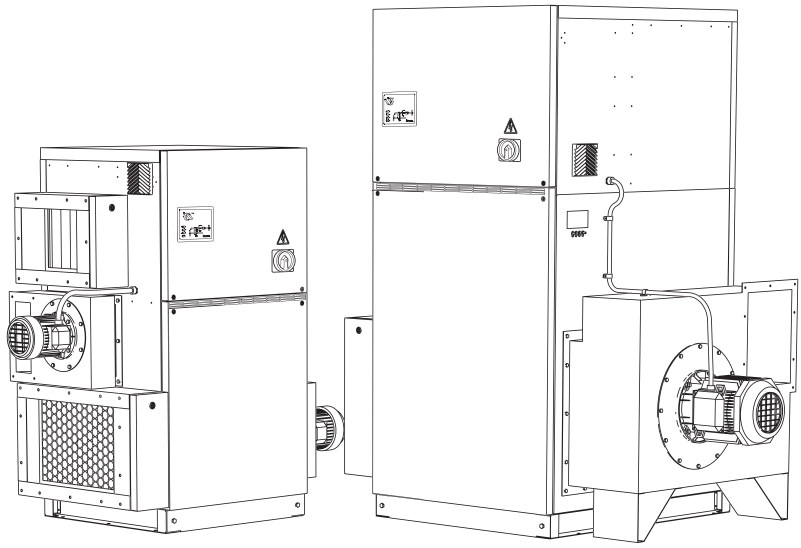
Original instructions

User´s manual

MX2700, MX3700, MX5000, MX6200, MX7600, MXT5000, MXT7500, MXT9000



Desiccant Dehumidifier

Basic version

Applies to all units manufactured
from week 50, 2009

190TGB-1018-E1107

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Munters

Important user information

Intended use of equipment

Munters dehumidifiers are intended to be used for the dehumidification of air. All other uses of the equipment, or use which is contrary to the instructions given in this manual, can cause personal injury and/or machine damage.

Warranty and obligations

The warranty period is valid from the date the equipment left our factory, unless otherwise advised in writing. The warranty is limited to a free exchange including free freight of the faulty unit or components, which have failed as a result of faulty quality or defects in manufacture. Munters guarantees that the unit supplied has undergone thorough testing to ensure that it meets the specifications given here. All warranty claims must include proof that the fault has occurred within the warranty period and that the unit has been used in accordance with the specifications. All claims must specify the unit type and manufacturing number. This information is stamped on the unit identification plate, see the section Marking.

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Safety

In this publication hazardous activities are indicated and preceded by the common hazard symbol.

WARNING!

is used in this publication to indicate a possible danger that could lead to personal injury. An instruction is normally given, followed by a short explanation, plus the possible effects if the instruction is not followed.

CAUTION!

is used in this publication to indicate a possible danger that could lead to damage to the machine or other equipment and/or cause environmental damage. An instruction is normally given, followed by a short explanation, plus the possible environmental effect if the instruction is not followed.

NOTE! *Used to accentuate supplementary information that is required for problem-free use or optimal use of the unit.*

Conformity with directives and standards

We Munters Europe AB declare that the dehumidifier is in conformity with the essential health and safety requirements of the Machinery Directive 2006/42/EC, the Low Voltage Directive 2006/95/EC and the EMC Directive 2004/108/EC. The dehumidifier is manufactured by an ISO 9001:2008 accredited manufacturing organisation.

Table of content

1 Introduction

1.1 General

Munters MX-series and MXT-series are two ranges of dehumidifiers, all described in this manual. MX and MXT units described are designed as stand alone units. Munters product range for dehumidification includes units designed for different applications. Contact nearest Munters dealer regarding any questions for specific installations.

WARNING!

The dehumidifier is intended for indoor installation only

1.2 Manual composition

This manual is written for the user of the dehumidifier and describes the installation, operation, maintenance and basic fault finding.

The manual is divided into numbered chapters and sections. The table of content gives a quick overview. Each chapter can be used separately. Figures and tables are numbered within each chapter. Example: Figure 1.3 is figure number 3 in chapter 1.

Each individual application/configuration adds a number of functions and components to the base unit. This is specified through the "MX Dehumidifier Configuration" sheet, which can be found in front of this manual. This sheet also includes references to Appendices, where more information about configuration functions and components can be found.

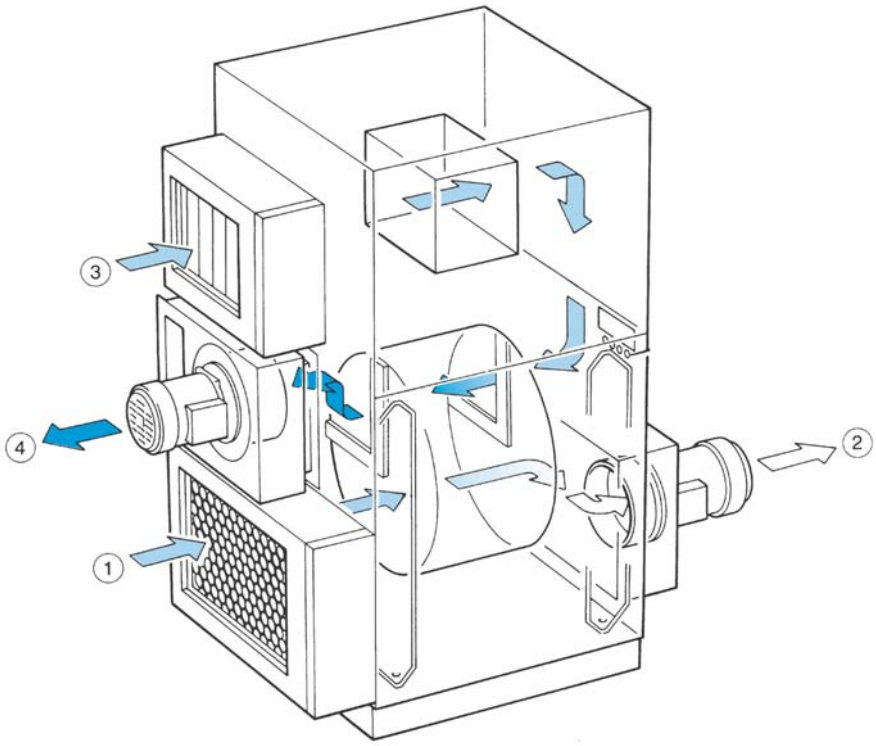
For wiring details (including control options), refer to the electrical wiring diagram . For steam reactivation heater details, refer to the Steam Heater Supplement.

1.3 Product range and applications

The MX range of dehumidifiers are designed for process airflows between 2700 and 7600 m^3/h and are ideally suited for environments where simple 1- or 2-step humidity transmitter control is required.

The MXT range covers process airflows between 5000 and 9000 m^3/h, and are specifically designed for dehumidification control in storage environments, ice rinks, swimming pools and other applications requiring high moisture removal combined with good energy efficiency.

1.4 Principle of operation



1. Process Air
2. Dry Air
3. Reactivation Air
4. Wet air

Figure 1.1 Airflow overview

1.4.1 Dehumidi cation

The desiccant rotor is the moisture absorbing part of the dehumidifier. The rotor is divided into two sectors comprising the Process Sector (270°) and the Reactivation Sector (90°). The air to be dehumidified (Process Air) is drawn through the process sector of the rotor, whose structure forms narrow air flutes. The walls of the rotor include High Performance Silica Gel (S) or Lithium Chloride (L) which absorbs the moisture from the air, and the resulting dry air is delivered at the dry air outlet. See *Figure 1.1*

1.4.2 Reactivation

A separate airflow (Reactivation Air) is heated and drawn through the reactivation sector of the rotor. This heated air evaporates the moisture from the reactivation sector of the rotor. The moisture laden air (Wet Air) is then vented outside the humidity controlled atmosphere. See *Figure 1.1*

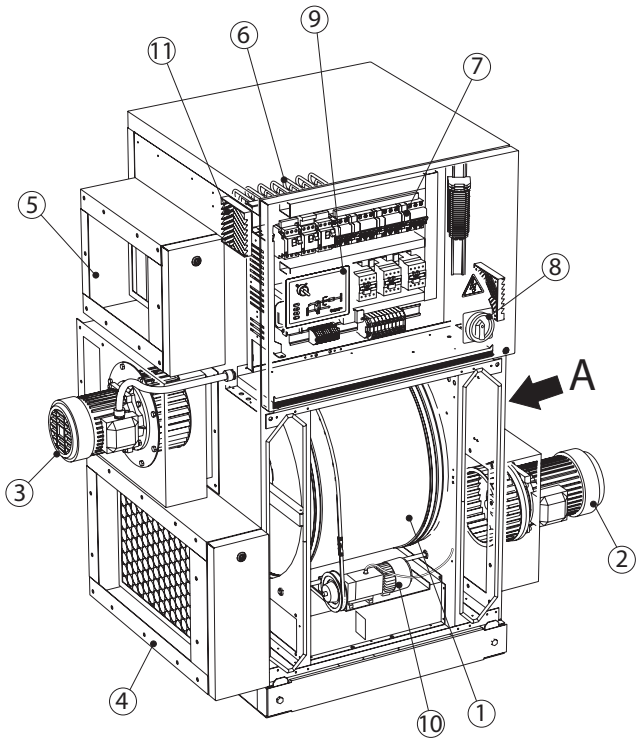
Whilst this sequence is occurring, the rotor is slowly rotating (approximately 8 revolutions per hour). This rotation ensures that a new section of the rotor requiring reactivation is continuously presented to the heated reactivation sector. At the same time a new section of reactivated rotor is presented to the process air, ready to absorb moisture. The dehumidification process is therefore repeated continuously.

1.5 Construction

The dehumidifiers are designed to meet the requirements of IEC protective class IP 44.

All the functional components are enclosed in a corrosion resistant Aluzink® case (standard) or stainless steel case (option) which ensures ease of installation and access for maintenance. See *Figure 1.2* . The unit is constructed on a steel base frame which allows the use of a fork-lift truck during transportation and installation.

