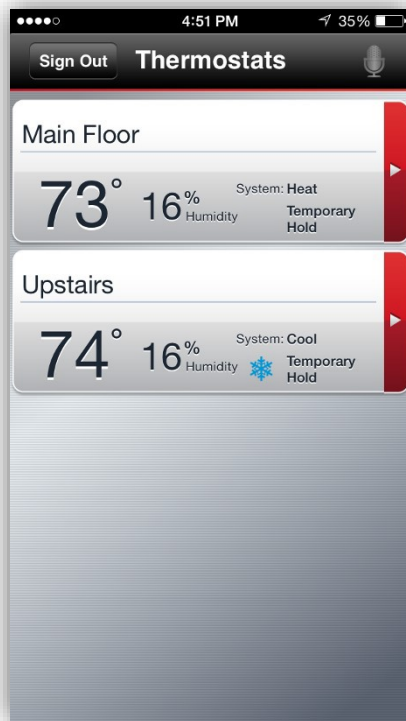
MHK-1 Wall Mounted Wireless Thermostats



Total Comfort Main Menu



Total Comfort Individual Thermostats



Total Comfort Control Menu

For Individual Thermostats



Manufacturer Cost Comparison

Below is a comparison of Fujitsu, Daikin and Mitsubishi single-split mini splits. This graph compares the equipment's efficiency ratings, warranty length, and performance at temperatures Martha's Vineyard regularly experiences.

Single Zone Mini-Split Comparisons				
Manufacturer	Efficiency Rating (SEER/HSPF)	Heating/Cooling Capacity (BTU/hr)₁	Warranty Length₂	Estimated Costs₃
DAIKIN (09HVJU)	26.1/11.0	6,800/8,640	12 Years	\$7,629
FUJITSU (ASU9RLS3)	33.0/14.0	15,400/7,910	7 Years	\$6,686
MITSUBISHI (FH09NA)	30.5/13.5	11,000/13,180	12 Years	\$6,698
DAIKIN (12HVJU)	24.2/10.6	9,500/11,520	12 Years	\$7,893
FUJITSU (ASU12RLS3)	29.3/13.8	16,600/10,530	7 Years	\$6,885
MITSUBISHI (FH12NA)	26.1/12.5	14,000/14,940	12 Years	\$7,583
DAIKIN (15HVJU)	21.0/10.0	10,700/14,390	12 Years	\$8,035
FUJITSU (ASU15RLS3)	25.3/13.3	21,000/12,760	7 Years	\$7,054
MITSUBISHI (FH18NA)	22/12	18,300/20,870	12 Years	\$7,388

All data found on this chart is from the Mitsubishi, Daikin and Fujitsu Engineering Manuals.

- 1. The heating and cooling capacities are based off of 5 degrees and 90 degrees outdoor ambient temperature.*
- 2. Warranties may vary depending on equipment and installing company..*
- 3. The estimated costs are for the parts, labor and equipment for these particular 1:1 systems.*

Financing Opportunities

Cape Light Compact Program

Cape Light is a local energy program that is sought to give the people of Cape Cod the opportunity to finance a new heating and cooling system. Nelson Mechanical has worked with Cape Light on numerous projects and we recommend all of our customers to take full advantage of the opportunities they offer.

What They Offer:

- ⇒ 7 Year 0% Interest Heat Loan
- ⇒ Cash back rebates on High Efficient Heating & Cooling Systems
- ⇒ Energy Saving Recommendations

See the following page for a step by step process on obtaining the heat loan. For more information regarding rebates, energy saving recommendations and other incentives Cape Light offers, call **(800)-797-6699**.

Payzer Financing

Payzer is a third party financing company whom we have teamed up with. Payzer brings our customers the opportunity to explore further financing options. Unlike Cape Light Compact, Payzer, gives our customers the chance of being financed for up to \$50,000 within 30 seconds of applying.

What They Offer:

- ⇒ Multiple financing options. From 1 year to 12 year loans.
- ⇒ Immediate cash for projects up to \$50,000
- ⇒ Smart phone app to track loan and payment process

If interested, ask your Nelson Mechanical sales person for more information about this program.

The logo for Payzer features the word "payzer" in a bold, red, italicized sans-serif font. The letters have a white outline and a slight shadow effect. A horizontal line with a motion blur effect passes through the middle of the letters. A small "TM" trademark symbol is located at the top right of the word.

The All-In-One Financial Tool

Massachusetts Save Rebate Program

The Massachusetts Save Rebate Program's main goal is to continue to keep the Commonwealth of Massachusetts as the #1 state in the nation for energy efficiency.

