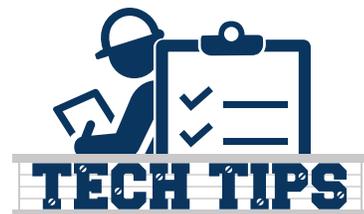




MITSUBISHI SINGLE-ZONE CHARGING TIPS

Here are some helpful tips to clarify what charging methods we have for single-zone Mitsubishi system installations.

Ductless units are critically charged, so we must take the necessary steps to ensure the unit you install will provide proper performance for the life of the equipment. If not, you will certainly see premature failures, performance issues and comfort concerns.



Single-Zone (M-, NV- and P-Series)

Single-zone M- and Nv-Series units generally come pre-charged for about 25 ft. of lineset. You will see that there are models that don't have additional charge adders.

P-Series units have more opportunities with function and more robust applications, so we must understand charging P-Series units will have different standards than the M and Nv units. Many P-Series units come pre-charged for 70 ft. of lineset or as much as 100 ft. Again, some may not have any charge adders at all.

If you have a shorter lineset than the factory pre-charge length, you don't need to remove, add or mess with the charge at all. However, if your lineset is longer than the pre-charge allowance, you will need to provide an additional charge.

The charge adder will vary with the unit and the lineset size, so you must refer to the installation guide for the specific unit you're working with. In some cases, there may not be any charge adders at all!

In the below example, this unit (N*XSXS18-36k BTU NV series) is pre-charged for 25 ft. of lineset. The 18k BTU unit would need 1.08 oz. per every 5 ft. of additional pipe. The 24-36k units would need 2.69 oz. per every 5 ft. of additional pipe.

4.1. Refrigerant pipe (Fig. 4-1, Fig. 4-2)

- Check that the difference between the heights of the indoor and outdoor units, the length of refrigerant pipe, and the number of bends in the pipe are within the limits shown below.

Models	Ⓐ Pipe length (one way)	Ⓑ Height difference	Ⓒ Number of bends (one way)
NAXSKS18A112A*	Max. 100 ft (30 m)	Max. 50 ft (15 m)	Max. 10
NAXSKS24A112A* NAXSKS30A112A* NAXSKS36A112A*	Max. 100 ft (30 m)	Max. 100 ft (30 m)	Max. 10

- Height difference limitation is defined regardless of which unit, indoor or outdoor, is positioned higher.

- Refrigerant adjustment ... If pipe length exceeds 25 ft. (7.5 m), additional refrigerant (R410A) charge is required.
(The outdoor unit is charged with refrigerant for pipe length up to 25 ft. (7.5 m).)

Pipe length	Up to 25 ft (7.5 m)	No additional charge is required.
	Exceeding 25 ft (7.5 m)	Additional charge is required. (Refer to the table below.)
Refrigerant to be added	NAXSKS18A112A*	1.08 oz each 5 ft. (20 g/m)
	NAXSKS24A112A* NAXSKS30A112A* NAXSKS36A112A*	2.69 oz each 5 ft. (50 g/m)

This is an example from a Nv-Series unit (N*XSKH09-18k BTU) there are no charge adders or adjustments needed. We must be sure to stay within the maximum pipe/lineset lengths.

4.1. Refrigerant pipe (Fig. 4-1, Fig. 4-2)

► Check that the difference between the heights of the indoor and outdoor units, the length of refrigerant pipe, and the number of bends in the pipe are within the limits shown below.

Models	Ⓐ Pipe length (one way)	Ⓑ Height difference	Ⓒ Number of bends (one way)
NTXSKH09A112A* NTXSKH12A112A* NTXSKH15A112A*	Max. 65 ft (20 m)	Max. 40 ft (12 m)	Max. 10
NTXSKH18A112A*	Max. 100 ft (30 m)	Max. 50 ft (15 m)	Max. 10

- Height difference limitation is defined regardless of which unit, indoor or outdoor, is positioned higher.
- Refrigerant adjustment ... No additional charge is required.