The seals dividing the process and reactivation airflows are designed to very high standards, and their low frictional properties guarantee long and continuous service life.
The control system provides a "simple" display to show the operating status of the unit and the reactivation air temperature.



1. Rotor
2. Process air fan and motor
3. Reactivation air fan and motor
4. Process air lter
5. Reactivation air lter
6. Reactivation heater
7. Electric control panel
8. Mains isolator
9. Control panel
10. Rotor drive motor
11. Cooling fan

Figure 1.2 General arrangements

1.6 Configurations

An MX/MXT unit can be configured to fit a large number of applications in terms of capacity and functionality. Maximum capacity and most functions are specified at the ordering procedure, but some functions can be set and altered at start-up. Refer to section *2.11, Pre-start settings* .

Each individual unit is specified through the "MX Dehumidifier Configuration" sheet, which can be found in front of this manual. For more information about configuration functions and components, refer to appendix *1, - General configurations* and appendix *2, Control configurations*.

1.7 Marking

Identification and information markings are positioned on the unit as follows:

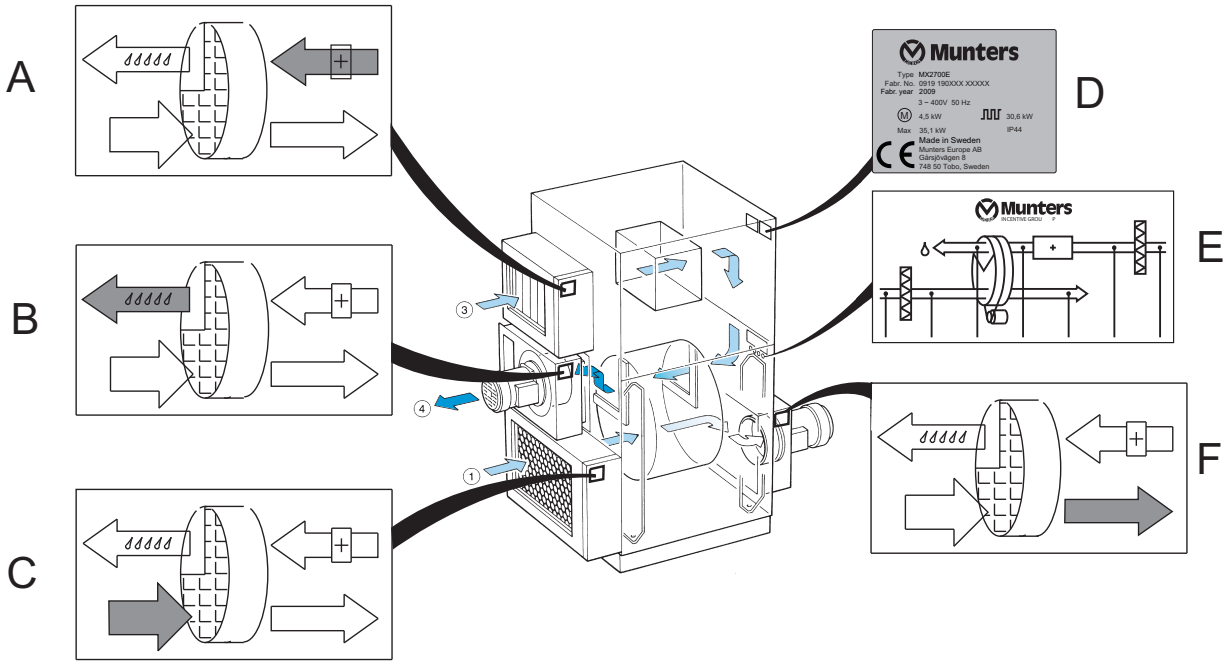


Figure 1.3 Markings

A. Reactivation air inlet

B. Wet air outlet

C. Process air inlet

D. Main identi cation plate

E. Pressure test points

F. Dry air outlet

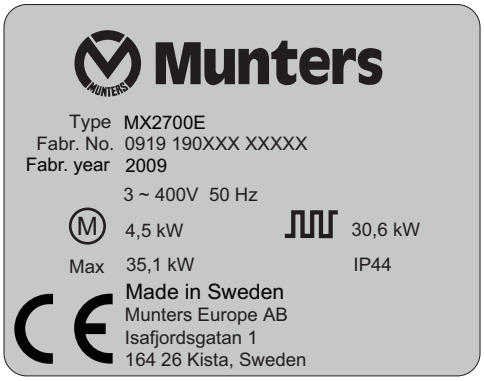


Figure 1.4 Example of identification plate

Explanation of "Fabr. No" on the identification plate:

09: Year of manufacture

19: Week of manufacture

190XXX: Article number

XXXXX: Serial number

1.8 Safety and Cautions

The contents of this manual include suggested best working practices and procedures. These are issued for guidance only, they do not take precedence over the individual responsibility and/or local safety regulations. During installation and operation of this equipment it is always each individual person's responsibility to consider:

- Their own and others' personal safety.
- The safety of the unit through correct use of the equipment in accordance with the descriptions and instructions given in this manual.

Every care has been taken in design and manufacture of MX/ MXT-series dehumidifiers to ensure that they meet the safety requirements of the directives and standards listed in the EC Declaration of Conformity.

It is recommended to be informed about the use of safety symbols in this manual by reading the **Important user information** in front of this chapter. The relevant safety information for this manual will be found listed early in each manual section.

2 Installation

2.1 Safety

WARNING!

- The dehumidifier is not intended for use in hazardous (classified) areas.

- The dehumidifier must only be installed in a well ventilated area in accordance with the Gas Directive regulations.

- Heavy load, the dehumidifier weighs in excess of 350 kg. To prevent injury, or damage to the dehumidifier, always use approved equipment.

- Commissioning and initial start up must be carried out by authorised personnel only.

- Electrical connections must be carried out in accordance with local electricity regulations by qualified personnel.

- The dehumidifier must never be operated on a voltage or frequency other than that for which it was manufactured.

- Connection of steam pipes must be carried out in accordance with local regulations by qualified personnel.

- Connection of gas pipes must be carried out in accordance with local regulations by qualified personnel.

- The burner sight glass and surrounding metalwork can reach temperatures in excess of 65 ˚C. Physical contact should be minimised to avoid the risk of burning.

- Rotating hazard - to prevent access to the fan impellers the dehumidifier must only be run with the wet and dry air ducts connected.

2.2 Delivery and storage

1. Check the delivery against the delivery note, order confirmation or other delivery documentation and check that everything is included.
2. Contact Munters immediately if something is missing, in order to avoid installation delays.
3. If the unit is to be put into storage prior to installation, it must be protected from physical damage, be stored under cover and protected from dust, frost and rain.

NOTE! *If installation is not to be carried out immediately after the arrival of the equipment, it is advisable to leave the packaging material in place on the dehumidifier, or to re-use the packaging material to provide temporary protection for the unit during later transportation to the site and during installation.*

4. Remove all packaging material from the unit, check carefully to make sure that no damage has occurred during transportation.
5. Any visible damage must be reported in writing to Munters before the unit is installed.

2.3 Moving the dehumidifier

WARNING!

Heavy load, the dehumidifier weighs in excess of 350 kg. To prevent injury, or damage to the dehumidifier, always use approved equipment

The dehumidifier must always be handled with care. It can be moved using either an overhead crane or a fork-lift truck. If an overhead crane is used, it is necessary to take the precaution of using a suitable sling which will keep clear of, and prevent damage to, the motors, control panel and exposed pipework.
To gain access to the fork-lift positions, remove the kick plate (for details refer to *Figure 2.1*). When the unit has been lifted into position, the kick plate should be replaced.

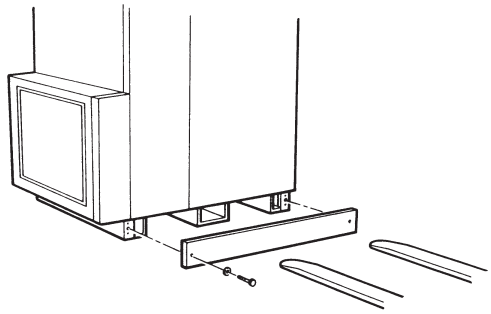


Figure 2.1 Fork lift positions

2.4 Site requirements

To achieve optimum performance and trouble-free service, it is essential that the proposed installation site meets with the location and space requirements for the model being installed. For dimensions, weight and space requirements, including service access details, refer to section *6.2, Dimensions and space requirements*.

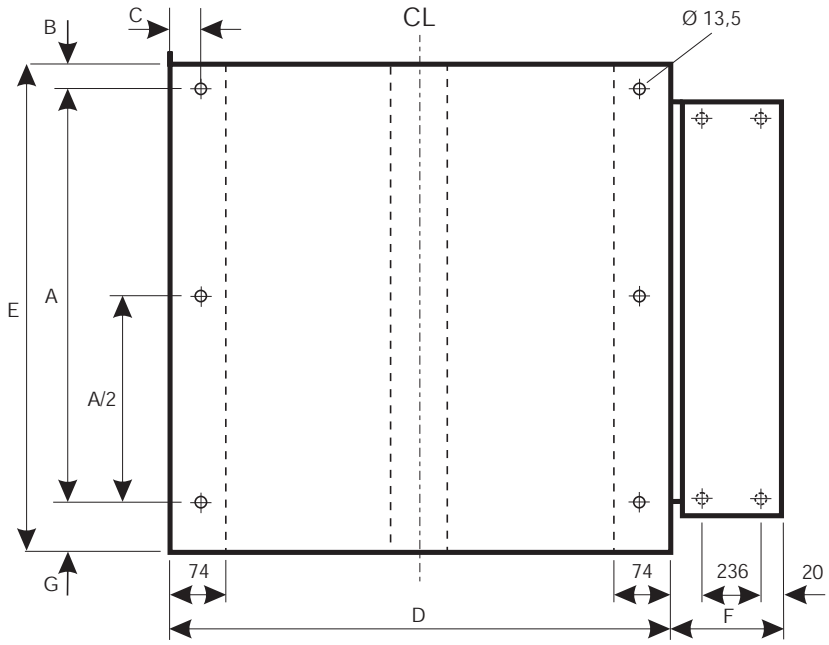
NOTE! *It is important to ensure that the minimum service access space is maintained for cleaning and maintenance purposes.*

NOTE! *If there is a need for reduction of vibrations from the dehumidifier, contact Munters for instructions. Refer to standard EN 1299+A1:2008.*

To prevent condensation forming inside the dehumidifier, it must not be exposed to ambient air temperatures less than the dewpoint of the process air. In addition, if the dehumidifier is installed outdoors, it must be properly sheltered from snow, frost and rain.

