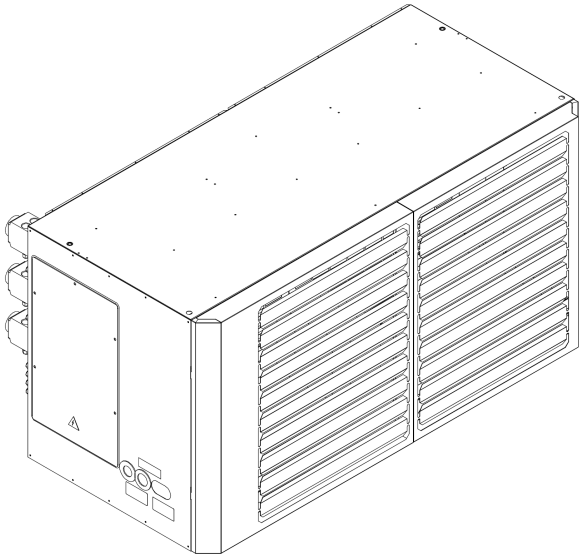
mark®

building climate technology

EN

MISTRAL MDX 30 / 60

0662053-R01



Read the safety instructions carefully and make sure you fully understand them. Incorrect installation and handling can lead to injury and damage.

PLEASE READ THESE INSTRUCTIONS CAREFULLY & KEEP THEM FOR FUTURE USE

Thank you for purchasing this Mark Mistral MDX. Please read this manual carefully, as it contains important information for the safety of users and the environment. Keep this manual with the Mistral MDX for future reference.

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GENERAL WARNINGS

Incorrect installation, adjustment, modification, repair or maintenance may result in property damage, injury or environmental damage. All work must be carried out by approved, qualified professionals in accordance with national and international guidelines. Incorrect installation, adjustment, modification, maintenance or repair will void the warranty. This appliance is not intended for use by persons (including children) with reduced physical or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

This heater is not suitable for domestic or similar use and may only be installed by F-gas certified persons. Installation in large garages may be possible if permitted by local laws and regulations. Check that this appliance is suitable for your situation.

USER WARNINGS

This appliance is not intended for use by children. Children near the appliance should be supervised to ensure that they do not play with it.

Do not cover any part of the installation to prevent overheating and fire hazard. Also keep away from flammable materials and keep the immediate area free of obstacles.

Do not disassemble. There are no user serviceable parts inside.

READING GUIDE

The safety instructions are incorporated throughout the manual where applicable, with references to other chapters where necessary. The designations below are used throughout the document, read through what they are for and keep an eye on them in the manual.

The reading indications below are used in this document to provide specific instructions:

CAUTION! Designations such as these are to inform the reader that actions are necessary to ensure that the Mistral MDX's operations run smoothly. These may be necessary aspects to prevent complications and minor injuries.

BEWARE! Labels such as these are there to inform the reader that there are hazards that need to be addressed that could pose a risk to users or the environment.

QUALIFIED USERS

The Mistral MDX must be installed, maintained and removed by an installer qualified for these tasks. These activities require safety measures that are important for health and the environment. The following properties are important when working on this installation:

- The qualified installer or technician must have sufficient knowledge of the products made by Mark Climate Technology to carry out the installation safely.
- The qualified installer or technician must be authorized to work on electrical installations.
- The qualified installer or technician must be authorized to work on refrigerant systems.
- The qualified installer or fitter must be authorised to work at height.

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1 GENERAL INFORMATION

Read the safety instructions carefully and make sure you fully understand them. Incorrect installation and handling can lead to injury and damage.

THE INSTRUCTIONS FOR USE

This manual is intended as a practical aid when working with or on the Mistral MDX. It contains all the necessary information to use the device safely and correctly. Before using it, it is essential to read the manual carefully. Only with sufficient knowledge of the operation and the associated safety instructions can the machine be used responsibly.

The safety instructions contained in this manual must be followed carefully by every user at all times. This is essential to ensure safety, prevent personal injury and avoid damage to the appliance.

THE PRODUCT

The Mistral MDX is designed as part of a split-module heat pump system and is suitable for both heating and cooling in industrial environments. The unit is controlled by an external control system and is particularly suitable for applications where efficient climate control is required, such as in large workshops, warehouses or industrial garages. The use of the Mistral MDX must always take place within the limits of the applicable local regulations and only for the purpose for which it was designed.

The Mistral MDX is subject to the requirements of the Machinery Directive 2006/42/EC and the EMC Directive 2014/30/EU. Because the Mistral MDX complies with the applicable requirements of these European Directive(s), an EC Declaration of Conformity has been drawn up by Mark Climate Technology. The EC Declaration of Conformity is available on request.

ADJUSTMENTS

Modifications to the Mistral MDX may only be carried out by authorised and trained Mark Climate Technology personnel, and only on the basis of a valid and approved conversion instruction. Users or installers who are not certified by Mark Climate Technology are not authorised to make changes to the device or the installation. This is essential to ensure the safe operation, warranty conditions and technical integrity of the system. Unauthorised modifications may lead to malfunctions, safety risks and the voiding of the factory warranty.

Specifications and composition of existing products are subject to change without prior notice. Such changes may be the result of product improvements or changes in applicable regulations, such as amended EU directives. The documentation supplied with the product is tailored to the specific version and should be carefully retained for future use or reference.

2 TECHNICAL SPECIFICATIONS

2.1 GENERAL SPECIFICATIONS

2.1.1 PHYSICAL SPECIFICATIONS

INDOOR UNIT SPECIFICATIONS

Type	-	30	60
Dimensions of the indoor unit (LxHxD)	mm	1170 x 940 x 879	1800 x 940 x 1000
Indoor unit weight	kg	142	176
Protection class indoor unit	IP	00B	00B
Maximum air displacement of the indoor unit	m3/h	5400	11200
Maximum measured sound level of the indoor unit	dB(A)	51	56

Table 2.1.1.1: Overview of the physical specifications of the indoor unit.

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2.1.2 SPECIFICATIONS OF THE MISTRAL MDX 30

MAIN COMPONENTS FOR INSTALLATION

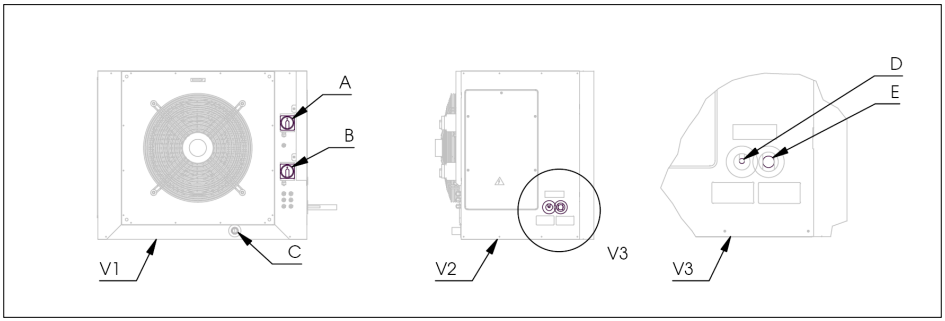

Image 2.1.2.1: Parts for installing the MISTRAL MDX 30. (V1: Rear view, V2: Left side view)

	Description
(A)	WS1 - Connecting outdoor unit to indoor unit
(B)	WS2 - Indoor unit power supply
(C)	Condensate outlet
(D)	Outdoor Unit Refrigerant Fluid Connection
(E)	Outdoor Unit Refrigerant Gas Connection

Table 2.1.2.2: Overview of the most important parts of the Mistral MDX 30 for the installation.

DIMENSIONS OF THE MISTRAL MDX 30 INDOOR UNIT

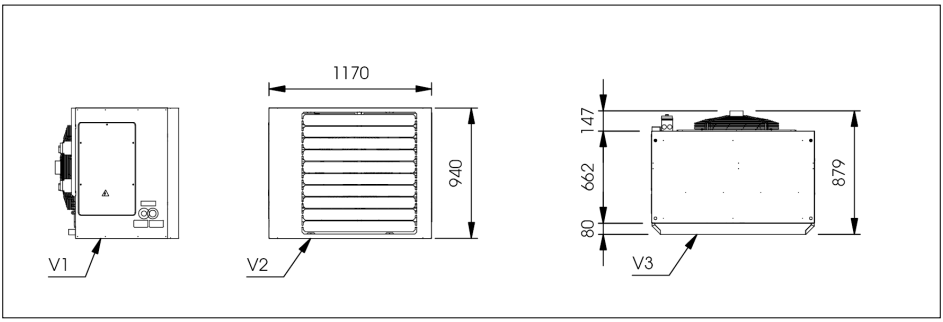

Image 2.1.2.3: Dimensions of the MISTRAL MDX 30. (V1: Left side view, V2: Front view, V3: Top view)

SUSPENSION POINTS OF THE MISTRAL MDX 30

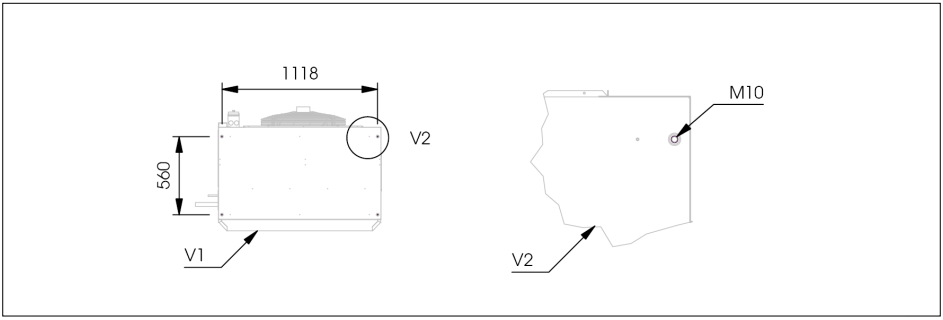

Image 2.1.2.4: Suspension points of the MISTRAL MDX 30. (V1: Top view)

CONNECTIONS OF THE MISTRAL MDX 30

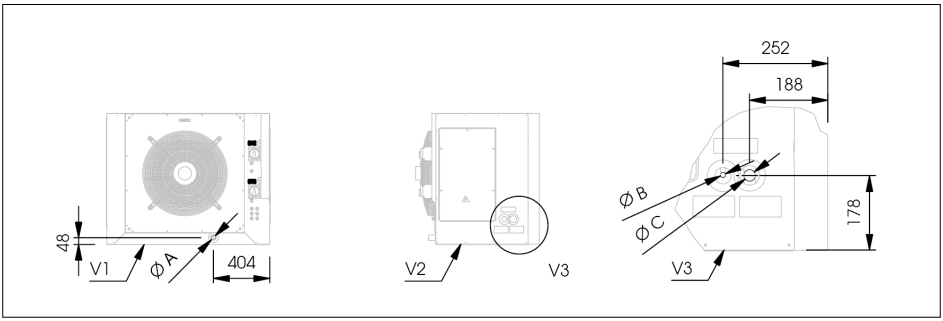

Image 2.1.2.5: Dimensions of the MISTRAL MDX 30 connections. (V1: Rear view, V2: Left side view)

	Description
(A)	Diameter of 40mm without condensate pump, 12mm with condensate pump.
(B)	Diameter of 12.8mm or 1/2".
(C)	Diameter of 28.6mm or 1 1/8".

Table 2.1.2.5: Overview of parts and dimensions.