The Mass Save program's rebates are strictly based off efficiency ratings, not capacity. The efficiency ratings are broken down into two factors, SEER (Seasonal Energy Efficiency Rating) and HSPF (Heating Seasonal Performance Factor) and if your equipment qualifies under Mass Save ratings, then you earn money back!

Standard Mini-Split Heat Pump Rebates			
Equipment Type	Delivery Method	Efficiency Requirements	Rebate Amount ¹
Mini-Split Heat Pump	Non-Ducted	Must be on the NEEP Qualified Product List. Visit NEEP.org	\$150 per ton
	Ducted, Mixed-Ducted	AHRI SEER ≥ 15, HSPF ≥ 9	\$350 per ton

Fuel Optimization Rebates					
Equipment Type	Primary Fuel Type	Delivery Method	Efficiency Requirements	Additional Requirements	Rebate Amount ¹
Mini-Split Heat Pump	Oil or Propane	Ducted, Mixed-Ducted	AHRI SEER ≥ 15, HSPF ≥ 9	Integrated Controls ² required unless central heating system is removed ⁴ . Refer to qualified product list at MassSave.com/ICQ PL	\$1,000 per ton
		Non-Ducted	Must be on the NEEP ³ Qualified Product List. Visit NEEP.org		\$1,600 per ton
	Electric Heat	Ducted, Mixed-Ducted	AHRI SEER ≥ 15, HSPF ≥ 9	900 kWh difference between sum of 3 winter usage and 3 lowest-usage months	\$1,000 per ton
		Non-Ducted	Must be on the NEEP ³ Qualified Product List. Visit NEEP.org		
Integrated Control ²	Oil or Propane	Ducted, Mixed-Ducted, Non-Ducted	Add-on to existing mini-split heat pump	Refer to qualified product list at MassSave.com/ICQ PL	Up to \$500 per indoor unit, max of \$1,500

¹ Actual tons are calculated based on AHRI cooling capacity divided by 12,000btus. Rebate amount based on actual tons.

² Integrated Controls are either approved control packages or dual fuel thermostats that switch between an heat pump and a Central Heating System

³ NEEP requirements meet or exceed SEER ≥ 15, HSPF ≥ 10, COP 1.75 at 5°F

⁴ The sponsors of Mass Save do not recommend fully replacing existing central heating systems with heat pump equipment. Customers that choose to do so may access the Fuel Optimization incentive levels without the installation of an integrated control.

Cannot be combined with other rebates for same equipment. Please see Terms & Conditions for full requirements.

Nelson Mechanical assures that we design each heating and cooling system to qualify for the best rebates available. This not only guarantees our customers to receive the highest efficient equipment on the market, it makes certain you will get as much cash back as possible for every install. See the next page for the list of rebates each system qualifies for:

Equipment Warranty Information

Mitsubishi Diamond Dealer-Elite Warranty Information

Notwithstanding the foregoing, if the System is installed in a residential single-family home by a MEUS DIAMOND CONTRACTOR and registered within 90 days from installation, the parts and compressor will be warranted for a period of 12 years, to the original owner, so long as the original owner resides in the home. Specifically, if any parts and/or the compressor should prove defective due to improper workmanship and/or material for a period of twelve (12) years from the date of installation, MEUS will replace any defective parts or compressor without charge for the part or compressor. The replacement parts and/or compressor are warranted for the remainder of the original 12-year warranty period. Parts and/or compressors used for replacement may be of like kind and quality and may be new or remanufactured. Defective parts and/or compressors must be made available to MEUS in exchange for the replacement parts and become the property of MEUS.

Registration Process

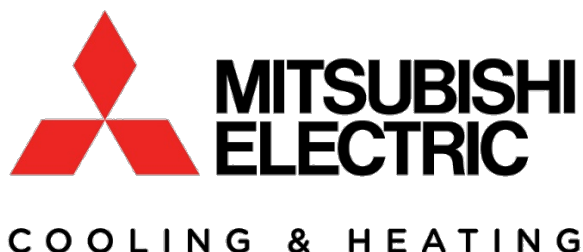
After the final payment for your project is received. The project manager for your project will register all qualified equipment through the Manufacturer. The warranty certificate will be submitted to the customer in the "hand-off" package.

Nelson Mechanical Warranty Information

Our Company offers an industry standard 1 year parts and labor. If you have trouble with a part or piece of equipment (that we have provided) within one year of install, we shall repair it without charge on parts or labor. This does not include air and water filters or other items that need service more frequently than one year's time.