2.5 Foundation

The dehumidifier must be installed on a level floor, or platform, which has been designed with a floor loading capacity capable of supporting the machine's weight. If the maximum floor loading weight is not exceeded, special foundations are not required. When the dehumidifier has been installed, it should be checked that it is level. If local regulations require that the unit is permanently fixed in position, the fixing holes can be used for bolting the unit to the floor. For drilling details refer to *Figure 2.2* and *Table 2.1*.



F = 180mm (MX2700)
F = 300mm (MX3700, MX5000, MX6200, MXT5000)
F = 375mm (MX7600, MXT7500, MXT9000)

Figure 2.2 Plinth drilling pattern

Item	MX2700	MX3700,MX500, MX6200,MX7600,MXT5000, MXT7500,MXT9000
	Dimension (mm)	Dimension (mm)
A	600	900
B	92	92
C	25	25
D	800	1000
E	784	1190
G	92	198

Table 2.1 Plinth drilling dimensions

2.6 Ducting

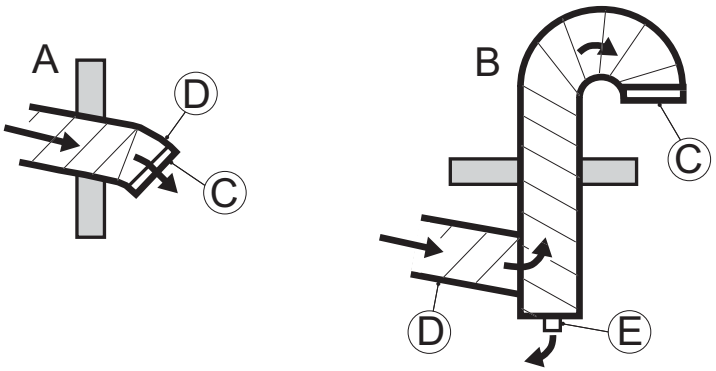
2.6.1 General recommendations

The connections for process and reactivation air are designed in accordance with the recommendations in ISO 13351. The duct connections contain tapped inserts for M8 bolt fixings. For connection details refer to section *2.6.3, Duct connections*.

NOTE! *Where angle-flanged duct connections are installed, the fixing bolt length must not exceed 20 mm.*

When installing ductwork between the dehumidifier and the inlet and outlet connections, the following recommendations should be observed:

- The length of ductwork should be kept as short as possible to minimise static air pressure losses.
- To maintain performance, all rigid process or reactivation air ductwork joints must be air and vapour tight.
- The process air ductwork should be insulated to prevent condensation from developing on the outside of the duct whenever the temperature of the air within the duct falls below the dewpoint of the ambient air through which the ductwork is routed.
- The ducting must always be insulated when there is a risk of freezing.
- The wet air leaving the dehumidifier will easily cause condensation on the inside of the duct walls due to the high moisture content. This must be avoided by insulating the ducts.
- Horizontal ducts must be installed sloping downwards (away from the dehumidifier) to drain away possible condensation. The slope must be at least 2 cm/m duct. On the wet air ducting, suitable condensation drains should be made at low points of the ducting to prevent water accumulation, see *Figure 2.3* .
- Ensure that access for operation and servicing is not restricted when designing and installing ducting. For more information, refer to *6.2, Dimensions and space requirements*.
- To reduce noise and/or vibration being transmitted along rigid ductwork, high quality, airtight flexible connections should be fitted.
- Ducts mounted directly onto the dehumidifier should be adequately supported to minimise the load and stress due to the weight and movement of the ducting.
- Dampers for balancing the airflows must be installed in the dry air outlet and the reactivation air inlet ducts. The correct airflows are essential for maintaining the operating efficiency of the unit. For air flow adjustment details, see section *2.13, Airflow adjustment*.
- The total resistance in the process and reactivation ductwork must not exceed the performance rating of the fans fitted in the dehumidifier. For details of minimum available static pressure, see section *6, Technical specification*.
- The wet air ducting should be manufactured in corrosion resistant material, and should be capable of withstanding temperatures of up to 100° C.

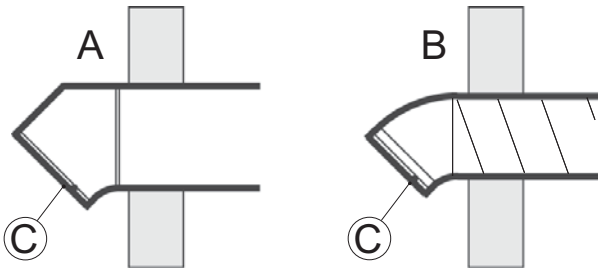


A. Horizontal wet air outlet
B. Vertical wet air outlet
C. Wire netting (mesh width ~10 mm)
D. Downward slope
E. To condensate drain

Figure 2.3 Wet air outlet design

When bringing outside air into the dehumidifier, the opening to the inlet duct should be sufficiently located above ground level to prevent the pick-up of dust and debris. The air inlet must be located away from possible contaminants such as engine exhaust gasses, steam and harmful vapours.

To prevent the wet (outlet) air humidifying the reactivation or process (inlet) air, the outdoor air inlet must be located at least 2 meters from the wet air outlet. In addition, the ducting should be designed to prevent rain and snow from being drawn into the dehumidifier.



A. Rectangular ducting
B. Round ducting
C. Wire netting (mesh width ~10 mm)

Figure 2.4 Outdoor air inlet design

2.6.2 Precaution for units using LI desiccant rotor

NOTE! *To prevent a lithium chloride (LI) desiccant rotor from becoming overloaded when the dehumidifier has been switched off, air with a relative humidity exceeding 80% must not pass through the rotor.*

It is recommended to install motorized and air tight shut-off dampers in the inlet process and reactivation air openings to the dehumidifier. This to prevent air with very high relative humidity from inadvertently being drawn through the rotor by a chimney effect created by ancillary equipment. This is particularly important when the process air is drawn from outdoors, or the system has been fitted with a pre-cooler. Failure to observe these precautions could result in a serious loss of performance and may cause permanent damage to the rotor.

2.6.3 Duct connections

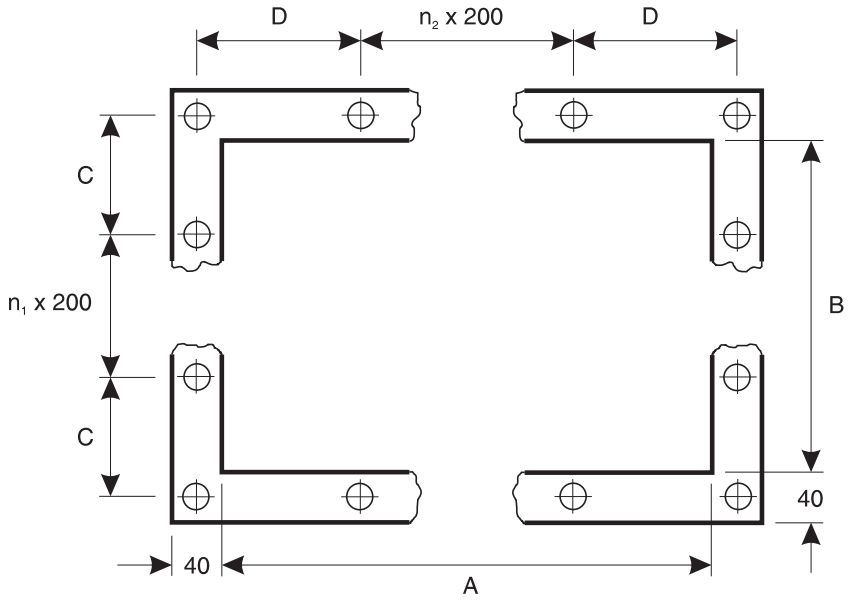


Figure 2.5 Duct connection details

Model	Process air inlet (mm)						Dry air outlet(mm)						Reactivation air inlet (mm)						Wet air outlet (mm)					
	A	B	C	D	n_1	n_2	A	B	C	D	n_1	n_2	A	B	C	D	n_1	n_2	A	B	C	D	n_1	n_2
MX2700	600	400	120	120	1	2	200	300	170	120	0	0	400	300	170	120	0	1	100	300	170	140	0	0
MX3700	1000	600	120	120	2	4	246	500	170	290	1	0	600	400	120	120	1	2	200	300	170	120	0	0
MX5000	1000	600	120	120	2	4	246	500	170	290	1	0	600	400	120	120	1	2	150	300	170	190	0	0
MX6200	1000	600	120	120	2	4	246	500	170	290	1	0	600	400	120	120	1	2	150	300	170	190	0	0
MX7600	1000	600	120	120	2	4	296	396	120	170	1	0	600	400	120	120	1	2	150	300	170	190	0	0

Model	Process air inlet (mm)						Dry air outlet(mm)						Reactivation air inlet (mm)						Wet air outlet (mm)					
	A	B	C	D	n_1	n_2	A	B	C	D	n_1	n_2	A	B	C	D	n_1	n_2	A	B	C	D	n_1	n_2
MXT5000	1000	600	120	120	2	4	246	500	170	290	1	0	600	400	120	120	1	2	200	300	170	120	0	0
MXT7500	1000	600	120	120	2	4	296	396	120	170	1	0	600	400	120	120	1	2	150	300	170	190	0	0
MXT9000	1000	600	120	120	2	4	296	396	120	170	1	0	600	400	120	120	1	2	150	300	170	190	0	0

Table 2.2 Duct connection dimensions

NOTE! *Dry air/wet air outlets (without fans fitted) are the same size as their respective inlets.*

2.7 Electrical connections

WARNING!