HEATING CAPACITIES OF THE MISTRAL MDX 30

°C DB*	Indoor air temperature in °C											
	14	14	16	16	18	18	20	20	22	22	24	24
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
-27	9,8	6,5	9,8	6,5	9,8	6,5	9,8	6,5	9,8	6,5	9,8	6,5
-26	10,6	6,8	10,6	6,8	10,6	6,8	10,6	6,8	10,6	6,8	10,6	6,8
-25	11,3	7,2	11,3	7,2	11,3	7,2	11,3	7,2	11,3	7,2	11,3	7,2
-24	12,0	7,6	12,0	7,6	12,0	7,6	12,0	7,6	12,0	7,6	12,0	7,6
-23	12,7	8,0	12,7	8,0	12,7	8,0	12,7	8,0	12,7	8,0	12,7	8,0
-22	13,4	8,4	13,4	8,4	13,4	8,4	13,4	8,4	13,4	8,4	13,4	8,4
-21	14,1	8,8	14,1	8,8	14,1	8,8	14,1	8,8	14,1	8,8	14,1	8,8
-20	14,8	9,2	14,8	9,2	14,8	9,2	14,8	9,2	14,8	9,2	14,8	9,2
-19	15,3	9,4	15,3	9,4	15,3	9,4	15,3	9,4	15,3	9,4	15,3	9,4
-18	15,8	9,7	15,8	9,7	15,8	9,7	15,8	9,7	15,8	9,7	15,8	9,7
-17	16,3	10,0	16,3	10,0	16,3	10,0	16,3	10,0	16,3	10,0	16,3	10,0
-16	16,8	10,2	16,8	10,2	16,8	10,2	16,8	10,2	16,8	10,2	16,8	10,2
-15	17,2	10,5	17,2	10,5	17,2	10,5	17,2	10,5	17,2	10,5	17,2	10,5
-14	17,8	10,8	17,8	10,8	17,8	10,8	17,8	10,8	17,8	10,8	17,8	10,8
-13	18,3	11,1	18,3	11,1	18,3	11,1	18,3	11,1	18,3	11,1	18,3	11,1
-12	18,8	11,4	18,8	11,4	18,8	11,4	18,8	11,4	18,8	11,4	18,8	11,4
-11	19,3	11,8	19,3	11,8	19,3	11,8	19,3	11,8	19,3	11,8	19,3	11,8
-10	19,8	12,1	19,8	12,1	19,8	12,1	19,8	12,1	19,8	12,1	19,8	12,1
-9	20,3	12,4	20,3	12,4	20,3	12,4	20,3	12,4	20,3	12,4	20,3	12,4
-8	20,8	12,7	20,8	12,7	20,8	12,7	20,8	12,7	20,8	12,7	20,8	12,7
-7	21,4	13,0	21,4	13,0	21,4	13,0	21,4	13,0	21,4	13,0	21,4	13,0
-6	21,9	13,3	21,9	13,3	21,9	13,3	21,9	13,3	21,9	13,3	21,9	13,3
-5	22,5	13,6	22,5	13,6	22,5	13,6	22,5	13,6	22,5	13,6	22,5	13,6
-4	23,0	13,9	23,0	13,9	23,0	13,9	23,0	13,9	23,0	13,9	23,0	13,9
-3	23,5	14,2	23,5	14,2	23,5	14,2	23,5	14,2	23,5	14,2	23,5	14,2
-2	24,1	14,5	24,1	14,5	24,1	14,5	24,1	14,5	24,1	14,5	24,1	14,5
-1	24,6	14,8	24,6	14,8	24,6	14,8	24,6	14,8	24,6	14,8	24,6	14,8
0	25,2	15,0	25,2	15,0	25,2	15,0	25,2	15,0	25,2	15,0	24,9	14,8
1	25,7	15,3	25,7	15,3	25,7	15,3	25,7	15,3	25,7	15,3	24,9	14,8
2	26,3	15,6	26,3	15,6	26,3	15,6	26,3	15,6	26,3	15,6	24,9	14,8
3	26,9	15,9	26,9	15,9	26,9	15,9	26,9	15,9	26,9	15,9	24,9	14,8
4	27,4	16,1	27,4	16,1	27,4	16,1	27,4	16,1	27,4	16,1	24,9	14,8
5	24,4	9,3	24,4	9,3	24,4	9,3	24,4	9,3	24,4	9,3	24,9	9,3
6	27,5	9,3	27,5	9,3	27,5	9,3	27,5	9,3	27,5	9,3	24,9	9,3
7	28,0	9,3	28,0	9,3	28,0	9,3	28,0	9,3	27,7	9,3	24,9	9,3
8	28,5	9,3	28,5	9,3	28,5	9,3	28,5	9,3	27,7	9,3	24,9	9,3

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°C DB*	Indoor air temperature in °C											
	14	14	16	16	18	18	20	20	22	22	24	24
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
9	29,0	9,3	29,0	9,3	29,0	9,3	29,0	9,3	27,7	9,3	24,9	9,3
10	29,6	9,3	29,6	9,3	29,6	9,3	29,6	9,3	27,7	9,3	24,9	9,3
11	30,1	9,3	30,1	9,3	30,1	9,3	30,1	9,3	27,7	9,3	24,9	9,3
12	30,6	9,3	30,6	9,3	30,6	9,3	30,5	9,3	27,7	9,3	24,9	9,3
13	31,1	9,3	31,1	9,3	31,1	9,3	30,5	9,3	27,7	9,3	24,9	9,3
14	31,6	9,3	31,6	9,3	31,6	9,3	30,5	9,3	27,7	9,3	24,9	9,3
15	32,1	9,3	32,1	9,3	32,1	9,3	30,5	9,3	27,7	9,3	24,9	9,3
16	32,6	9,3	32,6	9,3	32,6	9,3	30,5	9,3	27,7	9,3	24,9	9,3
17	33,6	9,3	33,6	9,3	33,4	9,3	30,5	9,3	27,7	9,3	24,9	9,3
18	34,2	9,3	34,2	9,3	33,4	9,3	30,5	9,3	27,7	9,3	24,9	9,3
19	34,8	9,3	34,8	9,3	33,4	9,3	30,5	9,3	27,7	9,3	24,9	9,3
20	35,4	9,3	35,4	9,3	33,4	9,3	30,5	9,3	27,7	9,3	24,9	9,3
21	35,9	9,3	35,9	9,3	33,4	9,3	30,5	9,3	27,7	9,3	24,9	9,3
22	36,5	9,3	36,5	9,3	33,4	9,3	30,5	9,3	27,7	9,3	24,9	9,3
23	37,1	9,3	36,3	9,3	33,4	9,3	30,5	9,3	27,7	9,3	24,9	9,3
24	37,7	9,3	36,3	9,3	33,4	9,3	30,5	9,3	27,7	9,3	24,9	9,3

* Outside air temperature in °C DB
TC: Total capacity in kW
PI: Power consumption of compressor + fan outdoor unit in kW

CORRECTION FACTOR FOR DEFROST CYCLE

Heat exchanger temperature (°C / RH 85%)	-7	-5	-2	0	2	5	7
Correction factor for defrost cycle	0.94	0.93	0.89	0.84	0.83	0.91	1

Table 2.1.2.7: Overview of correction factors for defrost cycle.

COOLING CAPACITIES OF THE MISTRAL MDX 30

°C DB*	Indoor air temperature in °C											
	20° - 60%	20° - 60%	23° - 60%	23° - 60%	25° - 50%	25° - 50%	27° - 50%	27° - 50%	30° - 40%	30° - 40%	32° - 40%	32° - 40%
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
20	17,6	7,2	25,6	10,9	25,8	10,9	31,3	10,7	32,1	10,3	32,1	10,3
21	17,6	7,2	25,6	10,9	25,8	10,9	31,3	10,7	31,8	10,5	31,8	10,5
22	17,6	7,2	25,6	10,9	25,8	10,9	31,3	10,7	31,4	10,7	31,4	10,7
23	17,6	7,2	25,6	10,9	25,8	10,9	31,1	10,8	31,1	10,8	31,1	10,8
24	17,6	7,2	25,6	10,9	25,8	10,9	30,6	10,9	30,6	10,9	30,6	10,9
25	17,6	7,2	25,6	10,9	25,8	10,9	30	10,9	30	10,9	30	10,9
26	17,6	7,2	25,6	10,9	25,8	10,9	29,5	10,9	29,5	10,9	29,5	10,9
27	17,6	7,2	25,6	10,9	25,8	10,9	28,9	10,9	28,9	10,9	28,9	10,9

°C DB*	Indoor air temperature in °C											
	20° - 60%	20° - 60%	23° - 60%	23° - 60%	25° - 50%	25° - 50%	27° - 50%	27° - 50%	30° - 40%	30° - 40%	32° - 40%	32° - 40%
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
28	17,6	7,2	25,6	10,9	25,8	10,9	28,4	10,9	28,4	10,9	28,4	10,9
29	17,6	7,2	25,6	10,9	25,8	10,9	27,9	10,9	27,9	10,9	27,9	10,9
30	17,6	7,2	25,6	10,9	25,8	10,9	27,4	10,9	27,4	10,9	27,4	10,9
31	17,6	7,2	25,6	10,9	25,8	10,9	26,9	10,9	26,9	10,9	26,9	10,9
32	17,6	7,2	25,6	10,9	25,8	10,9	26,4	10,9	26,4	10,9	26,4	10,9
33	17,6	7,2	25,6	10,9	25,8	10,9	25,9	10,9	25,9	10,9	25,9	10,9
34	17,6	7,2	25,5	10,9	25,5	10,9	25,5	10,9	25,5	10,9	25,5	10,9
35	17,6	7,2	25	10,9	25	10,9	25	10,9	25	10,9	25	10,9
36	17,6	7,2	24,5	10,9	24,5	10,9	24,5	10,9	24,5	10,9	24,5	10,9
37	17,6	7,2	24,1	10,9	24,1	10,9	24,1	10,9	24,1	10,9	24,1	10,9
38	17,6	7,2	23,7	10,9	23,7	10,9	23,7	10,9	23,7	10,9	23,7	10,9
39	17,6	7,2	20	7,2	20	7,2	20	7,2	20	7,2	20	7,2
40	17,6	7,2	19,6	7,2	19,6	7,2	19,6	7,2	19,6	7,2	19,6	7,2
41	17,6	7,2	19,1	7,2	19,1	7,2	19,1	7,2	19,1	7,2	19,1	7,2
42	17,6	7,2	18,7	7,2	18,7	7,2	18,7	7,2	18,7	7,2	18,7	7,2
43	17,6	7,2	18,3	7,2	18,3	7,2	18,3	7,2	18,3	7,2	18,3	7,2
44	16,4	5,6	16,4	5,6	16,4	5,6	16,4	5,6	16,4	5,6	16,4	5,6
45	16	5,6	16	5,6	16	5,6	16	5,6	16	5,6	16	5,6
46	15,6	5,6	15,6	5,6	15,6	5,6	15,6	5,6	15,6	5,6	15,6	5,6

* Outside air temperature in °C DB
TC: Total capacity in kW
PI: Power consumption of compressor + fan outdoor unit in kW

2.1.3 SPECIFICATIONS OF THE MISTRAL MDX 60

MAIN COMPONENTS FOR INSTALLATION

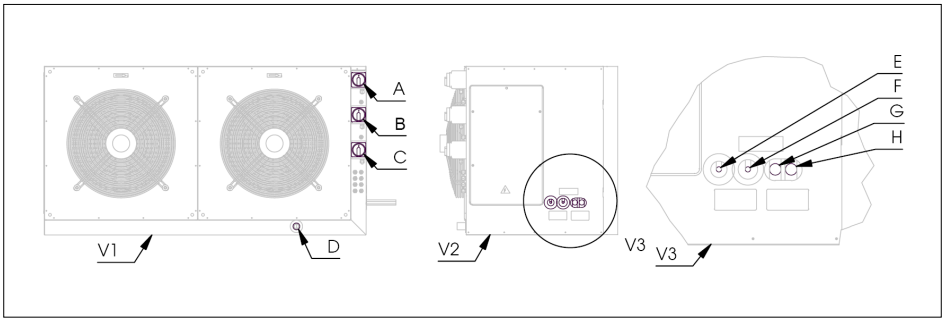

Image 2.1.3.1: Parts for installing the MISTRAL MDX 60. (V1: Rear view, V2: Left side view)

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	Description
(A)	WS1 - Connecting outdoor unit to indoor unit
(B)	WS2 - Connection of outdoor unit 2 to indoor unit
(C)	WS3 - Indoor unit power supply
(D)	Condensate outlet
(E)	Outdoor unit 1 - Refrigerant fluid connection
(F)	Outdoor unit 1 - Refrigerant gas connection
(G)	Outdoor unit 2 - Refrigerant fluid connection
(H)	Outdoor unit 2 - Refrigerant gas connection

Table 2.1.3.2: Overview of the most important parts of the Mistral MDX 60 for the installation.