JBA Extended Labor Warranty Information

Nelson Mechanical has teamed up with JB & Associates to offer our customers an additional warranty on labor. This will cover our customers for costs on problems that may arise and require our technicians to work on your system. Whether it's a compressor failure or a thermostat issue, adding the JBA warranty for coverage will assure that our customers will not get hit with any additional service fees down the road. Plans range from 2 to 12 year packages. Please ask your Project Manager for more details on these packages



Our Service Department

Our Service Team

At NMD, we take tremendous pride in our work as without high quality work, our operation and end goal of being the best of the best when it comes to HVAC and plumbing would not be possible. That being said, we urge our customers to treat their equipment properly and maintain it according to manufacturer specifications, as not taking care of your equipment properly can result in failure of equipment and in short terms, cost you a lot more money than you ever intended on spending for your heating and cooling system.

Prevention

Why fix something that isn't broken ? Great question... Well when it comes to any equipment, whether it is your car or your HVAC system, there are normal issues that occur with wear and tear over periods of time. Especially in our North East climate. The combination of salt water, snow, wind, rain, and sometimes extreme heat can put a toll on your heating and cooling equipment for sure.

Avoid the inevitable and keep your equipment running at "tip top" shape 365 days a years 7 days a week... By signing up for one of our service plans, you can avoid any tenant phone calls in the middle of July complaining that their AC has shut off because of something that could have been prevented by one of our routine maintenance packages... Now your looking at not only a complaining tenant and a potential loss of rental income but your also looking at an emergency service call in the middle of our busiest season! Yikes!

Like I said earlier, avoid the inevitable and sign up for our routine maintenance packages, a couple hundred dollars now could save you a couple thousand in the near future ! You can find our flat rate maintenance packages on the next page!



Pictured Above: Two of our professional HVAC technicians checking pressure on the outdoor condenser to make sure the system is operating correctly .



Pictured Above: A frozen outdoor condensing unit. This can be caused by air flow blockage or lack of refrigerant.

Preventative Maintenance: Flat Rate Pricing

To you, our valued customer, we have put together some simple flat rate pricing for the preventative maintenance of your plumbing and HVAC systems in your home. We realize that some customers want a brief check on all systems, while other customers need or require a visit that is more concise. The packages below will cover this wide range of preferences. Houses that are used seasonally may want maintenance done once a year. Homes with mechanical systems that are active year-round should have their systems service twice a year. We focus on the heating systems in the fall and cooling systems in the spring. We urge our customers to leave it up to the trained professionals to assess any cleaning that must be done on your system as cleaning it yourself may damage control boards or internal parts to your system.

Mini-Split & Ductless Systems

Option A – Mini Split Quick Check:

\$250.00/per visit

- Visual inspection of indoor units for damage, leaks, cleanliness.
- Visual inspection of outdoor units for damage, leaks, cleanliness.
- Replace batteries in all wireless controllers plus price of batteries.
- Clean washable filters.
- Check for correct operation by measuring the discharge and return air temperature on the indoor unit.
- * Good for up to 3 indoor units.

Option B – Mini Split Indoor Unit Deep Cleaning:

\$125.00/Head

- If your indoor coil looks dirty when you remove the washable filter, it may be time for a cleaning.
 - Protection of your wall, floors, and furniture with specialized cleaning kit.
 - Coil cleaning with environmentally safe cleaning solution.
 - Addition of condensate drainage system sanitizing tablets.
 - * Price good for high wall units. Other style units are subject to an additional charge of \$60.00/unit.
- ⇒ Option A must be done in conjunction with this package.

Option C – Mini Split Outdoor Unit Deep Cleaning:

\$125.00/Unit

- If you can see dirt and debris in the fins of the outdoor unit, it may be time for a cleaning.
 - Spray and wash outdoor unit coils with environmentally safe cleaning solution.
 - Rodent prevention measures.
 - Prune any foliage that has grown in around the unit.
 - Clean electrical compartment to protect control boards and other electrical devices.
- ⇒ Option A must be done in conjunction with this package.

Ducted HVAC Systems

Option A – HVAC Quick Check

\$250.00

- Visually inspect all HVAC equipment for damage, leaks and corrosion.
- Test for the correct operation of HVAC systems.
- Replace batteries in all thermostats.
- Replace air filters.
- * Good for up to two systems.
- * Parts such as air filters and batteries not included.

Option B – HVAC Indoor Unit Service

\$ 125.00/Unit

- Equipment such as air handlers, furnaces, boilers, ERVs/HRVs, humidifiers, dehumidifiers.
- Check control wiring.
- Clean condensate drainage systems.
- Clean cooling/heating coils.
- Test burner operation.
- Test zoning operation.
- * Option A must be done in conjunction with this package.
- * Parts such as humidifier pads, humidifier water filters, cleaning products, sanitizer tablets, etc. are not included.