Electrical connections must be carried out in accordance with local electricity regulations by qualified personnel.

The unit is designed for 3-phase AC operation. Each unit is supplied complete with all the internal wiring installed and configured in accordance with the voltage and frequency specified on the identification plate (see *Figure 1.4*).

WARNING!

The dehumidifier must never be operated on a voltage or frequency other than that for which it was manufactured.

The main power supply is connected directly on the switch disconnecter/main circuit breaker on the unit. The supply cable, and main fuses if the unit is equipped with a switch disconnecter, must be dimensioned in accordance with the unit being installed. On units equipped with main circuit breaker it is not necessary to install main fuses in the supply (also refer to local regulations).

For connection details refer to the identification plate and the electrical wiring diagram

2.8 External humidity transmitter

The MX and MXT series dehumidifiers are pre-wired so that they can be controlled by an externally mounted single or 2–step humidity transmitter.

2.8.1 Location requirements

When external sensors are installed, they should be sited in accordance with the following guidelines:

- The sensor should be located at least 1 to 1,5 m above the floor level so that it can sense a representative level of relative humidity in the room to be controlled.
- The sensor should be mounted in a position where it will not be directly subjected to the influence of either dry or moist air (avoid draughts from open doorways etc.)
- The sensor should not be located close to heat-producing equipment, or exposed to direct sunshine, since changes in temperature will have a direct effect on the relative humidity.

2.8.2 Electrical speci cations

- The humidity transmitter connecting cable should have a conductor cross sectional area of not less than 0,75 mm² and must have an insulation resistance rating in excess of 500 V AC.
- The humidity transmitter must be electrically compatible with the dehumidifier's extra low voltage control circuit.
- The humidity transmitter must be designed so that the contacts close on a rising RH set-point to complete the control circuit and start the dehumidifier.
- Voltage drops may be experienced when using excessively long cables.

NOTE! *At operation, the voltage must be 24 V measured at the dedicated terminals, used for connecting the humidity transmitter to the dehumidifier. If the measured voltage is less than 20 V, a separate relay controlled by the humidity transmitter must be used.*

2.8.3 Connection of external sensors

The dehumidifier is supplied with dedicated terminals for connecting external sensors, for wiring and connection details refer to the electrical wiring diagram .

2.9 Steam heater connection

WARNING!

Connection of steam pipes must be carried out in accordance with local regulations by qualified personnel.

For details on installation, commissioning and maintenance of steam heaters refer to the MX/MXT-Series Steam Heater supplement (supplied with the dehumidifier).

2.10 Gas heater connection

WARNING!

Connection of gas pipes must be carried out in accordance with local regulations by qualified personnel.

WARNING!

The burner sight glass and surrounding metalwork can reach temperatures in excess of 65 °C. Physical contact should be minimised to avoid the risk of burning.

For details on installation, commissioning and maintenance of gas heaters refer to the MX/MXT-Series Gas Heater Equipment (supplied with the dehumidifier).

2.11 Pre-start settings

All MX/MXT units are equipped with a number of standard features requiring a few selections and settings before the unit is put in operation for the first time.

Some features require connection of external equipment. For wiring details refer to the Electrical wiring diagram.

Further pre-start settings of configuration features can be required. Each individual unit is specified through the MX Dehumidifier Configuration sheet, which can be found in front of this manual.

For more information about configuration functions and components, refer to appendix *1, - General configurations*.

2.12 Pre-start checks

Before starting the dehumidifier for the first time, carry-out the following checks:

1. Ensure that all transit packaging and blanking plates (if fitted) have been removed.
2. Carry-out a visual check on all ductwork, and duct insulation, for correct connection and for general signs of damage. Check the gas train and steam connections (if applicable) to ensure that all pipes are correctly installed and secured.
3. Check that the incoming power supply cables have been correctly installed and that a fused isolator, fitted with the correct rated fuses, has been fitted within easy reach of the dehumidifier. Check that none of the main circuit breakers and current sensing devices in the electric control panel have been tripped. For details refer to the electrical wiring diagram Supplement.
4. If a humidity transmitter has been installed, check that it has been correctly positioned in the room and has been properly connected to the unit. Refer to section *2.8, External humidity transmitter*.

2.13 Airflow adjustment

CAUTION!

To prevent damage to the fans, the unit must not be run for longer than a few minutes prior to adjusting the process and reactivation airflows.

CAUTION!

Failure to correctly adjust the process and reactivation airflows could cause the unit to malfunction.

To achieve the design performance, the process and reactivation airflow dampers must be correctly adjusted, in accordance with the airflows in the table in chapter *6, Technical specification*. The dehumidifier has 4 test points (TP1-TP4) enabling Munters service engineers to measure differential pressure cross the unit in order to adjust the airflow. Contact Munters for assistance.

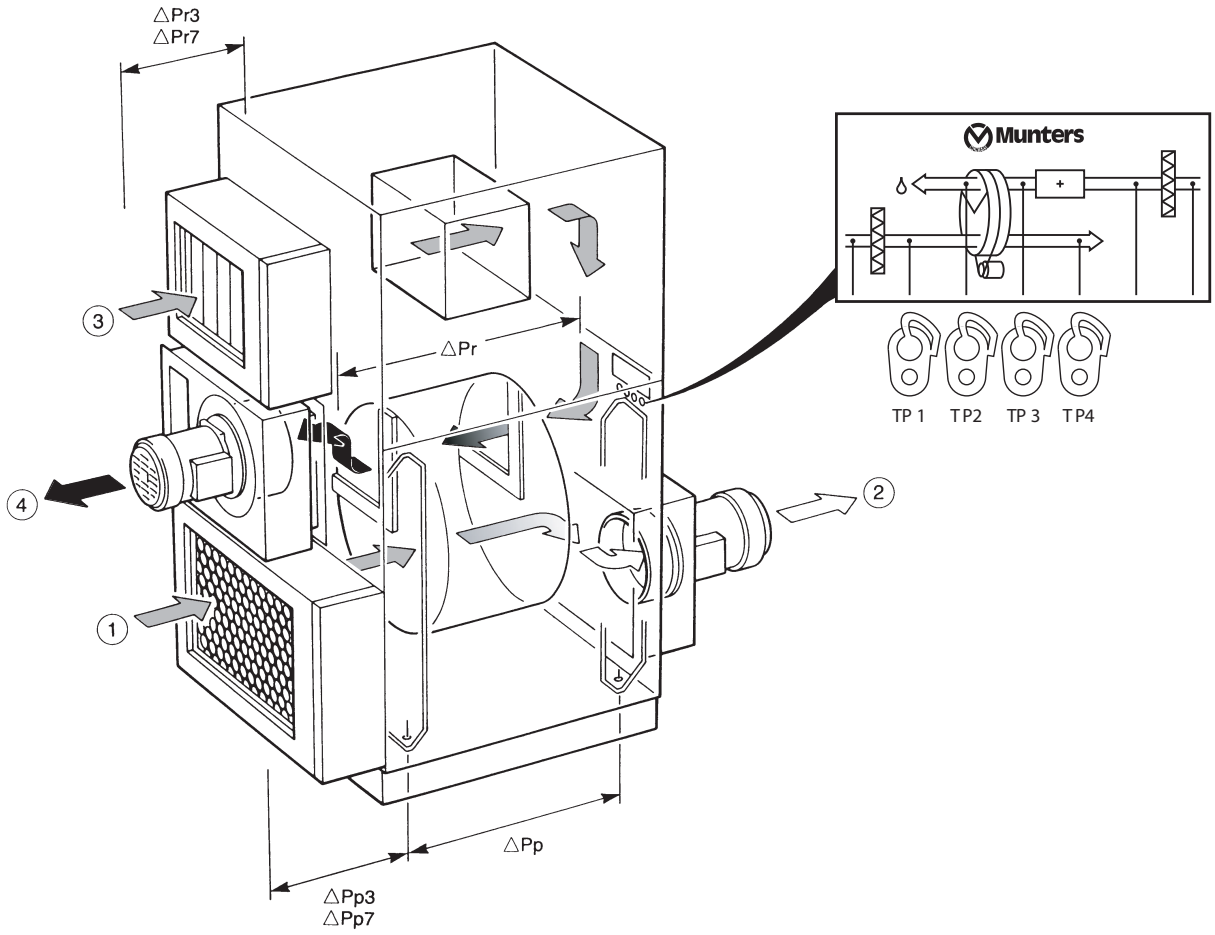


Figure 2.6 Test points

1. Process air
2. Dry air
3. Reactivation air
4. Wet air

3 Operation

NOTE! *For specific details relating to steam heater models, refer to the MX/MXT-Series Steam Heater Supplement (supplied with the dehumidifier).*

NOTE!

Following sections include general information, valid for all MX/MXT units. An individual unit is configured according to the MX Dehumidifier Configuration sheet. Added functions and components affecting the operation are described in appendix 1, - General configurations and appendix 2, Control configurations.