DIMENSIONS OF THE MISTRAL MDX 60 INDOOR UNIT

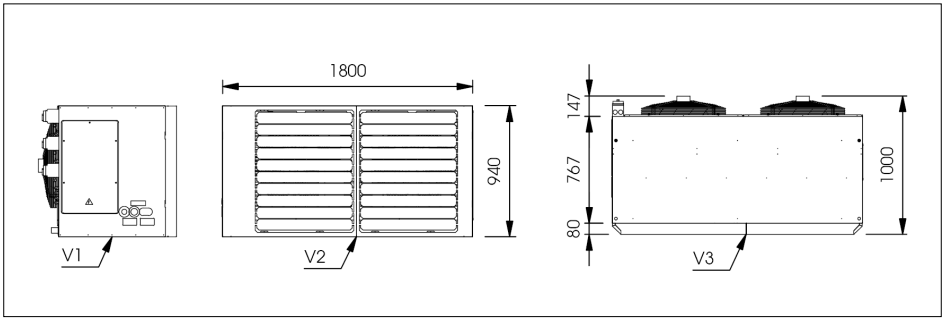

Image 2.1.3.3: Dimensions of the MISTRAL MDX 60. (V1: Left side view, V2: Front view, V3: Top view)

SUSPENSION POINTS OF THE MISTRAL MDX 60

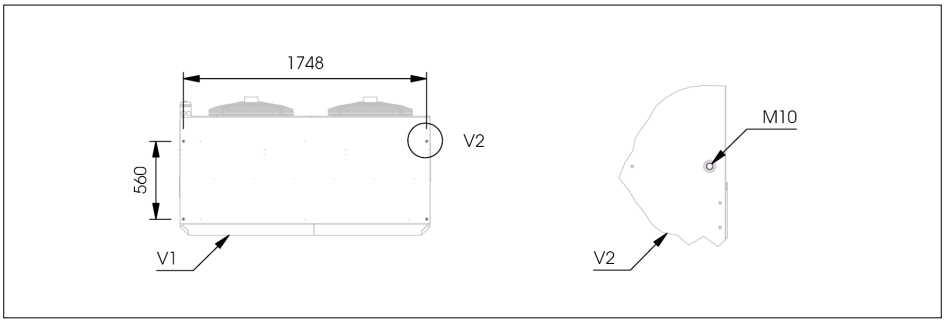

Image 2.1.3.4: Suspension points of the MISTRAL MDX 60. (V1: Top view)

CONNECTIONS OF THE MISTRAL MDX 60

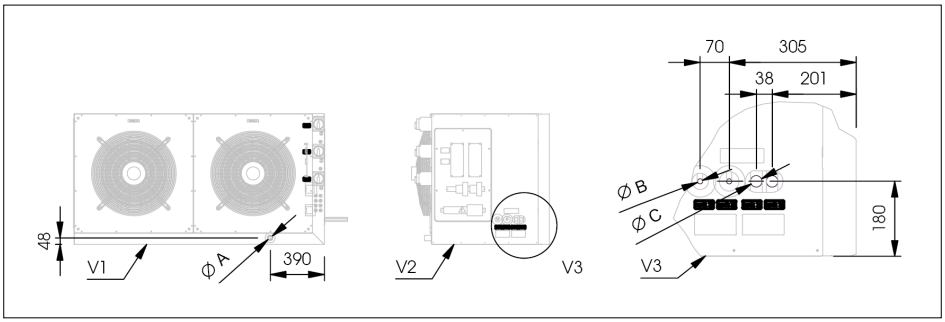

Image 2.1.3.5: Dimensions of the MISTRAL MDX 60 connections. (V1: Rear view, V2: Left side view)

	Description
(A)	Diameter of 40mm without condensate pump, 12mm with condensate pump.
(B)	Diameter of 12.8mm or 1/2".
(C)	Diameter of 28.6mm or 1 1/8".

Table 2.1.3.5: Overview of parts and dimensions.

HEATING CAPACITIES OF THE MISTRAL MDX 60

°C DB*	Indoor air temperature in °C											
	14	14	16	16	18	18	20	20	22	22	24	24
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
-27	19,6	13	19,6	13	19,6	13	19,6	13	19,6	13	19,6	13
-26	21,2	13,6	21,2	13,6	21,2	13,6	21,2	13,6	21,2	13,6	21,2	13,6
-25	22,6	14,4	22,6	14,4	22,6	14,4	22,6	14,4	22,6	14,4	22,6	14,4
-24	24	15,2	24	15,2	24	15,2	24	15,2	24	15,2	24	15,2
-23	25,4	16	25,4	16	25,4	16	25,4	16	25,4	16	25,4	16
-22	26,8	16,8	26,8	16,8	26,8	16,8	26,8	16,8	26,8	16,8	26,8	16,8
-21	28,2	17,6	28,2	17,6	28,2	17,6	28,2	17,6	28,2	17,6	28,2	17,6
-20	29,6	18,4	29,6	18,4	29,6	18,4	29,6	18,4	29,6	18,4	29,6	18,4
-19	30,6	18,8	30,6	18,8	30,6	18,8	30,6	18,8	30,6	18,8	30,6	18,8
-18	31,6	19,4	31,6	19,4	31,6	19,4	31,6	19,4	31,6	19,4	31,6	19,4
-17	32,6	20	32,6	20	32,6	20	32,6	20	32,6	20	32,6	20
-16	33,6	20,4	33,6	20,4	33,6	20,4	33,6	20,4	33,6	20,4	33,6	20,4
-15	34,4	21	34,4	21	34,4	21	34,4	21	34,4	21	34,4	21
-14	35,6	21,6	35,6	21,6	35,6	21,6	35,6	21,6	35,6	21,6	35,6	21,6
-13	36,6	22,2	36,6	22,2	36,6	22,2	36,6	22,2	36,6	22,2	36,6	22,2
-12	37,6	22,8	37,6	22,8	37,6	22,8	37,6	22,8	37,6	22,8	37,6	22,8
-11	38,6	23,6	38,6	23,6	38,6	23,6	38,6	23,6	38,6	23,6	38,6	23,6
-10	39,6	24,2	39,6	24,2	39,6	24,2	39,6	24,2	39,6	24,2	39,6	24,2
-9	40,6	24,8	40,6	24,8	40,6	24,8	40,6	24,8	40,6	24,8	40,6	24,8
-8	41,6	25,4	41,6	25,4	41,6	25,4	41,6	25,4	41,6	25,4	41,6	25,4

°C DB*	Indoor air temperature in °C											
	14	14	16	16	18	18	20	20	22	22	24	24
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
-7	42,8	26	42,8	26	42,8	26	42,8	26	42,8	26	42,8	26
-6	43,8	26,6	43,8	26,6	43,8	26,6	43,8	26,6	43,8	26,6	43,8	26,6
-5	45	27,2	45	27,2	45	27,2	45	27,2	45	27,2	45	27,2
-4	46	27,8	46	27,8	46	27,8	46	27,8	46	27,8	46	27,8
-3	47	28,4	47	28,4	47	28,4	47	28,4	47	28,4	47	28,4
-2	48,2	29	48,2	29	48,2	29	48,2	29	48,2	29	48,2	29
-1	49,2	29,6	49,2	29,6	49,2	29,6	49,2	29,6	49,2	29,6	49,2	29,6
0	50,4	30	50,4	30	50,4	30	50,4	30	50,4	30	50,4	30
1	51,4	30,6	51,4	30,6	51,4	30,6	51,4	30,6	51,4	30,6	50,5	18,6
2	52,6	31,2	52,6	31,2	52,6	31,2	52,6	31,2	52,6	31,2	50,5	18,6
3	53,8	31,8	53,8	31,8	53,8	31,8	53,8	31,8	53,8	31,8	50,5	18,6
4	54,8	32,2	54,8	32,2	54,8	32,2	54,8	32,2	54,8	32,2	50,5	18,6
5	48,8	18,6	48,8	18,6	48,8	18,6	48,8	18,6	48,8	18,6	50,5	18,6
6	55	18,6	55	18,6	55	18,6	55	18,6	55	18,6	50,5	18,6
7	56	18,6	56	18,6	56	18,6	56	18,6	56	18,6	50,5	18,6
8	57	18,6	57	18,6	57	18,6	57	18,6	56,3	18,6	50,5	18,6
9	58	18,6	58	18,6	58	18,6	58	18,6	56,3	18,6	50,5	18,6
10	59,2	18,6	59,2	18,6	59,2	18,6	59,2	18,6	56,3	18,6	50,5	18,6
11	60,2	18,6	60,2	18,6	60,2	18,6	60,2	18,6	56,3	18,6	50,5	18,6
12	61,2	18,6	61,2	18,6	61,2	18,6	61,2	18,6	56,3	18,6	50,5	18,6
13	62,2	18,6	62,2	18,6	62,2	18,6	62,2	18,6	56,3	18,6	50,5	18,6
14	63,2	18,6	63,2	18,6	63,2	18,6	62,2	18,6	56,3	18,6	50,5	18,6
15	64,2	18,6	64,2	18,6	64,2	18,6	62,2	18,6	56,3	18,6	50,5	18,6
16	65,2	18,6	65,2	18,6	65,2	18,6	62,2	18,6	56,3	18,6	50,5	18,6
17	67,2	18,6	67,2	18,6	67,2	18,6	62,2	18,6	56,3	18,6	50,5	18,6
18	68,4	18,6	68,4	18,6	68	18,6	62,2	18,6	56,3	18,6	50,5	18,6
19	69,6	18,6	69,6	18,6	68	18,6	62,2	18,6	56,3	18,6	50,5	18,6
20	70,8	18,6	70,8	18,6	68	18,6	62,2	18,6	56,3	18,6	50,5	18,6
21	71,8	18,6	71,8	18,6	68	18,6	62,2	18,6	56,3	18,6	50,5	18,6
22	73	18,6	73	18,6	68	18,6	62,2	18,6	56,3	18,6	50,5	18,6
23	74,2	18,6	74	18,6	68	18,6	62,2	18,6	56,3	18,6	50,5	18,6
24	75,4	18,6	74	18,6	68	18,6	62,2	18,6	56,3	18,6	50,5	18,6

* Outside air temperature in °C DB
TC: Total capacity in kW
PI: Power consumption of compressor + fan outdoor unit in kW

CORRECTION FACTOR FOR DEFROST CYCLE

Heat exchanger temperature (°C / RH 85%)	-7	-5	-2	0	2	5	7
Correction factor for defrost cycle	0.94	0.93	0.89	0.84	0.83	0.91	1

Table 2.1.3.7: Overview of correction factors for defrost cycle.