Option C – HVAC Outdoor Unit Service

\$125.00/Unit

- Equipment such as heat pumps or air conditioning condensers.
 - Check control wiring.
 - Clean refrigeration coil.
 - Rodent prevention measures.
 - Prune any foliage that has grown in around the unit.
 - Clean electrical compartment to protect control boards and other electrical devices.
 - Test for correct operation.
- Option A must be done in conjunction with this package.

Plumbing Winterization & Turn-On

Option A – Plumbing Quick Check

\$250/Per Visit

- Mobilization
- Survey all plumbing equipment for leaks and correct operation.
- Drain down/turn on up to three fixtures i.e. outside shower, hose bibb, irrigation main.
- * Add food grade antifreeze for trap protection (cost of antifreeze not included).

Option B – Drain Down/Turn On Each Additional Fixture

\$30.00ea.

- Service to additional fixtures not included in package A.
- Must be done in conjunction with package A.
- Fixtures such as hot water heaters, drain points, toilets, sinks, ice maker connection, dish washer connection, shower valves, outside fixtures, etc.
- * Add food grade antifreeze for trap protection (cost of antifreeze not included).

Option C – Hot Water Heater Service

\$250.00/unit

- Check for correct operation.
- Tankless hot water heaters: flush heat exchanger.
- Electric tank type: check thermostats and elements.
- Propane fired: clean burner chamber, check flue piping.
- * Price is in conjunction with Option A, otherwise normal mobilization charges may apply.
- * Does not include the cost of consumables and parts such as tankless cleaning solution, electric elements, thermostats, etc.



To the left: Licensed plumber turning off/on water supply for a resident on the island!



Above: Avoid this reoccurring issue and make sure your home is drained down before winter!

Water Treatment, Service & Maintenance

Option A – Water Treatment Quick Check

\$375.00/Per Visit

- Water quality test for iron, PH, manganese, and hardness.
- Check for correct settings on water treatment heads.
- Check for motor operation.
- Check for leaks.
- Check for pistons to be freely turning.
- Run backwash cycle and check for correct operation.

Option B – Control Valve Rebuild

\$300.00/Head

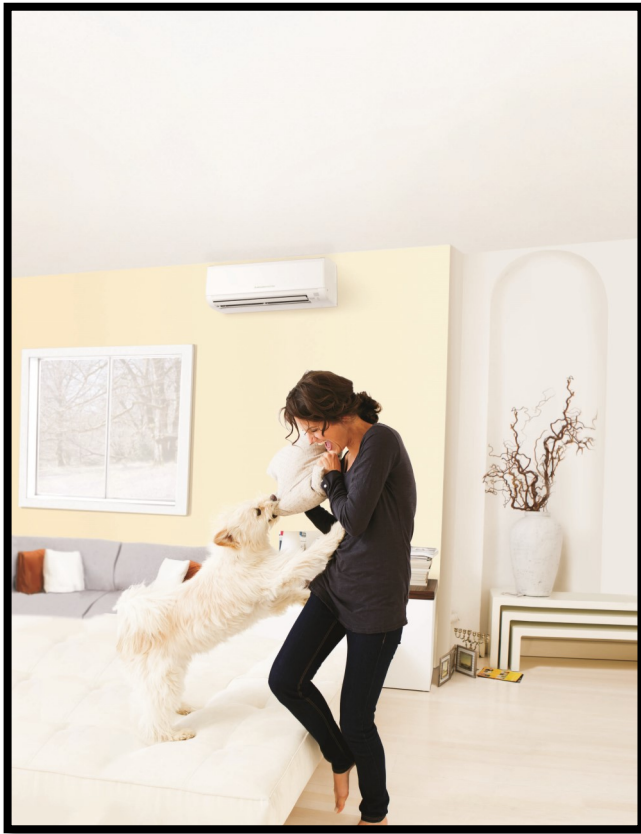
- Put water treatment head into bypass.
- Remove head and disassemble.
- Install new seals, spacers, and piston (parts included).
- Lubricate all moving parts with manufacturer approved lubricant.
- “Top off” calcite if applicable (cost of calcite not included).
- Reassemble heads and put the head back into service.
- Put the system into backwash and check for correct operation.
- Must be in conjunction with Option A.