3.1 Control panel functions

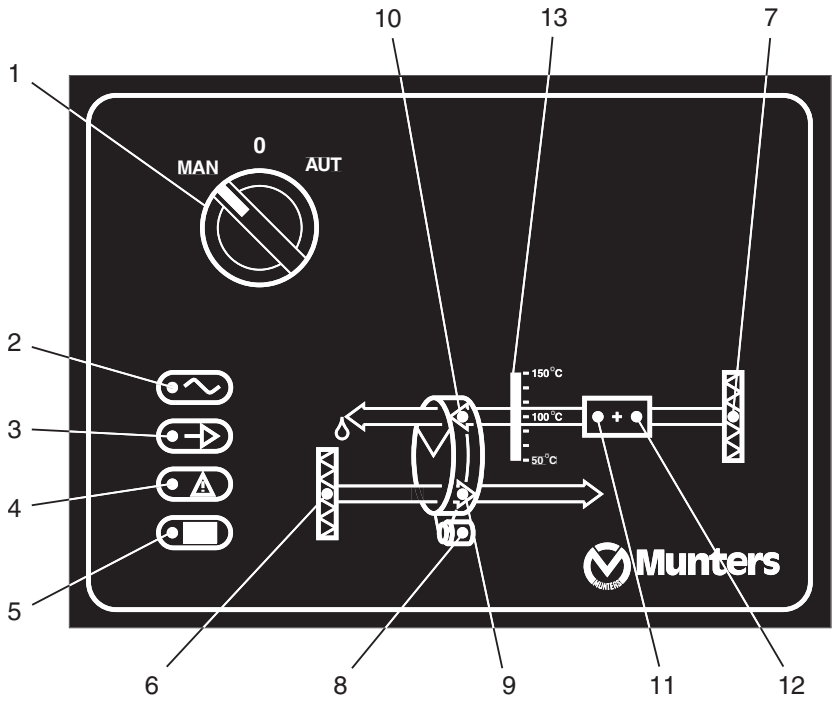


Figure 3.1 Control panel

1. Mode Switch
2. Power Connected Indicator
3. Unit Running Indicator
4. Fault Warning Indicator
5. No function
6. Process Air Filter Blocked Indicator
7. Reactivation Air Filter Blocked Indicator
8. Drive Motor Indicator
9. Process Air Fan Indicator
10. Reactivation Air Fan Indicator
11. Reactivation Heater (Stage 1) Indicator
12. Reactivation Heater (Stage 2) Indicator
13. Reactivation Air Temperature Indicator

3.2 Emergency stop

To make the entire unit immediately voltage-free, use the mains isolator. See *Figure 1.2* .

CAUTION!

The mains isolator must not be used under other circumstances to stop the unit. Since the reactivation fan will also stop, considerable heat can develop in the reactivation heater causing possible damage to components close to the heater.

3.3 Pre-start checks

Before starting the dehumidifier for the first time, carry out checks according to section *2.11, Pre-start settings* .

3.4 Running checks

If the dehumidifier fails any of the following checks, see section *5, Fault tracing* for actions required to identify the probable cause of the fault, and the corrective action required to return the unit to service.

CAUTION!

To prevent damage to the fans, the unit must not be run for longer than a few minutes prior to adjusting the process and reactivation airflows.

3.4.1 Manual mode

1. Operate the mains isolator to the ON position (I). Check that the power connected indicator is on.
2. Set the mode switch to the MAN position and check that the following indicators are on:
   - Power connected indicator
   - Unit running indicator
   - Both reactivation heater indicators (electrical reactivation heater models only)
   - Process and reactivation air fan indicators
   - Drive motor indicator
3. Check that the reactivation and process air fans are rotating in the correct direction. The correct direction can be determined by checking the rotation against the arrows marked on the fan casing.

NOTE! *The fan motors are pre-wired during manufacture for the correct rotation. If the fan rotation for both fans is incorrect this indicates that two of the main power supply phases to the dehumidifier have been incorrectly connected.*

4. Remove the process air filter and check that the rotor is turning counter clockwise. Replace the process air filter after completion of the check.
5. Allow the unit to run for approximately 10 minutes to ensure that the operating conditions have stabilised and check that the reactivation heater is operating (temperature indicator displays reactivation air temperature).
6. Set the mode switch to the "O" position and check that both reactivation heater indicators go out.

NOTE! *In order to dissipate any residual heat, the reactivation air fan, process air fan and the drive motor will continue to run (after the unit has been switched off) until the temperature has fallen below 50 °C.*

7. Check that when the reactivation air temperature falls below 50° C, the unit running, process air fan, reactivation air fan and drive motor indicators go out and that the power connected indicator remains on.

3.4.2 Automatic mode

NOTE! *For the unit to operate in the "Automatic Mode" an optional single or 2-step humidity transmitter or RH98 (option) must be installed and correctly connected to the unit. For details refer to section 2.8.1, Location requirements and appendix 2, Control configurations.*

1. Operate the mains isolator to the ON position (I). Check that the power connected indicator is on.
2. Set the mode switch to the AUT position and adjust the humidity transmitter/RH98 set-point to the minimum relative humidity (RH) value. Check that the following indicators are on:
   - Power connected indicator
   - Unit running indicator
   - Both reactivation heater indicators (electrical reactivation heater models only)
   - Process and reactivation air fan indicators
   - Drive motor indicator
3. Slowly increase the humidity transmitter/RH98 set-point and check that the reactivation heater switches off (reactivation heater indicators are off) when the set-point matches the RH in the room where the humidity transmitter/RH98 sensor is installed.
4. Slowly decrease the humidity transmitter/RH98 set-point and check that the reactivation heater switches on (reactivation heater indicators are on) when the set-point matches the RH in the room where the humidity transmitter/RH98 sensor is installed.
5. Set the mode switch to the "O" position and check that both reactivation heater indicators go out.
6. Check that when the reactivation air temperature falls below 50 °C, the unit is running, process air fan, reactivation air fan and drive motor indicators go out and that the power connected indicator remains on.
7. Adjust the humidity transmitter/RH98 set-point to the desired RH.

3.5 Fault mode

When a fault is detected, the dehumidifier will automatically shutdown. The fault warning indicator on the control panel will flash and one or more of the indicators on the control panel will also flash to identify the cause of the fault. For further details refer to chapter *5, Fault tracing.* Once the fault has been rectified, operation of the mains isolator to the OFF position (0) and then to the ON position (I) will clear the fault warning. For details of switch functions and fault displays refer to *Figure 3.1* .

Indicator	Function
Mode Switch	With the switch in the "MAN" position, the dehumidi er will operate in the manual mode. In this mode the unit will run continuously. With the switch in the "AUT" position, the dehumidi er will operate in the automatic mode. In this mode a single or 2-step humidity transmitter (1) (or RH98 (1)) must be connected to the unit. The humidity transmitter/RH98 will then control the dehumidi er start and stop. A series of links on the main terminal block determine whether the process fan switches on and off with the reactivation heater, or runs continuously - to maintain air circulation. For details refer to section *1, - General configurations*.
Power Connected Indicator	Indicates when power has been connected, and the mains isolator is in the ON position (I).
Unit Running Indicator	Indicates when power has been connected, and the mains isolator is in the on position (I).
Fault Warning Indicator	When the Fault Warning indicator is ashing, it indicates that the unit has shut-down due to one of the following faults being detected: - Process air fan fault - Reactivation air fan fault - Drive motor fault - Reactivation Heater (stage 1) fault (Electrical reactivation heater models only) - Reactivation Heater (stage 2) fault (Electrical reactivation heater models only) - Rotor stopped fault (1) - Blocked lters (1) To assist with fault diagnosis, the corresponding indicator will be ashing. In addition the remote fault output relay will be activated. For further details refer to section *5, Fault tracing*.
Process Air Filter Blocked Indicator (1)	When the process air lter indicator is lit it indicates that the lter is blocked. A blocked lter does not shut-down the unit. The remote fault output is activated when a blocked lter is detected.
Reactivation Air Filter Blocked Indicator	When the reactivation air lter indicator is lit it indicates that the lter is blocked. A blocked lter does not shut-down the unit. The remote fault output is activated when a blocked lter is detected.
Drive Motor Indicator	The drive motor indicator is on when the rotor drive motor is operating. The indicator will ash to indicate either a drive motor fault (or a stopped rotor [1]).
Process Air Fan Indicator	The process air fan indicator is on when the fan is running. The indicator will ash to indicate a fan fault.
Reactivation Air Fan Indicator	The reactivation air fan indicator is on when the fan is running. The indicator will ash to indicate a fan fault.
Reactivation Heater (Stage 1) Indicator	The Indicator is on when the relevant heater stage is switched on. The Indicator will ash to indicate a heater (stage 1) fault
Reactivation Heater (Stage 2) Indicator	The Indicator is on when the relevant heater stage is switched on. The Indicator will ash to indicate a heater (stage 2) fault.
(1) Optional component	

Table 3.1 Control panel functions

4 Maintenance

4.1 General

The MX/MXT-series dehumidifiers are designed to run for long periods with minimum attention and will normally require little maintenance in service.

The frequency of maintenance will be determined by the operating conditions and the quality of the environment where the unit is installed. If the process air has a high dust-loading, the scheduled maintenance should be carried-out at more frequent intervals.

4.2 Safety

WARNING!

- The dehumidifier may restart automatically after a power cut. Always switch off and lock the main power switch before carrying out any service work.

- Adjustments, maintenance and repairs should only be carried out by qualified personnel who are aware of the hazards of maintaining equipment containing high voltages and temperatures.

- Danger of explosion if lithium battery is incorrectly replaced. Replace only with the same or equivalent type recommended by Munters. Dispose of used batteries according to the manufacturer's instructions.

- Rotating hazard - to prevent access to the fan impellers the dehumidifier must only be run with the wet and dry air ducts connected.