COOLING CAPACITIES OF THE MISTRAL MDX 60

°C DB*	Indoor air temperature in °C											
	20° - 60%	20° - 60%	23° - 60%	23° - 60%	25° - 50%	25° - 50%	27° - 50%	27° - 50%	30° - 40%	30° - 40%	32° - 40%	32° - 40%
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
20	30,8	11,2	45,7	14,4	45,7	15,4	56,8	21,8	59,7	21,8	64,2	20,6
21	30,8	11,2	45,7	14,4	45,7	15,4	56,8	21,8	59,7	21,8	63,6	21,0
22	30,8	11,2	45,7	14,4	45,7	15,4	56,8	21,8	59,7	21,8	62,8	21,4
23	30,8	11,2	45,7	14,4	45,7	15,4	56,8	21,8	59,7	21,8	62,2	21,6
24	30,8	11,2	45,7	14,4	45,7	15,4	56,8	21,8	59,7	21,8	61,2	21,8
25	30,8	11,2	45,7	14,4	45,7	15,4	56,8	21,8	59,7	21,8	60,0	21,8
26	30,8	11,2	45,7	14,4	45,7	15,4	56,8	21,8	59,0	21,8	59,0	21,8
27	30,8	11,2	45,7	14,4	45,7	15,4	56,8	21,8	57,8	21,8	57,8	21,8
28	30,8	11,2	45,7	14,4	45,7	15,4	56,8	21,8	56,8	21,8	56,8	21,8
29	30,8	11,2	45,7	14,4	45,7	15,4	55,8	21,8	55,8	21,8	55,8	21,8
30	30,8	11,2	45,7	14,4	45,7	15,4	54,8	21,8	54,8	21,8	54,8	21,8
31	30,8	11,2	45,7	14,4	45,7	15,4	53,8	21,8	53,8	21,8	53,8	21,8
32	30,8	11,2	45,7	14,4	45,7	15,4	52,8	21,8	52,8	21,8	52,8	21,8
33	30,8	11,2	45,7	14,4	45,7	15,4	51,8	21,8	51,8	21,8	51,8	21,8
34	30,8	11,2	45,7	14,4	45,7	15,4	51,0	21,8	51,0	21,8	51,0	21,8
35	30,8	11,2	45,7	14,4	45,7	15,4	50,0	21,8	50,0	21,8	50,0	21,8
36	30,8	11,2	45,7	14,4	45,7	15,4	49,0	21,8	49,0	21,8	49,0	21,8
37	30,8	11,2	45,7	14,4	45,7	15,4	48,2	21,8	48,2	21,8	48,2	21,8
38	30,8	11,2	45,7	14,4	45,7	15,4	47,4	21,8	47,4	21,8	47,4	21,8
39	30,8	11,2	40,0	14,4	40,0	14,4	40,0	14,4	40,0	14,4	40,0	14,4
40	30,8	11,2	39,2	14,4	39,2	14,4	39,2	14,4	39,2	14,4	39,2	14,4
41	30,8	11,2	38,2	14,4	38,2	14,4	38,2	14,4	38,2	14,4	38,2	14,4
42	30,8	11,2	37,4	14,4	37,4	14,4	37,4	14,4	37,4	14,4	37,4	14,4
43	30,8	11,2	36,6	14,4	36,6	14,4	36,6	14,4	36,6	14,4	36,6	14,4
44	30,8	11,2	32,8	11,2	32,8	11,2	32,8	11,2	32,8	11,2	32,8	11,2
45	30,8	11,2	32,0	11,2	32,0	11,2	32,0	11,2	32,0	11,2	32,0	11,2
46	30,8	11,2	30,8	11,2	30,8	11,2	30,8	11,2	30,8	11,2	30,8	11,2

* Outside air temperature in °C DB
TC: Total capacity in kW
PI: Power consumption of compressor + fan outdoor unit in kW

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2.1.4 HEATING SPECIFICATIONS

Type	-	30	60
Temperature range of heating	°C	+7 ~ +24	+7 ~ +24
Operating limits (outside temperature)	°C	-27 ~ +15	-27 ~ +15
Power range	kW	4.6 - 28	9.2 - 56

Table 2.1.4.1: Overview of heating specifications.

2.1.5 COOLING SPECIFICATIONS

Type	-	30	60
Temperature range of cooling	°C	+17 ~ +41	+17 ~ +41
Operating limits (outside temperature)	°C	-20 ~ +46	-20 ~ +46
Power range	kW	4.6 - 25	9.2 - 50

Table 2.1.5.1: Overview of cooling specifications.

2.2 UTILITY SPECIFICATIONS

Type	-	30	60
Indoor unit power supply connection	-	3~400V+N+PE	3~400V+N+PE
Maximum current absorbed by indoor unit	A	23	2x 23
Fusing per power supply of the indoor unit	kar-A	3x B-25	2x 3x B-25

Table 2.2.1: Overview of electrical specifications.

2.3 REFRIGERANT SPECIFICATIONS

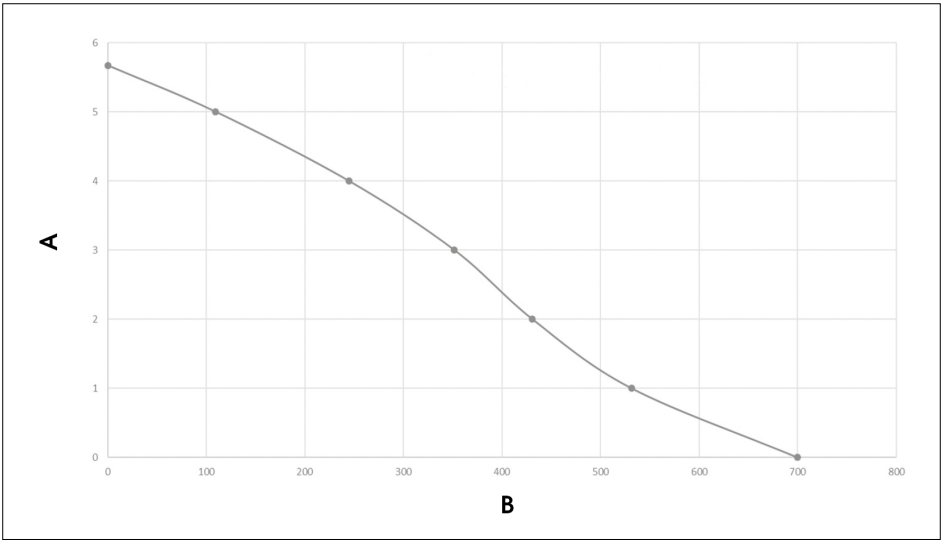
Type	-	30	60
Refrigerant	kg	R32	R32
Amount of refrigerant	kg	4.6	2x 4.6
Connection for refrigerant	⍰ mm (")	12.7 (1/2)	12.7 (1/2)

Table 2.3: Overview of the refrigerant specifications.

2.4 CONDENSATE PUMP SPECIFICATIONS

Type		30	60
25°C @ 50%	kg/h	6	11

Table 2.4: Overview of condensate production.



Graph 2.4.1: Condensate head. (A: head in meters, B: flow rate in liters per hour.)

3 SAFETY INSTRUCTIONS

The Mistral MDX is designed to provide maximum safety, so that the risk of hazardous situations is reduced to a minimum. This chapter explains the measures taken to prevent potential hazards and to ensure safe operation of the system.

3.1 END USERS

This section describes the safety instructions that apply specifically to end users of the MISTRAL MDX. As they generally have less technical knowledge or training than authorised personnel, it is especially important that they follow the guidelines strictly. These instructions are designed to ensure safe operation and minimise risks during daily use.

3.1.1 RISKS TO THE END USER

BEWARE! Flammable material R32
This product contains the flammable refrigerant R32. Ensure that the appliance and pipework are not damaged and always follow the operating instructions to avoid risks.

BEWARE! Consequences of closure
Hazards caused by short circuits, such as splashing of molten particles and chemical effects from short circuits or overloads.

3.2 WORKING ON THE INSTALLATION

3.2.1 QUALIFIED USERS

Familiar with the product Work on or with the Mistral MDX may only be carried out by authorised and adequately trained personnel. These persons must be familiar with the operation, functions and correct use of the system, and must be able to correctly apply the associated safety regulations.

Familiar with the dangers: The user must be aware of the possible risks associated with the use of the Mistral MDX. In addition, it is important that the user takes sufficient note of this user manual. The information in this document is intended to enable safe, correct and responsible use of the system.

Required privileges: A qualified technician who performs work on or with the Mistral MDX must not only have the appropriate technical training, but also comply with local laws and regulations. This means that the person in question must be authorized to work on electrical installations, systems with refrigerant, and – if applicable – at heights. Demonstrable possession of the required certifications or permits is mandatory.

3.2.2 PPE DURING WORK

When working on or with the Mistral MDX, the use of appropriate personal protective equipment is mandatory. Observe any additional local regulations. The following equipment is required:

Safety helmet – especially when using lifting vehicles or working at heights.

Protective clothing with long sleeves – prevents cuts and abrasions.

Safety shoes with steel toes – to protect feet from falling objects.

Gloves – if possible, when handling sharp parts or materials.

Safety glasses – protect eyes from flying debris or metal particles during installation or maintenance.

3.2.3 RISKS DURING WORK

BEWARE! Direct contact
Contact of persons with live parts.

BEWARE! Indirect contact
Contact of persons with parts that have become live under incorrect conditions.

BEWARE! Consequences of closure
Hazards caused by short circuits, such as splashing of molten particles and chemical effects from short circuits or overloads.

BEWARE! Sharp edges
Sharp edges and smooth surfaces pose various risks, including cuts and abrasions.

3.2.4 HOISTING

Approved lifting equipment Installation, maintenance and troubleshooting of the Mistral MDX may require working at height. Ensure that only approved and safe lifting and climbing equipment is used. This is essential to reduce the risk of falls and to ensure the safety of personnel.

Cordon off work area To prevent accidents, the work area around the Mistral MDX must be cordoned off. This prevents damage or injury from falling tools or parts during work.

3.2.5 TRANSPORTATION

Approved means of transport During transport, loose parts or tools can pose a risk. Ensure that the work area around the Mistral MDX is properly cordoned off during transport to prevent accidents.

Cordon off work area Loose parts of the installation or tools can also pose a hazard during transport. Cordon off the work area during transport.

4 GUIDELINES

The Mistral MDX has been developed with clear guidelines to ensure correct, efficient and safe application. This chapter explains the regulations and recommendations that must be followed during installation, use and maintenance. Compliance with these guidelines contributes to optimal operation of the system and prevents unnecessary risks or damage.

4.1 GENERAL GUIDELINES

4.1.1 RISKS FOR THE INSTALLATION

When installing the installation components, it is important to take the following risks into account:

BEWARE! Load-bearing capacity fasteners
Make sure all weight-bearing fasteners can support at least twice the weight of the Mistral MDX to ensure safety and stability.

CAUTION! Dust and pollution
The installation environment should be free of excessive dust and dirt. Build-up of these can lead to clogging, performance degradation or temperature damage to the system.

CAUTION! Humidity
The relative humidity around the installation may be between 0% and 90%, without condensation forming. This prevents moisture damage to electronic and mechanical components.

CAUTION! Exposure to chemicals
Avoid installation in locations where the system may be exposed to oils, corrosive chemicals, or harmful gases to prevent component damage.

Sufficient ventilation: Provide adequate ventilation around the Mistral MDX to prevent overheating and ensure stable airflow.

4.1.2 INSTALLATION GUIDELINES

Available for maintenance: Sufficient space must be left for access during maintenance and service.

Distance indoor and outdoor unit Install the indoor and outdoor units in well-ventilated and drained locations, preferably as close to each other as possible, taking into account the minimum distance between the units. This will minimize energy loss and optimize system performance.

Prevent short-circuit ventilation: Make sure that exhaust air does not flow directly back to the air inlet of the unit. Short-circuit ventilation reduces cooling and heating efficiency and can lead to overloading of the system.

4.2 GUIDELINES FOR THE INDOOR UNIT

Condensate drain required for cooling A condensate drain is only required when the Mistral MDX is used for cooling. When used exclusively for heating, a drain is not necessary.

Condensate drain slope: The unit must be installed within a tolerance of 1° from the horizontal plane. Correct positioning is essential for proper drainage of condensate and to prevent excessive vibration or noise.

Radiographic equipment: Keep at least 1 meter of space around the indoor unit free from radio equipment, the controller may cause interference or noise.

4.2.1 GUIDELINES FOR MOUNTING WITH WALL BRACKET

Below is an overview of the minimum distances that must be maintained with a wall bracket.