Option C – Re-bed Media Tanks

\$750.00/Tank

- Test water quality before and after water treatment plant to confirm effectiveness.
- Put system into bypass.
- Remove control valve head.
- Remove tank from the residence or building.
- Wash and rinse out tanks.
- Re-bed with new media (gravel and Smart-Blend, media included for a 1.5 cu. ft. tank, larger tanks may have additional media charges)
- Reassemble tank and head.
- Put system back into operation.
- Place system into backwash.
- Retest for water quality.
- Confirm setting and correct operation of the system.

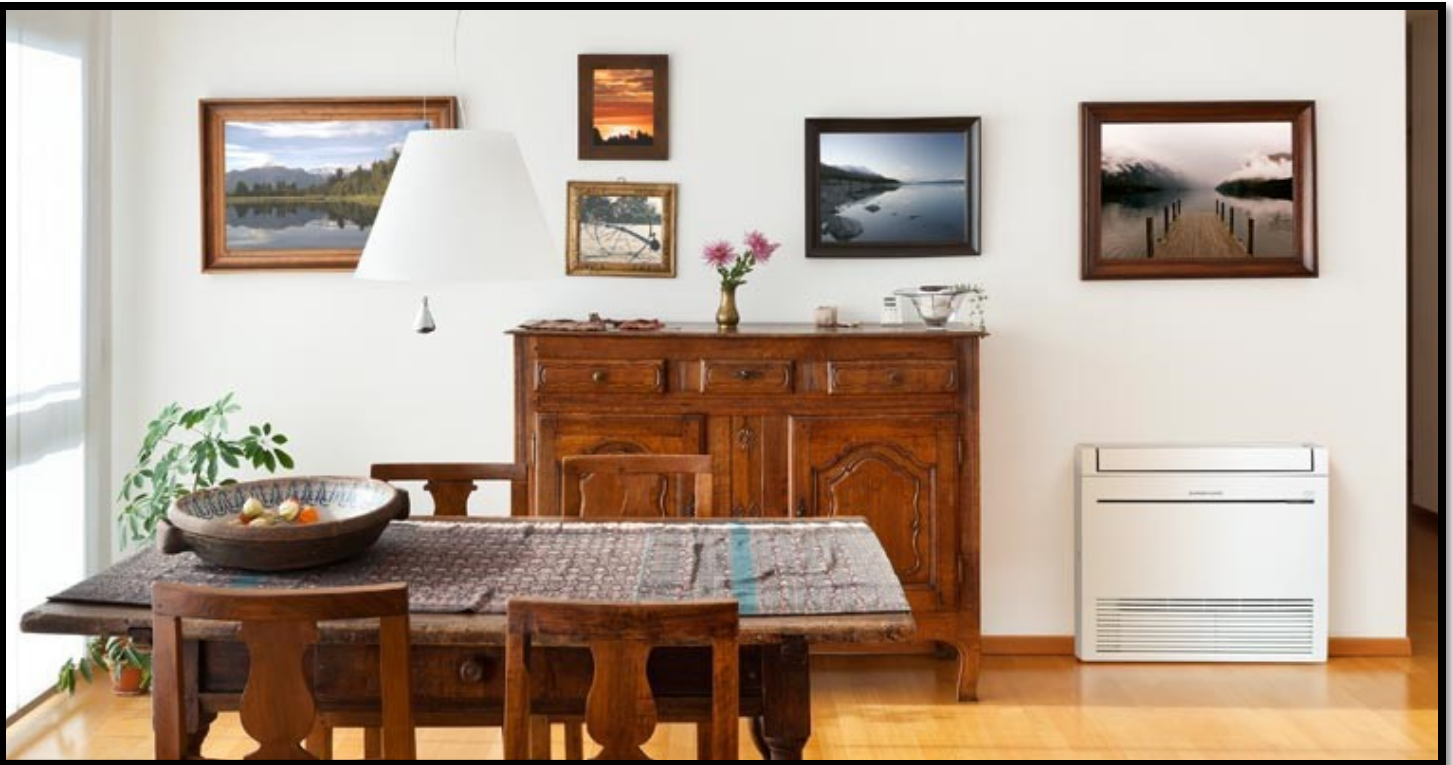
Equipment in "Real Life" Applications



Above: A couple examples of the Mitsubishi Hyper Heat indoor wall mounted units.

Below: An example of a Mitsubishi Hyper Heat indoor floor mounted unit.





Above: An example of a Mitsubishi Hyper Heat floor console

To the Left: An example of a Mitsubishi Hyper Heat outdoor Heat pump. Please note snow stands are required for warranty purposes

Below: Outdoor conduit shown running from the outdoor unit to three indoor units.



MITSUBISHI
Diamond
Dealer