4.3 Component locations

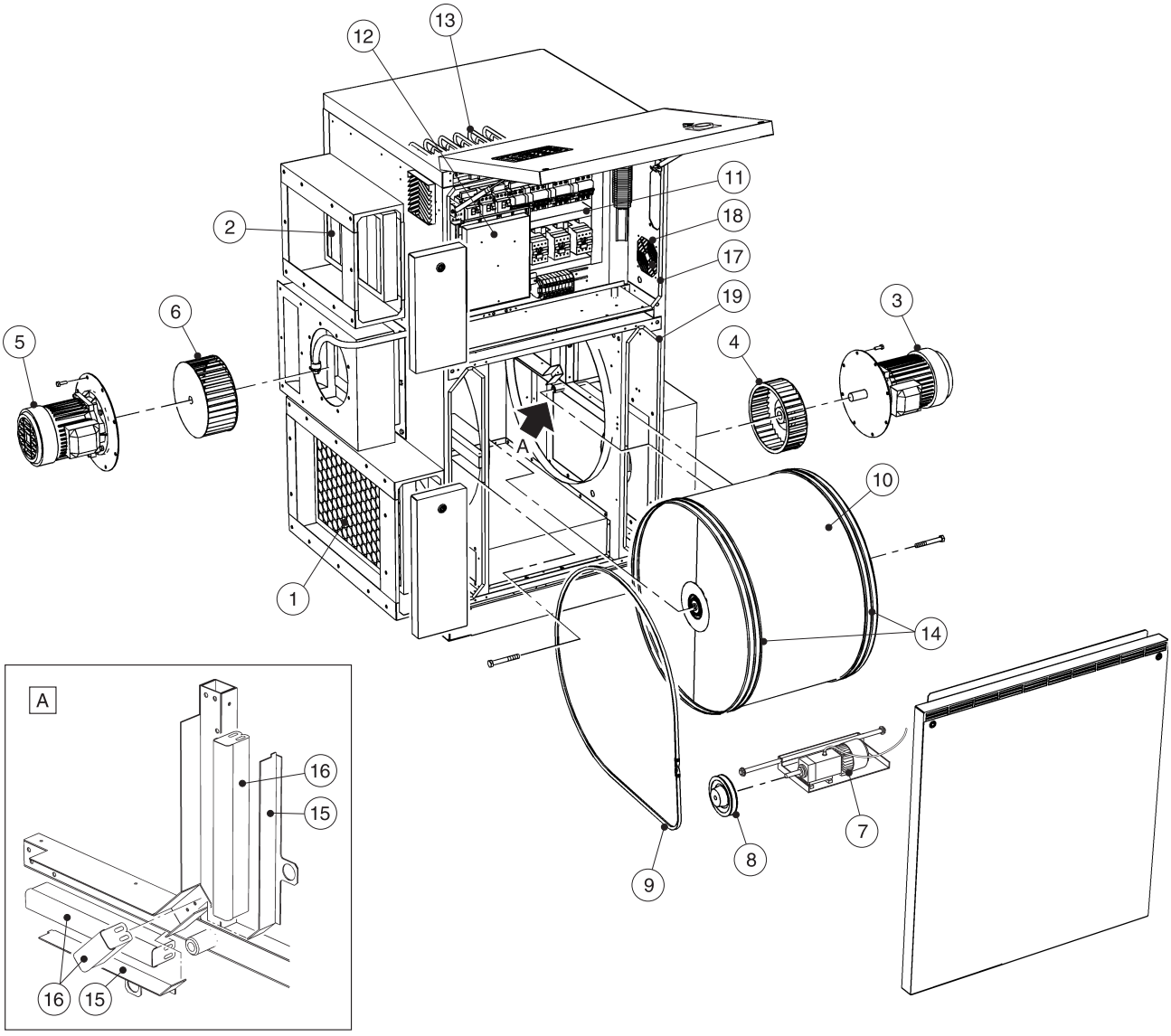


Figure 4.1 Component locations

1. Process Air Filter
2. Reactivation Air Filter
3. Process Air Fan
4. Process Air Fan Impeller
5. Reactivation Air Fan Motor
6. Reactivation Air Fan Impeller
7. Rotor Drive Motor
8. Rotor Drive Pulley
9. Rotor Drive Belt
10. Desiccant Rotor
11. Electric Control Panel
12. Control panel
13. Reactivation heater
14. Peripheral Seal
15. Radial Seal Retainer
16. Radial Seal
17. Electric Control Panel Seal
18. Cooling Fan Filter
19. Front Panel Seal

4.4 Service options

In addition to unit commissioning, there are four standard service options (A-D) to choose between. The service options comprise service efforts listed below.

S. Commissioning/start-up

A. Check and (if necessary) change of filter - general operational check.

B. Check and (if necessary) change of filter - general operational check and capacity, safety and temperature check.

C. Check and (if necessary) change of filter - general operational check and capacity, safety and temperature check. There is also component replacement.

D. Check and (if necessary) change of filter - general operational check and capacity, safety and temperature check. There is also component replacement after 3 years and 6 years of operation.

The Service Department at Munters can propose a service plan adapted to suit the special conditions of a specific installation, based on how the unit works and the type of environment.

Periodic maintenance will ensure that the steam control components provide trouble-free operation. The frequency of maintenance will be determined by the operating conditions and the quality of the steam supply where the unit is installed.

Service content	Service level	S	A	B	A	C	A	B	A	B	A	B	A	D
	Operating time in hours	0	4000	8000	12000	16000	20000	24000	28000	32000	36000	40000	44000	48000
	Calender time in months	0	6	12	18	24	30	36	42	48	54	60	66	72
Inspection, replace lter if necessary, function controls		X	X	X	X	X	X	X	X	X	X	X	X	X
Capacity check, rotor inspection		X		X		X		X		X		X		X
Preventive inspection incl. safety check		X		X		X		X		X		X		X
Replacement of over temperature protection								X						X
Inspect drive belt and backing rollers, replace if necessary						X								X
Drive motor replacement								X						X
Fan revision (impellers, motors, bearings)								X		X				X
Examine electrical and control systems, function check		X		X		X		X		X				X
Calibration of humidity control equipment and the sensors		X		X		X		X						X
Inspecting rotor housing, replacing rotor gaskets if necessary														X

Table 4.1 Service and maintenance schedule

4.4.1 Checking and adjusting motorised bypass dampers

NOTE! *Motorised bypass dampers are not included in all units. Refer to the MX Dehumidifier Configuration sheet in front of this manual.*

Although the rotation limits of the two damper motors are set during commissioning, it is essential that the settings are checked as part of the maintenance procedure.

Checking the process air side damper motor

1. Check that the L/R switch (1) is in the L position.
2. Push the black button (2) on the damper motor and rotate the actuator (3) clockwise to the end stop (4). Release the black button.
3. Check that the damper is fully closed (full bypass). If it is not in this position, carry-out the actuator adjustment procedure.

Checking the dry air side damper motor

1. Check that the L/R switch (1) is in the R position.
2. Push the black button (2) on the damper motor in and rotate the actuator (3) anti-clockwise to the end stop (4). Release the black button.
3. Check that the damper is fully closed (no bypass). If it is not in this position, carry-out the actuator adjustment procedure.

Actuator adjustment procedure

1. Release the two nuts (5) securing the actuator (3) to the damper.
2. Rotate the damper until it is in the correct position.
3. Using a torque wrench, tighten the two nuts to 7 Nm.

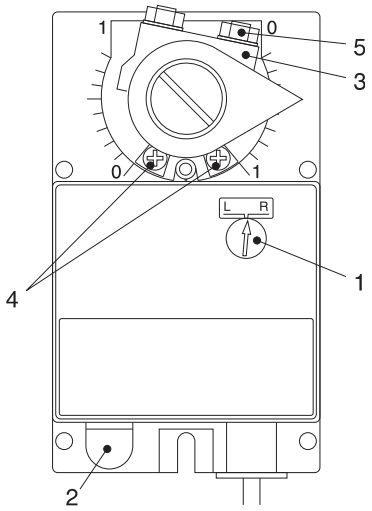


Figure 4.2 Damper motor

4.5 Changing filter

1. Open the filter box end panel by turning the black screw counter clockwise a quarter turn, see *Figure 4.3* .
2. Lift off the end panel.
3. Press the bottom and top guide to release the filter, see *Figure 4.4* .
4. Pull out the filter, see *Figure 4.5* .
5. Clean the guides and filter housing if necessary.
6. Push in the new filter. Make sure that the arrow on the filter points in the same direction as the air stream.
7. Slide the bottom and top guide towards the end panel opening, until the guides clicks into locked position.
8. Remount the end panel and tighten the black screw.

Figure 4.3

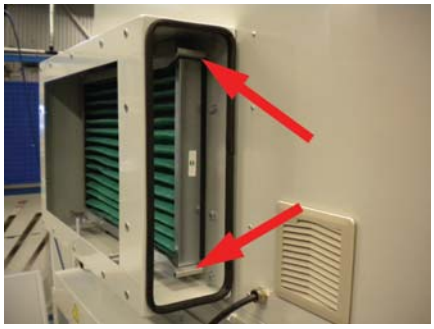


Figure 4.4

Figure 4.5

NOTE! *When changing bag filters be careful not to damage the filter towards sharp edges.*

5 Fault tracing

5.1 General

The purpose of this section is to assist the user in recognising and rectifying faults in the unit and ancillary components. To assist with fault isolation, control panel layout diagrams and wiring diagrams have been provided in the electrical wiring diagram supplement. For specific information relating to gas and steam heater models, refer to the MX/MXT-Series Gas and Steam Heater Supplements (supplied with the dehumidifier).

5.2 Fault tracing checklist

The primary source of fault isolation when the unit has automatically shut down, is the fault warning indicator and associated flashing indicators on the control panel. When a fault occurs the fault tracing checklist given in *Table 5.1* should be carried out before calling Munters. This will assist in identifying faults that can be easily rectified by the user.

WARNING!

Rotating hazard - to prevent access to the fan impellers the dehumidifier must only be run with the wet and dry air ducts connected.

WARNING!

Danger of explosion if lithium battery is incorrectly replaced. Replace only with the same or equivalent type recommended by Munters. Dispose of used batteries according to the manufacturer's instructions.