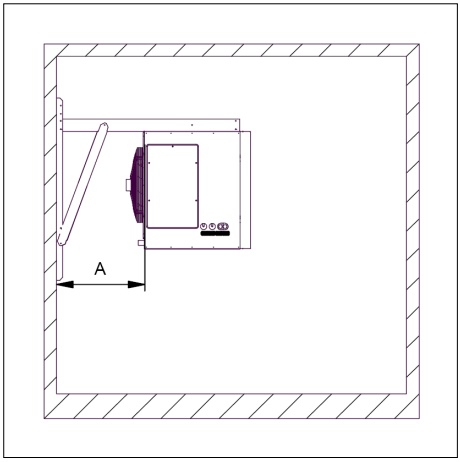


Image 4.2.1.1: Indoor unit with wall bracket.

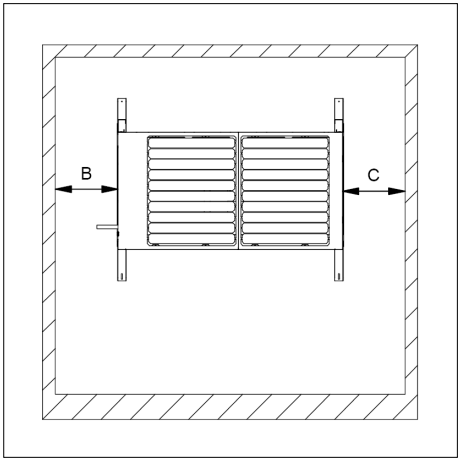


Image 4.2.1.2: Indoor unit with wall bracket.

Type	-	30	60
(A)	mm	692	692
(B)	mm	>500	>500
(C)	mm	>1000	>1000

Table 4.2.1.3: Overview of distances with a wall bracket.

4.2.2 GUIDELINES FOR MOUNTING WITH STANDING FRAME

Below is an overview of the minimum distances that must be used with a standing frame.

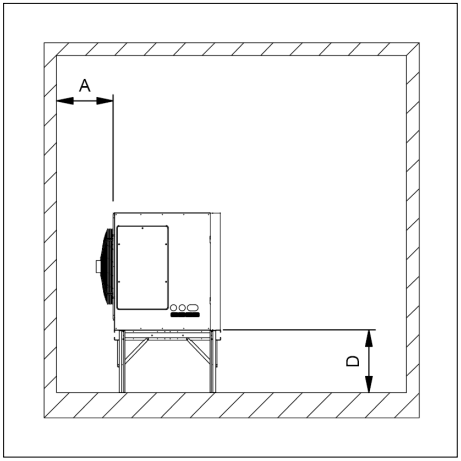


Image 4.2.2.1: Indoor unit with standing frame.

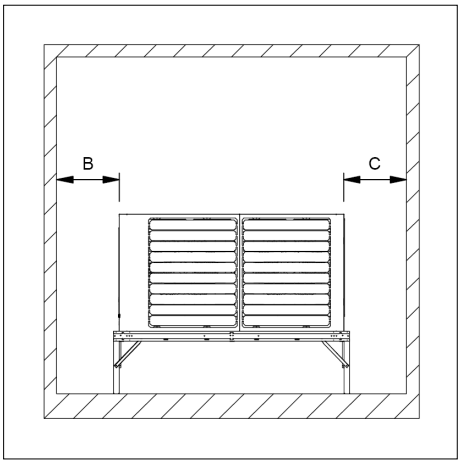


Image 4.2.2.2: Indoor unit with standing frame.

Type	-	30	60
(A)	mm	>600	>600
(B)	mm	>500	>500
(C)	mm	>1000	>1000
(D)	mm	502	502

Table 4.2.2.3: Overview of distances with a footrest.

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4.3 GUIDELINES FOR THE OUTDOOR UNIT

For guidelines and instructions regarding installation, maintenance and operation of the outdoor unit, please refer to the corresponding manual of the outdoor unit. Please read this documentation carefully to ensure correct and safe application.

5 ASSEMBLY AND INSTALLATION

This chapter describes the steps required to correctly assemble, install and commission the Mistral MDX. The process is divided into the following phases:

PHASE 1 Preparations for placement and installation.
PHASE 2 Installation and mounting of the indoor unit and outdoor unit.
PHASE 3 Connecting the coolant lines.
PHASE 4 Connecting the electrical installation and control technology.
PHASE 5 Pressurizing and vacuuming, see manual for outdoor unit.
PHASE 6 Commissioning, testing and completion of the installation.
PHASE 7 Completing PED related procedures.

5.1 PREPARATIONS

BEWARE! The steps below contain important safety warnings and recommendations. Please read them carefully before beginning installation.

5.1.1 RECEPTION

The following steps are not mandatory, but can prevent complications. Please take this into account when receiving the system:

STEP 1 **Leave in packaging**
Keep the Mistral MDX in its original packaging for as long as possible for safe transportation and lifting operations.

STEP 2 **Check for damage**
Carefully inspect the unit for any visible damage that occurred during or before delivery. Document any damage and submit a written report to the carrier.

STEP 3 **Check order**
Verify that the model, specifications and quantities correspond to the order placed. Also check that all ordered accessories are included. Keep all technical manuals for future reference.

STEP 4 **Recycle packaging**
Recycle the packaging according to local regulations. The packaging contains only cardboard, wood and plastic and no hazardous substances.

5.1.2 PRE-INSTALLATION CHECK

BEWARE! STEP 1 **Read the risks**
Refer to chapter 3.2.3 for an overview of all installation related risks. Take these risks into account.

5.1.3 PREPARE WORKPLACE

STEP 1 **Prepare workshop**
Make sure the installation site is well prepared. The area should be clean, safe and free of obstacles to prevent accidents.

5.2 MOUNTING THE INDOOR UNIT

There are three mounting methods available for the Mistral MDX: hanging from suspension points, placing on a standing frame or hanging from a wall bracket. All options are explained below.

CAUTION! The installation must be level. Deviations may result in damage and/or reduced functioning.

5.2.1 HANGING MOUNTING

Installation is possible on the 4 suspension points of the Mistral MDX with M10 thread on top of the unit. This can be adjusted to the circumstances on site.

5.2.2 MOUNTING WITH A WALL BRACKET

In order to mount the Mistral MDX with a wall bracket, in addition to the unit and the bracket itself, suitable wall mounting materials are required. These are not included, as the type of mounting material depends on the mounting location. Below are the recommended mounting distances and a schematic overview of the mounting. Please refer to the mounting manual of the wall bracket for full instructions.

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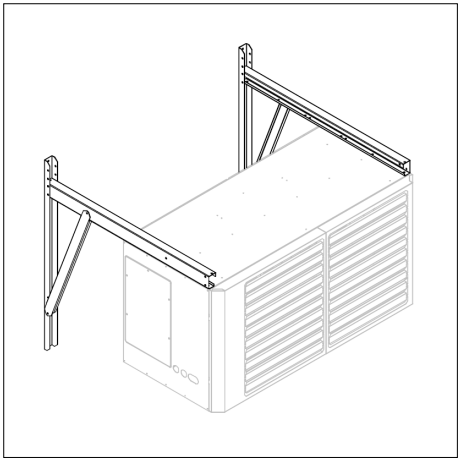

Image 5.2.2.1: View of mounting method.

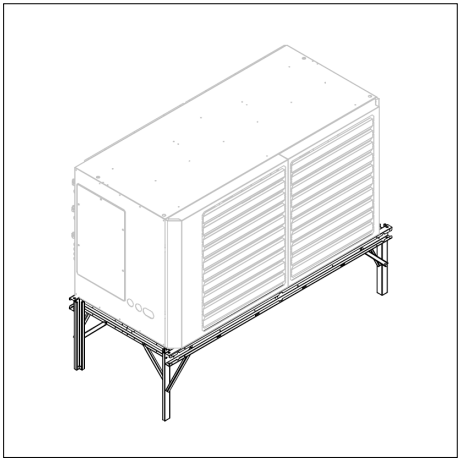

Image 5.2.3.1: View of mounting method.

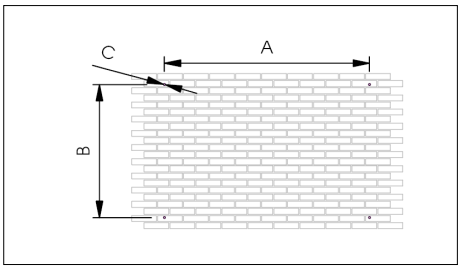

Image 5.2.2.2: View of mounting location.

Type	-	30	60
(A)	mm	1118	1735
(B)	mm	1125	1125
(C)	mm	>8	>8

Table 5.2.2.3: Overview of the wall console mounting distances.

5.2.3 MOUNTING WITH A STANDING FRAME

To mount the Mistral MDX with a standing frame, no mounting material is required other than the unit and frame. Below is a schematic view of the mounting. See the mounting manual supplied with the frame for a full description. For this option, no anchoring in the floor is required.

5.3 MOUNTING THE OUTDOOR UNIT

For guidelines and instructions regarding the installation of the outdoor unit, please refer to the manual accompanying the outdoor unit. Please read this documentation carefully to ensure correct installation and safe operation.

5.4 INSTALLATION OF REFRIGERANT LINES

For guidelines and instructions regarding the installation of the refrigerant piping, refer to the manual of the outdoor unit. Ensure that this documentation is followed carefully to ensure safe and efficient operation of the system.

5.5 ELECTRICAL INSTALLATION AND CONTROL

5.5.1 GUARANTEE THE SAFETY OF THE INSTALLATION

STEP 1 Turn off main distributor
Switch off the main power supply and check that the distribution box is completely de-energised.

STEP 2 Lockout/tagout
Use proper procedures to ensure de-energization, including posting warning labels and/or locking out switches (lockout/tagout).

STEP 3 Check with voltage meter
Use a voltage detector to check whether there is any residual voltage.

5.5.2 PREPARING AND INSTALLING POWER CABLES

STEP 1 Provide adequate cables
Select cables with a suitable diameter, corresponding to the total power of the installation and the length of the cable route. Power cables must be resistant to environmental conditions such as moisture, UV, mechanical stress. Take into account the requirements stated in chapter 2.2.

STEP 2 Ensure the grounding of the installation
Ensure proper earthing of all electrical components and metal parts of the installation. Also earth metal parts that may not be directly connected to the main earthing, such as snap hooks, loose support structures, platforms or coated parts.

5.5.3 PLACEMENT AND INSTALLATION OF THERMOSTAT

For correct regulation of the Mistral MDX installation a suitable thermostat is required. For this the Pintherm Mistral is recommended.

STEP 1 Mount the thermostat
Securely attach the thermostat mounting plate to the selected location according to the thermostat mounting instructions.

STEP 2 Mount additional components
Mount the necessary components for the installation that are needed in addition to the thermostat. This includes a room sensor, interface boxes or communication modules, for example those of ModBus, or external temperature sensors.

5.5.4 CONTROL AND COMMUNICATION

STEP 1 Lay signal cables etc.
Lay signal cables, communication cables and any network connections according to the selected electrical plan. Observe the minimum separation distances between power and control cables to prevent malfunctions and interference. If applicable: use shielded cables for data lines and ensure correct grounding of the shielding.

STEP 2 Check the DIP switches
Check that the DIP switches on the control cabinets are set to the correct positions:

STEP 3 Check the minimum thermostat
Check whether the minimum thermostats in the control cabinets are set correctly: at 35°C.

The MDX 30 has one panel with these switches. The MDX 60 has two panels, they are identical and have the same adjustment.

Image 5.5.4: Position of DIP switches.

5.6 COMMISSIONING

Before the installation is officially put into operation, it is essential that a structured start-up procedure is followed. The necessary steps are listed and explained below:

5.6.1 STARTING THE INSTALLATION

STEP 1 Check wiring
Check that all power and control cables are properly connected, free from damage, and are suitable for the system load. Confirm that the grounding system is functional and complies with applicable local codes and safety standards. Proper grounding is essential for protection against electrical shock and ensuring trouble-free system operation.

STEP 2 Visual inspection - indoor and outdoor unit
Check the indoor and outdoor units for physical damage, loose parts or fasteners, and foreign objects in or around the installation. Also check for any obstructions to airflow and ensure a clear working area around the equipment.