The below example indicates that the PUZ-A 12-30k BTU (P-Series) units are pre-charged for 70 ft. of lineset (red boxes). The 36-42k BTU units are pre-charged for 100 ft. of lineset (blue boxes). If you had a PUZ-A18 and had a 100 ft. lineset, you would add 6 oz. of refrigerant as indicated in the green boxes.

Model	Max pipe length	Max height difference	Additional refrigerant charging amount (kg/oz) *2																	
			21 m 70 ft	24 m 80 ft	27 m 90 ft	30 m 100 ft	34 m 110 ft	37 m 120 ft	40 m 130 ft	43 m 140 ft	46 m 150 ft	49 m 160 ft	50 m 165 ft	52 m 170 ft	55 m 180 ft	58 m 190 ft	61 m 200 ft	64 m 210 ft	67 m 220 ft	69 m 225 ft
PUZ-A12, 18	30 m, 100 ft	30 m, 100 ft	0	0.06 kg 2 oz	0.11 kg 4 oz	0.17 kg 6 oz	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PUZ-A24, 30	50 m, 165 ft *1	30 m, 100 ft	0	0.20 kg 7 oz	0.40 kg 14 oz	0.60 kg 21 oz	0.79 kg 28 oz	0.99 kg 35 oz	1.19 kg 42 oz	1.39 kg 49 oz	1.59 kg 56 oz	1.79 kg 63 oz	1.89 kg 67 oz	-	-	-	-	-	-	-
PUZ-A36, 42	50 m, 165 ft *1	30 m, 100 ft	0	0	0	0	0.20 kg 7 oz	0.40 kg 14 oz	0.26 kg 21 oz	0.79 kg 28 oz	0.99 kg 35 oz	1.19 kg 42 oz	1.29 kg 46 oz	-	-	-	-	-	-	-
PUY-A12, 18	50 m, 165 ft	30 m, 100 ft	0	0.03 kg 1 oz	0.06 kg 2 oz	0.09 kg 3 oz	0.11 kg 4 oz	0.14 kg 5 oz	0.17 kg 6 oz	0.20 kg 7 oz	0.23 kg 8 oz	0.26 kg 9 oz	0.27 kg 10 oz	-	-	-	-	-	-	-
PUY-A24, 30	69 m, 225 ft *1	30 m, 100 ft	0	0.09 kg 3 oz	0.17 kg 6 oz	0.26 kg 9 oz	0.34 kg 12 oz	0.43 kg 15 oz	0.51 kg 18 oz	0.60 kg 21 oz	0.68 kg 24 oz	0.77 kg 27 oz	0.81 kg 29 oz	0.85 kg 30 oz	0.94 kg 33 oz	1.02 kg 36 oz	1.11 kg 39 oz	1.19 kg 42 oz	1.28 kg 45 oz	1.32 kg 47 oz
PUY-A36, 42	69 m, 225 ft *1	30 m, 100 ft	0	0	0	0	0.09 kg 3 oz	0.17 kg 6 oz	0.26 kg 9 oz	0.34 kg 12 oz	0.43 kg 15 oz	0.51 kg 18 oz	0.55 kg 20 oz	0.60 kg 21 oz	0.68 kg 24 oz	0.77 kg 27 oz	0.85 kg 30 oz	0.94 kg 33 oz	1.02 kg 36 oz	1.06 kg 38 oz

If you suspect the unit is low on refrigerant, you can't simply "top off the unit." We suggest you weigh your recovered refrigerant and compare it to the factory charge and the charge adders (if applicable) to confirm your diagnosis. From there, weigh the proper factory charge and any charge adders to allow the unit to perform and function as designed.

If there is any takeaway, remember that no "universal" charging methods cover all of these units. Refer to the specific manual for your particular model!

Diamond System Builder, installation guides and submittals are all great resources available through MyLinkDrive (Mitsubishi, Trane and American Standard) and can help with your application, installation and service. Munch's Technical Support is here for you too!