Fault Symptom	Possible cause	Corrective action
General		
Unit stopped. All indicators are off.	Mains isolator inadvertently /switched off.	Set the mains isolator to the ON position (I) and check that the power connected indicator is on.
	Power supply failure.	Check the supply from the wall mounted isolator.
	Resettable fuses tripped due to a wiring fault.	Reset the fuses. If the fault re-occurs call a service technician.
	Mains transformer failure.	Call Munters.
	Printed Circuit Board failure.	Replace the fuse on the PCB. If the fault re-occurs call Munters.
Unit stopped (fault warning indicator not ashing).	Unit inadvertently switched into Automatic mode without a humidity transmitter being connected.	Switch the dehumidi er into Manual mode and check that the unit starts. If the unit starts, the fault will probably be with the humidity transmitter or associated wiring.
	Humidity transmitter fault (Automatic mode).	Check the operation of the humidity transmitter and calibrate as required.
HTCO, Heater over temperature thermostat keep tripping (electrical heater models).	Air ow obstructed.	Check the air inlet, air outlet ducts and lters are free from obstructions and are not clogged with dirt.
	Reactivation air ow set too low.	Adjust the reactivation air ow. For details refer to section *2.13, Airflow adjustment* .
Automatic shutdown		
Unit has stopped, the fault warning indicator is ashing and one (or more) of the following indicators are ashing:		
- Reactivation Heater Indicators.	Electrical Heater Models: If both indicators are ashing it indicates that one (or both) of the over temperature thermostats have tripped due to an obstruction in the reactivation air ow, or the air ow has been set too low.	Allow the unit to cool down. Open the control panel and reset the fuses as required. Check the air inlet, outlet ducts and lters are free from obstructions and are not clogged with dirt. Check and adjust the reactivation air ow. For details refer to section *2.13, Airflow adjustment*. Operate the mains isolator to reset the fault warning. If the fault re-occurs call Munters.
- Reactivation Heater Stage 1 or Stage 2 Indicators.	Safety device has tripped due to a component or wiring fault.	Open the control panel and reset as required. Operate the mains isolator to reset the fault warning. If the fault re-occurs call Munters.
- Reactivation Air Fan Indicator.	Safety device has tripped due to one of the following:	Open the control panel and reset as required.
	- Incorrect air ow adjustment	Check the reactivation air ow and adjust as required. For details refer to section *2.13, Airflow adjustment*.
	- Circuit breaker setting too low - Fan motor fault - Wiring fault	Check the reactivation air ow and adjust as required. For details refer to section *2.13, Airflow adjustment*. Check and adjust Circuit breaker setting. For details refer to the electrical wiring diagram . Operate the mains isolator to reset the fault warning. If the fault re-occurs call Munters
- Process Air Fan Indicator.	Safety device has tripped due to one of the following: - Incorrect air ow adjustment - Circuit breaker setting too low - Fan motor fault - Wiring fault	Open the control panel and reset as required. Check the process air ow and adjust as required. For details refer to section *2.13, Airflow adjustment* . Check and adjust Circuit breaker setting. For details refer to the electrical wiring diagram . Operate the mains isolator to reset the fault warning. If the fault re-occurs call a service technician.
- Drive Motor Indicator.	Safety device has tripped due to one of the following: - Drive motor fault - Circuit breaker setting too low - Rotor stopped warning (option) - Wiring fault	Open the control panel and reset as required. Check and adjust Circuit breaker setting. For details refer to the electrical wiring diagram . Investigate the cause of the rotor stopped warning (broken drive belt etc.) and rectify the fault. Operate the mains isolator to reset the fault warning. If the fault re-occurs call Munters.

Fault Symptom	Possible cause	Corrective action
Performance fault		
Unit is operating but does not appear to be controlling humidity.	Humidity setting on humidity transmitter incorrect, or humidity transmitter unserviceable.	Check the set-point on the humidity transmitter. Check the operation and calibration of the humidity transmitter. Check the wiring between the humidity transmitter and the unit.
	Reactivation temperature too low (heater not operating correctly).	Check the operation of the heater.
	Rotor drive failure.	Check that the rotor is turning at approx. 8 revolutions per hour. Check the drive belt tension.
	Process and reactivation air ows are not in accordance with the design speci cation.	Check the air ows and adjust as required. For details refer to section *2.13, Airflow adjustment*.

Table 5.1 Fault tracing checklist

6 Technical specification

6.1 Main data

Model	MX2700	MX3700	MX5000	MXT5000	MX6200	MXT7500	MX7600	MXT9000
Proces air (1)								
Rated air ow (m^3/s)	0,75	1,03	1,39	1,39	1,72	2,08	2,11	2,5
Rated air ow (m^3/h)	2700	3700	5000	5000	6200	7500	7600	9000
Minimum available static pressure (Pa)	300	300	300	300	300	300	300	150
Fan motor power (kW) at 220-240/380-420 V, 50Hz (2)	3	3	4	4	4	7,5	7,5	7,5
Reactivation air (1)								
Rated air ow (m^3/s)	0,25	0,34	0,46	0,34	0,57	0,46	0,7	0,57
Rated air ow (m^3/h)	900	1220	1660	1220	2050	1660	2520	2050
Minimum available static pressure (Pa)	300	300	300	300	300	300	300	300
Fan motor power (kW) at 220-240/380-420 V, 50Hz (2)	1,5	1,5	2,2	1,5	2,2	2,2	3	2,2
Drive motor								
Drive motor power (W)	10	10	10	10	10	10	10	10
Max. electrical power								
Electrical reactivation heater models (kW)	35,3	42,5	59,5	43,5	73,9	63	93,6	77,4
Gas and steam reactivation heater models (kW)	4,7	4,7	6,4	5,7	6,4	10	10,7	9,9
Electrical reactivation heater								
Temperature increase (°C)	102	92	96	92	98	96	98	98
Reactivation Heater Power (kW)	30,6	37,8	53,1	37,8	67,5	53	82,9	67,5
Steam reactivation heater								
Steam Consumption(3) (g/s)	14,5	17,9	25,2	17,9	32	25	39,3	32
Max. Steam Working Pressure (bar (g))	6,2	6,2	6,2	6,2	6,2	6,2	6,2	6,2
Gas reactivation heater								
Temperature increase (°C)	102	92	96	92	98	96	98	98
Gas consumption (4) (m^3/h)	3,12	3,84	5,4	3,84	6,86	5	8,42	6,86
Natural Gas- Gas Inlet Pressure (mbar)	20-30	20-30	20-30	20-30	20-30	20-30	20-30	20-30
Max.Sulphur Content (ppm) HPS Rotor	30	30	30	30	30	30	30	30
Max.Sulphur Content (ppm) Li Rotor	4	4	4	4	4	4	4	4
Standard Gas Pipe Fitting (BSP)	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"

Miscellaneous data								
Noise level (dB) Process and reactivation inlets open	77	87	90	87	95	90	97	95
Supply voltage for external circuits (gas/steam valves etc.)	24 V AC							
Max power for external circuits (gas/steam valves etc.)	30VA							
Error sense voltage and external control signal	24V DC							
Auxiliary contact (volt-free) output contacts	6A, 250 V AC (max)							
Contactor coil voltage	24 V							

Table 6.1 Main MX/MXT-series data

(1) Figures quoted are nominal, based on fan air inlet temperature of 20 °C, and an air density of 1,2 kg/m³

(2) For other voltages or frequencies refer to ID-plates on the motors.

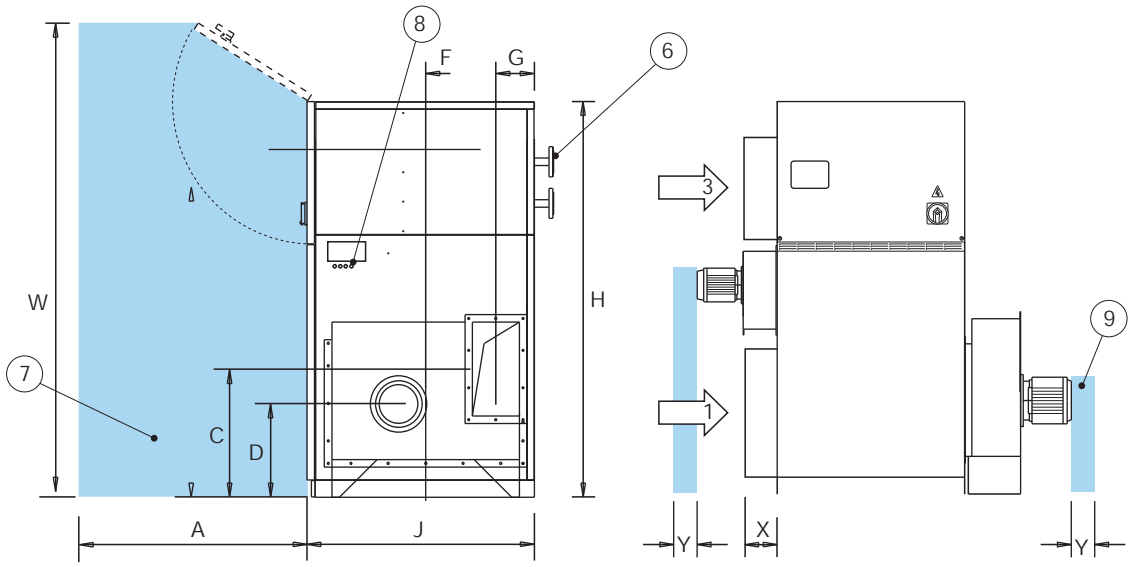
(3) Steam consumption calculated at 2 106,6 kJ/kg at 500 kPa (g).

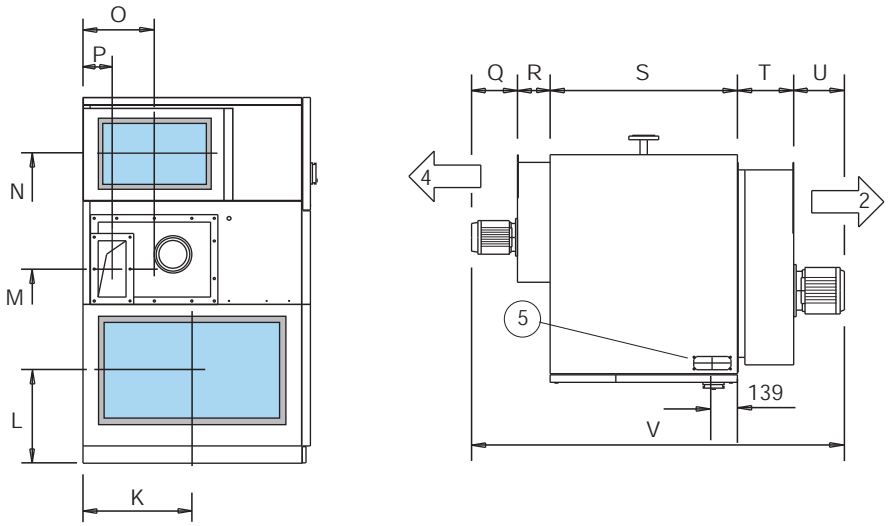
(4) Gas consumption calculated at 30,88 MJ/m³.