STEP 3 Restore the power supply
Energize the main power supply at the distribution panel, but leave any circuit breakers or fuses for specific subsystems such as heating elements (if applicable) turned off. Use a voltmeter to verify that the correct voltage is present at the power supply points.

STEP 4 Preparing the thermostat
Set the thermostat to the lowest temperature setting before activating the systems. This will prevent unwanted heating or cooling activation during initial start-up.

STEP 5 Turn on the circuit breakers
Turn on the circuit breakers for the electric

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heater or other subsystems. Wear appropriate personal protective equipment (PPE) during this operation.

STEP 6 **Thermostat at operating temperature**
Set the thermostat to the desired temperature setting, preferably above the ambient temperature, to actively switch the system. Observe the first moments of reaction of the system carefully.

STEP 7 **Checking the electrical installation**
Monitor the system during start-up and initial operation. Check for blown fuses, circuit breakers that keep tripping, or irregularities in consumption. Check for temperature increases in the wiring or connection points, which may indicate overload or bad connections.

STEP 8 **Checking mechanical operation**
Observe the system during the first few minutes of operation. Look for unusual noises, vibrations, or signs of overheating. Check that all fans, compressors, and valves are operating normally.

STEP 9 **Adjusting the blade**
Adjust the blade taking into account the movement of the air blown out into the room.

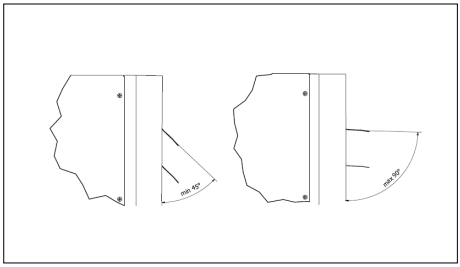

Image 5.6.1: Adjusting blades.

5.6.2 SET UP CONTROLS

Exact instructions for commissioning the thermostat can be found in the manual supplied with the thermostat.

5.6.3 COMPLETING INSTALLATION

STEP 1 **Record and document**
Record and document all connections made, referring to the electrical diagram used.

STEP 2 **Keep schematics and documentation**
Keep diagrams and documentation in an accessible place for later inspection or maintenance.

STEP 3 **Instruct the users**
Provide users with the instructions necessary to use the product safely and correctly.

6 USE AND OPERATION

CAUTION! Those responsible for installing the Mistral MDX must be present at the initial commissioning and to make any changes.

CAUTION! The Mistral MDX may not be put into operation until all safety devices and guards have been installed and are functioning correctly.

6.1 SWITCHING ON AND OFF

BEWARE! The operation described in this chapter does not de-energize the Mistral MDX. Additional steps are required to decommission.

BEWARE! The user must be familiar with the dangers and risks that may arise when using the Mistral MDX.

Switching the Mistral MDX does not require any special steps for use, below you can see the possibilities:

6.2 CONNECTION OPTIONS

6.2.1 USE WITH A PINTHERM MISTRAL

For optimal use, a PinTherm Mistral thermostat is required with the associated attributes for installation. Details and information about this can be found in the PinTherm Mistral manual.

PinTherm Mistral
www.markclimate.com/pintherm-mistral/

6.3 STOP IN CASE OF EMERGENCY

In case of emergency or calamity, immediately switch off the Mistral MDX and disconnect the power, this will disable all dangerous functions. It is advisable to be familiar with the contents of this subchapter.

STEP 1 Disable
If possible, turn off the Mistral MDX when operating.

STEP 2 De-energize
Remove power from the Mistral MDX, for example switch off the circuit breaker.

STEP 3 Resolve the cause of the emergency
Eliminate the cause of the emergency, using the fault diagram in chapter 11. Do not use the Mistral MDX if the cause cannot be completely remedied.

STEP 4 Commissioning
A qualified user (see chapter 3.2.1) may perform the installation commissioning steps to switch the Mistral MDX back on, which can be found in chapter 5.6. When doing so, take into account the risks of working on the installation, which can be found in chapter 3.2.3.

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7 MAINTENANCE

This chapter provides guidelines for carrying out maintenance and inspection work on the installation. A specific maintenance and inspection schedule has been drawn up for this purpose, which must always be strictly followed. The aim is to ensure safe, efficient and long-term operation of the system.

BEWARE! Consult the risk analysis in advance and always wear personal protective equipment (PPE) that is appropriate for the work to be carried out, as can be seen in chapter 3. Follow all applicable safety regulations carefully to prevent injury or damage.

7.1 MAINTENANCE INFORMATION

7.1.1 CONDITIONS OF MAINTENANCE

BEWARE! Disabling or bypassing any safety functions is not permitted under any circumstances when performing maintenance on the Mistral MDX. Such actions are not required and may result in hazardous situations.

7.2 MAINTENANCE INTERVALS

The maintenance activities are classified on the basis of fixed time intervals. Below follows a brief overview, after which the tasks are elaborated per time interval.

Semi-annual maintenance:

- Visual inspection of the Mistral MDX.
- Cleaning the Mistral MDX.

Annual maintenance:

- Visual inspection of the installation.
- Functional testing of the installation.

7.3 SEMI-ANNUAL MAINTENANCE

7.3.1 VISUAL INSPECTION OF THE MISTRAL MDX

A periodic visual inspection helps to detect wear, damage or contamination at an early stage and to prevent problems. Check that the installation is free of damage, loose components and contamination. If necessary, take appropriate corrective measures.

STEP 1 General visual inspection
Perform a thorough inspection of the MISTRAL MDX. Look for signs of damage, corrosion, deformation or other irregularities. If any defects are found, do not use the installation and contact a qualified technician immediately.

STEP 2 Checking the fastening material
Check that all fasteners are tight and that there are no signs of wear or loosening. Tighten fasteners if necessary. Record this action in the maintenance log. If this is repeatedly necessary, structural or preventive measures should be considered.

7.3.2 CLEANING THE INDOOR UNIT

Keeping the Mistral MDX clean is essential for safe operation and optimum life of the device. Regular cleaning prevents the build-up of dust and dirt, which can adversely affect performance. If the installation is located in a highly polluted environment, adjust the maintenance schedule accordingly.

STEP 1 Make sure the appliance has cooled down
Only perform cleaning operations when the Mistral MDX has completely cooled down. The morning before use is usually the most suitable time.

STEP 2 Clean with a soft, dry cloth
Use a clean, soft and dry cloth to wipe the outside of the unit. Avoid using aggressive cleaning agents or mechanical cleaning devices as these may damage the finish or components. For stubborn dirt, a mild cleaning agent suitable for technical equipment may be used. Test this first on an inconspicuous area.

7.3.3 CLEANING THE OUTDOOR UNIT

For guidelines and instructions regarding maintenance of the outdoor unit, please refer to the corresponding manual of the outdoor unit. Please read this documentation carefully to ensure correct installation and safe operation.

7.4 ANNUAL MAINTENANCE

7.4.1 VISUAL INSPECTION OF THE INSTALLATION

A visual inspection of the entire installation is necessary to ensure that no circumstances surrounding the Mistral MDX have changed. For example, this could be damage to a cable duct

that would not be noticeable during normal use.

STEP 1 **General inspection**
Perform a general inspection of the installation and therefore cabling for damage and other hazards. If these are found do not use the installation.

7.4.2 FUNCTIONAL TESTING

Functional testing of the installation and Mistral MDX ensures proper use and can reveal errors in the installation at an early stage.

STEP 1 **Turn the thermostat down**
Set the thermostat to the lowest temperature setting to initiate a full start-up cycle.

STEP 2 **Let the Mistral MDX cool down**
Wait until the device has cooled down completely. This process can take a long time, so it is best to do this overnight.

STEP 3 **Turn the thermostat up**
Turn the temperature on the thermostat to the maximum heating position and keep an eye on the following:

STEP 4 **Check electrical**
Check the electrical system during a full warm-up. Confirm that no fuses blow or circuit breakers trip during the heating process. Inspect the wiring for temperature variations.

STEP 5 **Check mechanically**
Check the Mistral MDX during the initial start-up phase to ensure that it operates without any unusual noise, vibration or overheating.

7.4.3 CLEANING THE AIR DISTRIBUTION PLATE

The Mistral MDX has air distribution plates, these serve to guide the blown air over the exchanger. This prevents speed differences. These air distribution plates must be cleaned at least once a year. If the distribution plates are exceptionally dirty during maintenance, maintenance must be carried out more often.

STEP 1 **To deploy, to secure**
Before performing any work, the Mistral MDX must be switched off and made safe. Follow the correct procedures to do this.

STEP 2 **Detaching the cover plate**
Remove the cover plate from the air distribution plate.

STEP 3 **Loosen the air distribution plate**
The air distribution plate is attached to the side of the frame, loosen it.

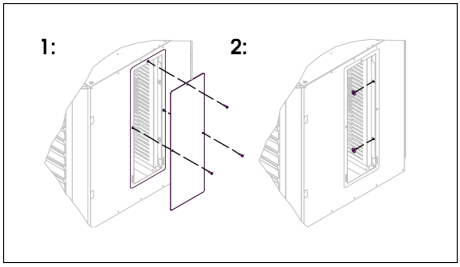

Image 7.4.3.1: Disassembling the air distribution plate.

STEP 4 **Remove air distribution plate**
Remove the air distribution plate from the Mistral MDX.

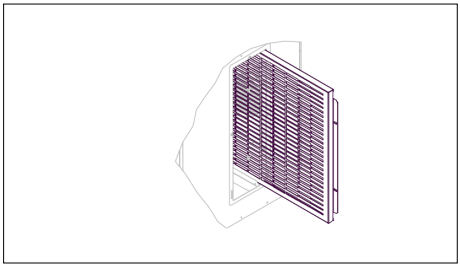

Image 7.4.3.2: Removing the air distribution plate.

STEP 5 **Clean the air distribution plate**
Clean the air distribution plate with compressed air and/or a vacuum cleaner. Do not use liquids or cleaning agents.

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STEP 6 **Mount the air distribution plate**
Replace the air distribution plate and reassemble with the loosened material.

7.5 REPAIRS AND REPLACEMENTS

7.5.1 REPLACING SENSORS

The sensors of the Mistral MDX can become defective over time and require replacement. The sensors of the Mistral MDX are described below with their function and mounting location.

Type	Sensor description
TC	Where the temperature of the pipe is the lowest. This is about 2/3 from the liquid side.
TCJ	In the air passage where the temperature remains lowest at 50 mm from the end plate.
TA	In the air return position, before it is mixed with (fresh) supplied air.
MT	On the gas line of the Mistral MDX.

Table 7.5.1.2: Sensor types of the Mistral MDX.

CAUTION! When mounting the sensors, it is important that no moisture can enter the sensors.

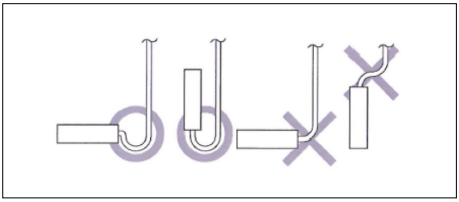

Image 7.5.1.3: View of correct cable position.

SENSORS OF THE MISTRAL MDX 30

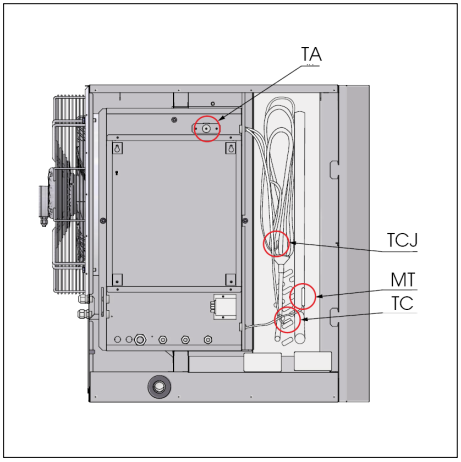

Image 7.5.1.4: Sensors of the Mistral MDX 30.

SENSOR **The TA sensor of the MDX 30**

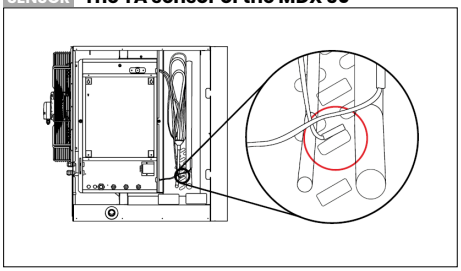

Image 7.5.1.5: TC Sensors of the Mistral MDX 30.

SENSOR **The TC sensor of the MDX 30**

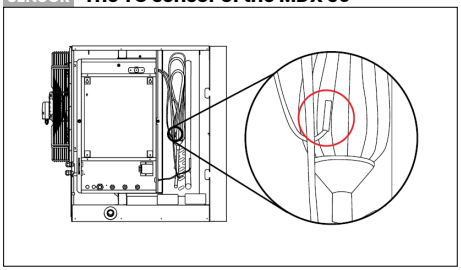

Image 7.5.1.6: TCJ Sensors of the Mistral MDX 30.

SENSOR **The TCJ sensor of the MDX 30**

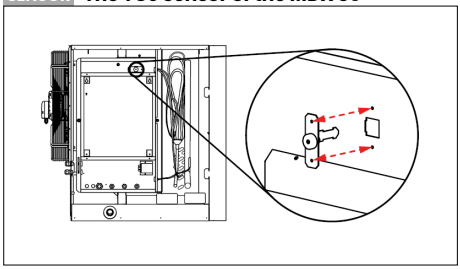

Image 7.5.1.7: TA Sensors of the Mistral MDX 30.

SENSOR **The MT sensor of the MDX 30**

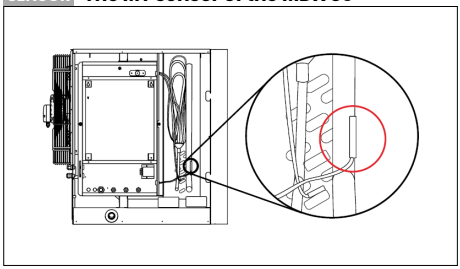

Image 7.5.1.8: MT Sensors of the Mistral MDX 30.

SENSORS OF THE MISTRAL MDX 60

CAUTION! This product has 2 connections; do not confuse them.

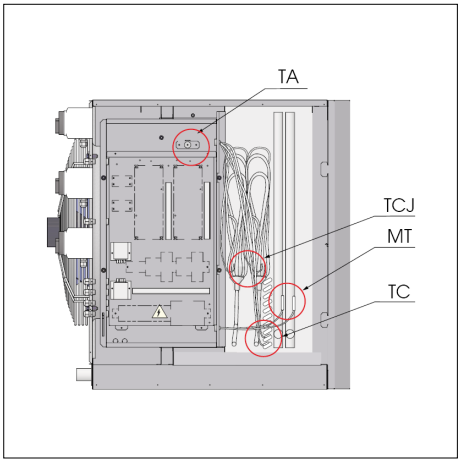

Image 7.5.1.10: Sensors of the Mistral MDX 60.

SENSOR **The TA sensor of the MDX 60**

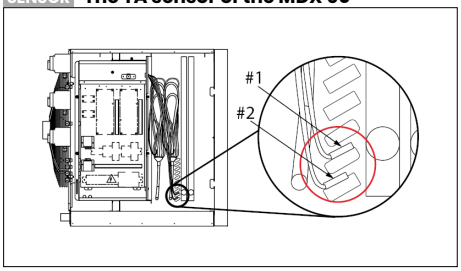

Image 7.5.1.11: TC Sensors of the Mistral MDX 60.

SENSOR **The TC sensor of the MDX 60**

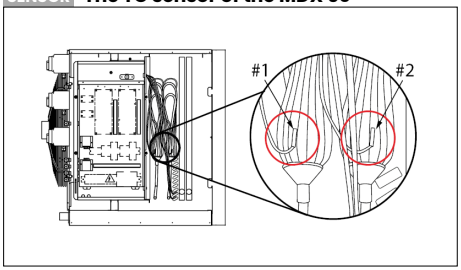

Image 7.5.1.12: TCJ Sensors of the Mistral MDX 60.

SENSOR **The TCJ sensor of the MDX 60**

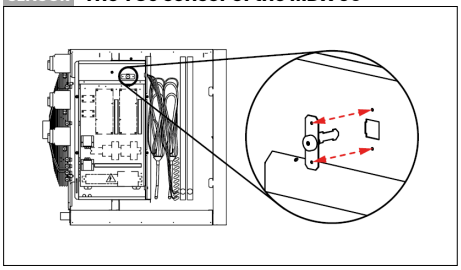

Image 7.5.1.13: TA Sensors of the Mistral MDX 60.

SENSOR **The MT sensor of the MDX 60**

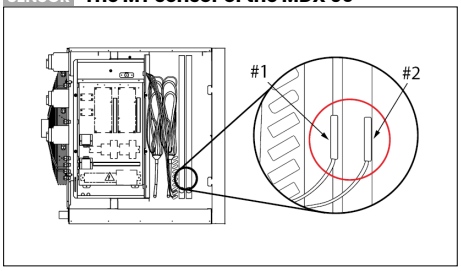

Image 7.5.1.14: MT Sensors of the Mistral MDX 60.

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REPLACING SENSORS

STEP 1 **To deploy, to secure**
Before performing any work, the Mistral MDX must be switched off and made safe. Follow the correct procedures to do this.

STEP 2 **Disassemble hood**
Remove the cover of the Mistral MDX to access the sensors.

STEP 3 **Replacing sensors**
It is then possible to replace defective sensors. Below are the various sensors and their positions.

STEP 4 **Install hood**
Replace the Mistral MDX cover.

7.5.2 REPLACE CONDENSATE PUMP

When the condensate pump fails, it must be replaced.

STEP 1 **Dismantle fan wall**
Remove the fan wall of the Mistral MDX behind which the condensate pump is located, as shown in the image below.

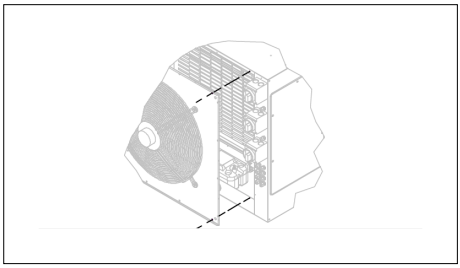

Image 7.5.2.2: Disassemble fan wall.

STEP 2 **Remove pump**
The condensate pump is attached by means of two bolts, each on a bracket, these can be removed, after which the pump can be pulled away.

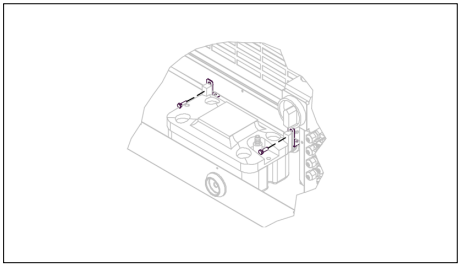

Image 7.5.2.3: Dismantle the condensate pump.

STEP 3 **replace the pump**
Replace the condensate pump and reassemble with the loosened material.

8 UNINSTALL

This chapter provides instructions for disassembling and uninstalling the Mistral MDX.

BEWARE! Consult the risk analysis in advance and always wear personal protective equipment (PPE) that is appropriate for the work to be carried out, as can be seen in chapter 3. Follow all applicable safety regulations carefully to prevent injury or damage.

8.1 DECOMMISSIONING

STEP 1 Set to lowest position
Set it to the lowest temperature setting before beginning the uninstall process. This will prevent accidental activation when the unit is turned back on.

STEP 2 Disconnect the installation from the power supply
Disconnect the distribution panel. Confirm that the circuit is de-energized by removing the fuses or turning off the appropriate circuit breakers. Use a voltmeter to verify that there is no current present.

STEP 3 Let the Mistral MDX cool down
If the Mistral MDX is still warm, allow it to cool completely first.

8.2 DISASSEMBLY

STEP 1 Remove refrigerant
Remove the refrigerant from the installation in accordance with applicable legislation during dismantling.

STEP 2 Disconnect the cables
Disconnect the used power cables, data cables and signal cables. Remove them when they are no longer needed.

STEP 3 Disassemble the Mistral MDX
Disassemble the Mistral MDX from its support, either the wall bracket or hanging kit. Lower the unit onto a soft surface to protect it for future use.

STEP 4 Dismantle the mounting hardware
Remove used mounting hardware for future use or complete decommissioning. Ensure that no components are left unsecured to prevent future hazards.

8.3 PACKAGING, STORAGE, MOVEMENT AND RECYCLING

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8.3.1 PACKING AND STORAGE

STEP 1 Cleaning
Completely clean and dry all components.

STEP 2 Proper packaging
Keep all components together during storage to prevent an incomplete installation later. Pack the components as received to prevent damage. If possible, use silica desiccants packed with the components to prevent possible condensation.

STEP 3 Store properly
Store the installation in a cool, dry and dust-free environment.

8.3.2 DISPOSAL AND RECYCLING

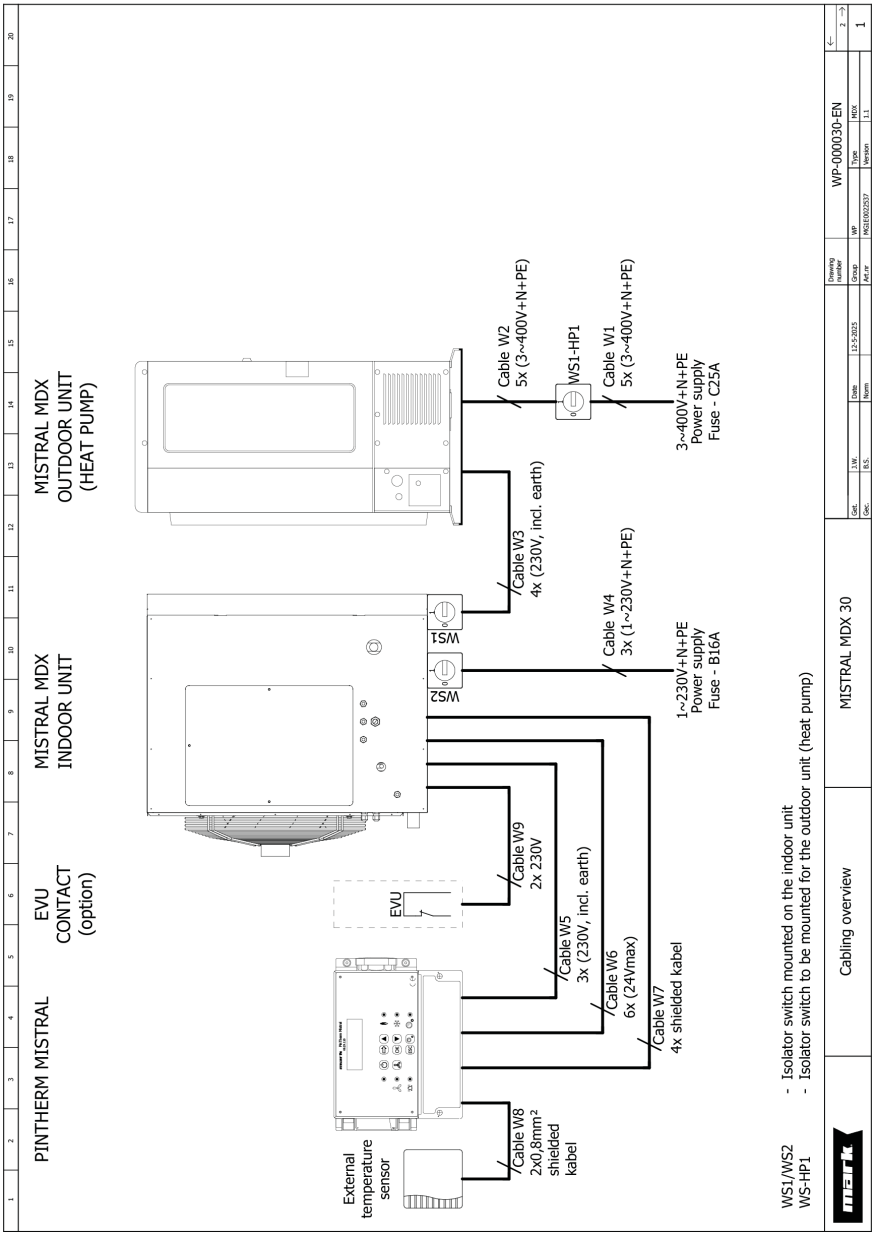
CAUTION! Electrical waste
Electrical waste products must not be disposed of with household or residual waste. Please dispose of at an electrical waste collection point.

CAUTION! Contains plastics
Used plastics must be separated for processing, if required by local regulations.

CAUTION! Dispose of coolant
Please ensure that correct procedures are used to remove refrigerant from the Mistral MDX.

9 ELECTRICAL DIAGRAMS

9.1 MISTRAL MDX 30 WIRING DIAGRAM



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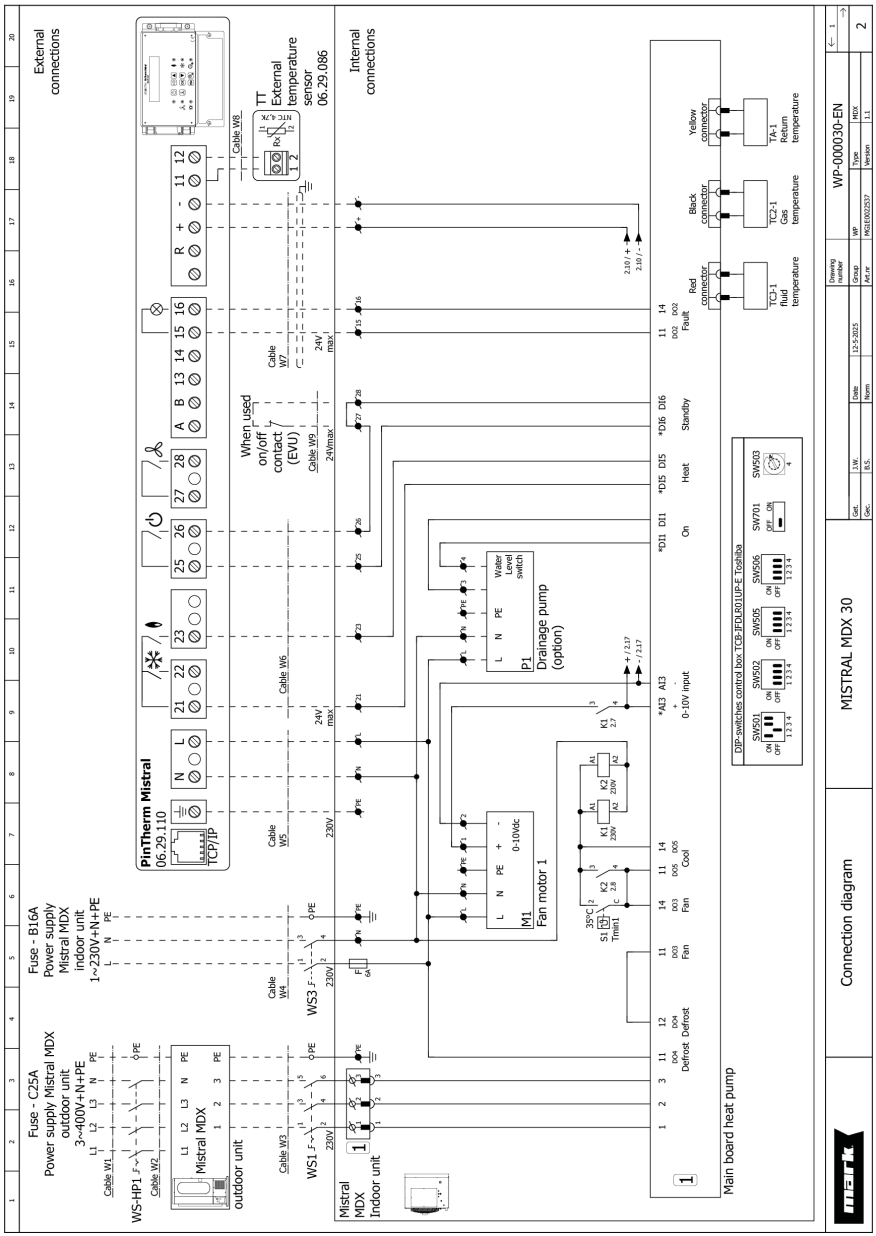
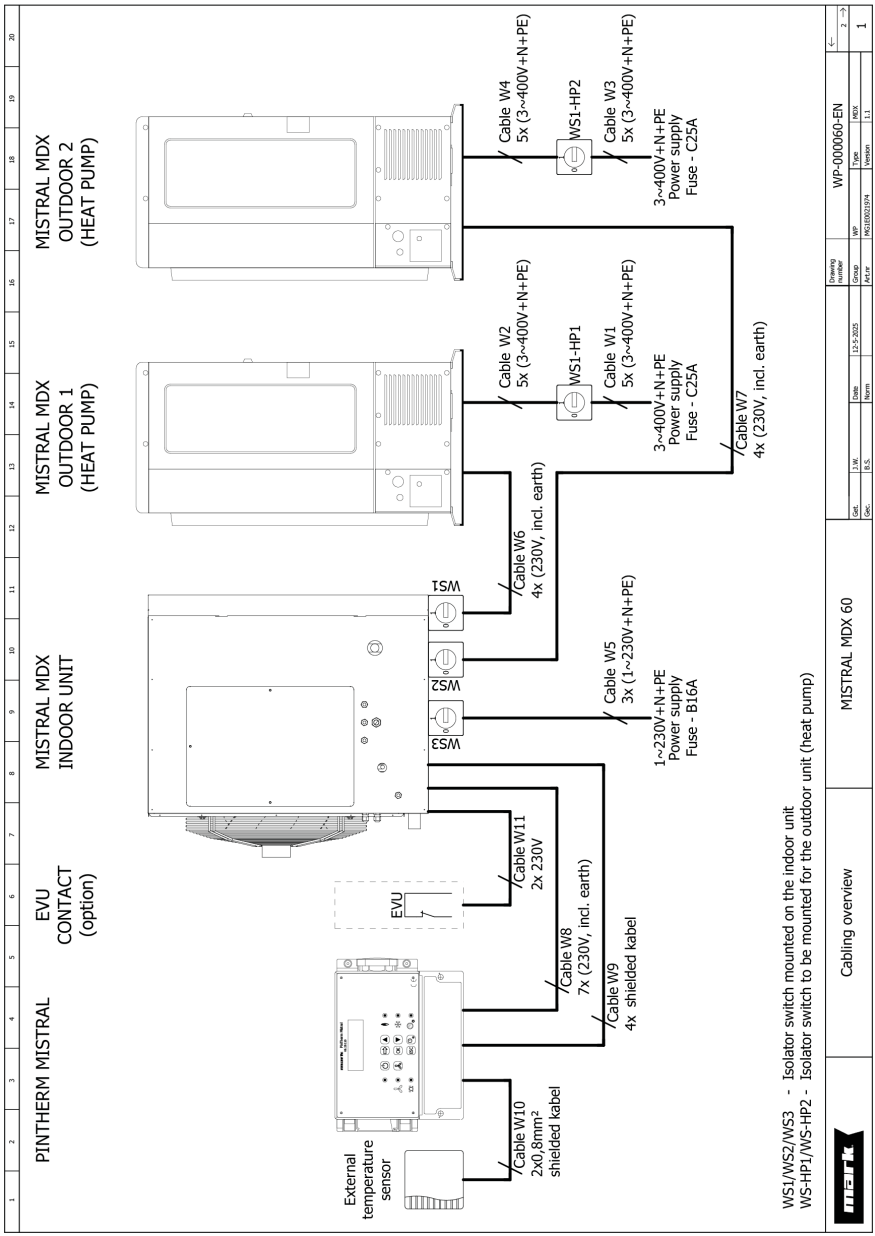
9.2 MISTRAL MDX 30 CONNECTION DIAGRAM



9.3 MISTRAL MDX 60 WIRING DIAGRAM



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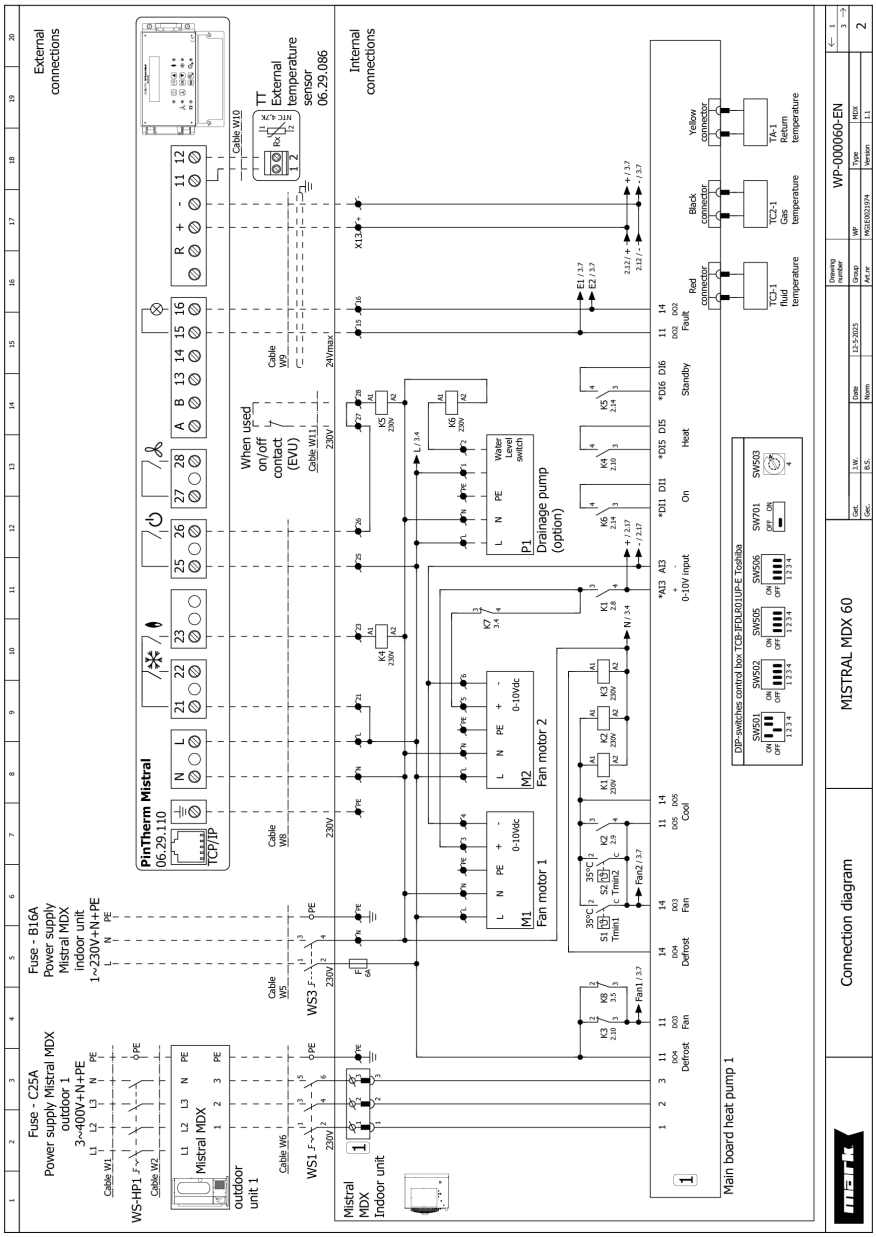
9.4 MISTRAL MDX 60 CONNECTION DIAGRAM



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