6.2 Dimensions and space requirements

NOTE! *Dampers for adjusting process and reactivation airflows must be fitted on all outlet ducts. The damper installed in the wet air duct should be made from corrosion resistant material.*

6.2.1 MX2700



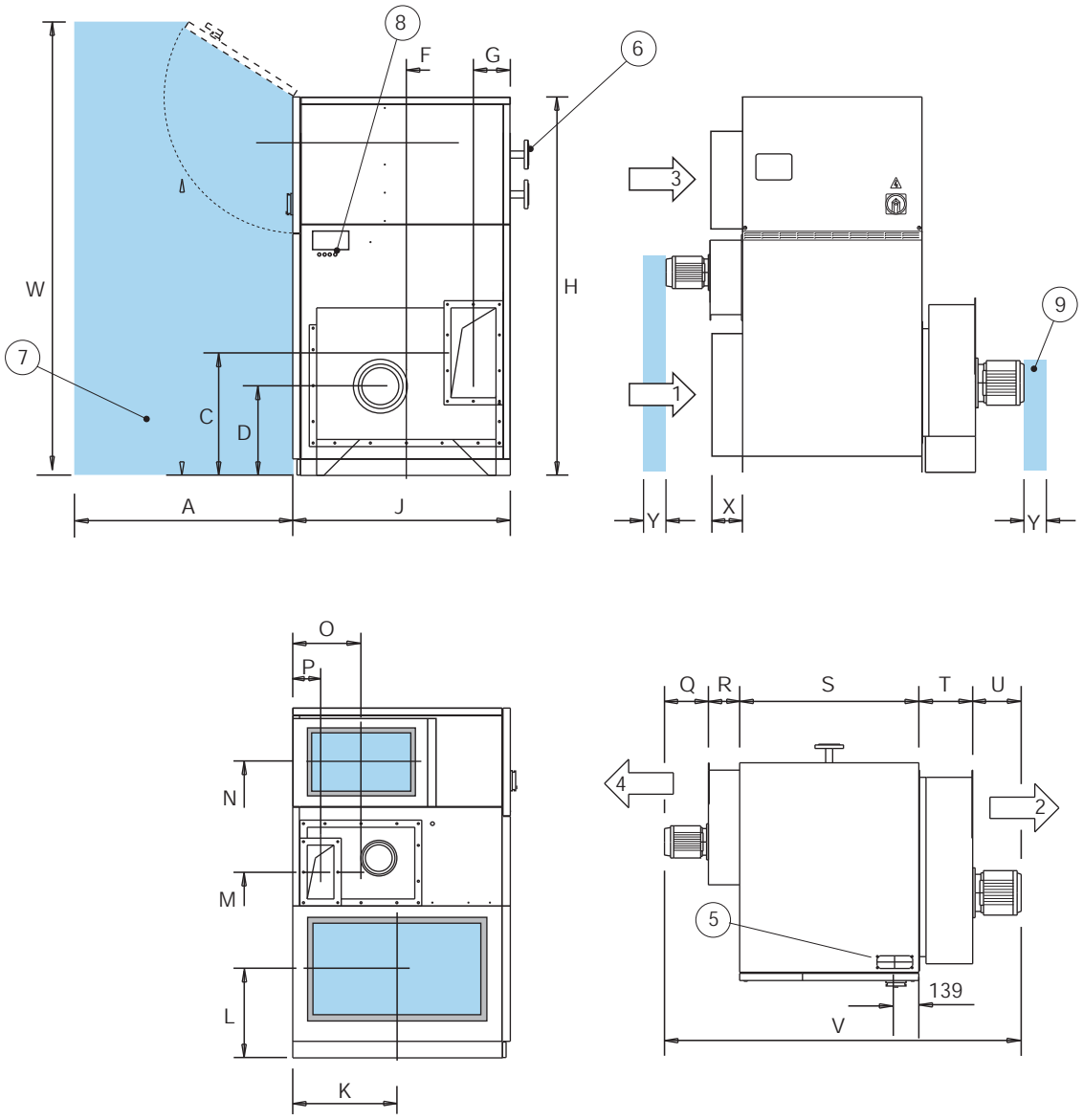


1 . Process Air
2. Dry Air
3. Reactivation Air
4. Wet Air
5. Electrical Connection
6. Steam Connections (Option)
7. Service access
8. Test points
9. Fan Clearance

Model	Weight (kg)	Dimensions (mm)																				
		A	C	D	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X(1)	Y
MX2700	380	800	402	352	382	182	1585	800	382	352	787	1207	282	87	282	172	800	180	334(2)	1768[2]	1930	175	100
(1)For F7 (EU7) Iter option X=800 mm..																							
(2) Dimension can be reduced with 20 mm for 50 Hz fan motors																							

Table 6.2 MX2700 dimensions

6.2.2 MX3700-7600/MXT5000-9000



1. Process air
2. Dry air
3. Reactivation air
4. Wet air
5. Electrical connection
6. Steam connections (option)
7. Service access
8. Test points
9. Fan Clearance

Model	Weight (kg)	Dimensions (mm)										
		A	C	D	F	G	H	J	K	L	M	N
MX3700	687	1213	695	512	582	205	2172	1213	582	512	1047	1666
MX5000	724	1213	695	512	582	205	2172	1213	582	512	1047	1666
MX6200	764	1213	695	512	582	205	2172	1213	582	512	1047	1666
MX7600	810	1213	795	512	582	230	2172	1213	582	512	1047	1666
MXT-series												
MXT5000	724	1213	695	512	582	205	2172	1213	582	512	1047	1666
MXT7500	764	1213	795	512	582	230	2172	1213	582	512	1047	1666
MXT9000	810	1213	795	512	582	230	2172	1213	582	512	1047	1666
(1) For F7 (EU7) Iter option X=1000mm												

Table 6.3 MX3700-7600/MXT5000-9000 dimensions

Model	Weight (kg)	Dimensions (mm)										
		O	P	Q	R	S	T	U	V	W	X(1)	Y
MX3700	687	382	182	282	180	1000	300	314	2076	2574	175	100
MX5000	724	382	157	282	154	1000	300	334	2070	2574	175	100
MX6200	764	382	157	282	154	1000	300	334	2070	2574	175	100
MX7600	810	382	157	314	200	1000	375	374	2263	2574	175	100
MXT-series												
MXT5000	724	382	182	282	180	1000	300	334	2096	2574	175	100
MXT7500	764	382	157	282	154	1000	375	374	2185	2574	175	100
MXT9000	810	382	157	282	154	1000	375	374	2185	2574	175	100
(1) For F7 (EU7) Iter option X=1000mm												

Table 6.4 MX3700-7600/MXT5000-9000 dimensions

6.3 Capacity Diagrams

Approximate capacity in kg/h. For detailed information, please contact your nearest Munters office or refer to Munters DryCap program.

NOTE! *The below figures are based on a nominal (1/1) airflow.*

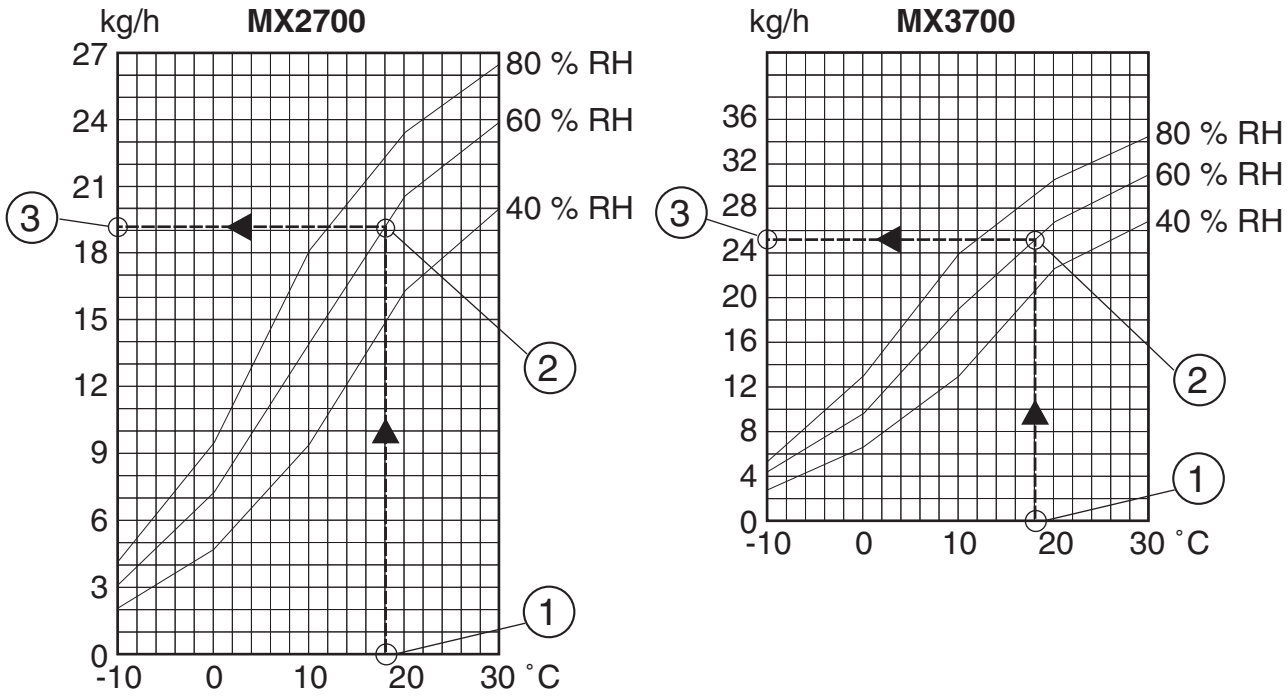


Table 6.5 Capacity diagrams MX2700 and MX3700

1. Process air temperature (°C)
2. Process air relative humidity (% RH)
3. Dehumidification capacity (kg/h) (moisture removed in kg/h)

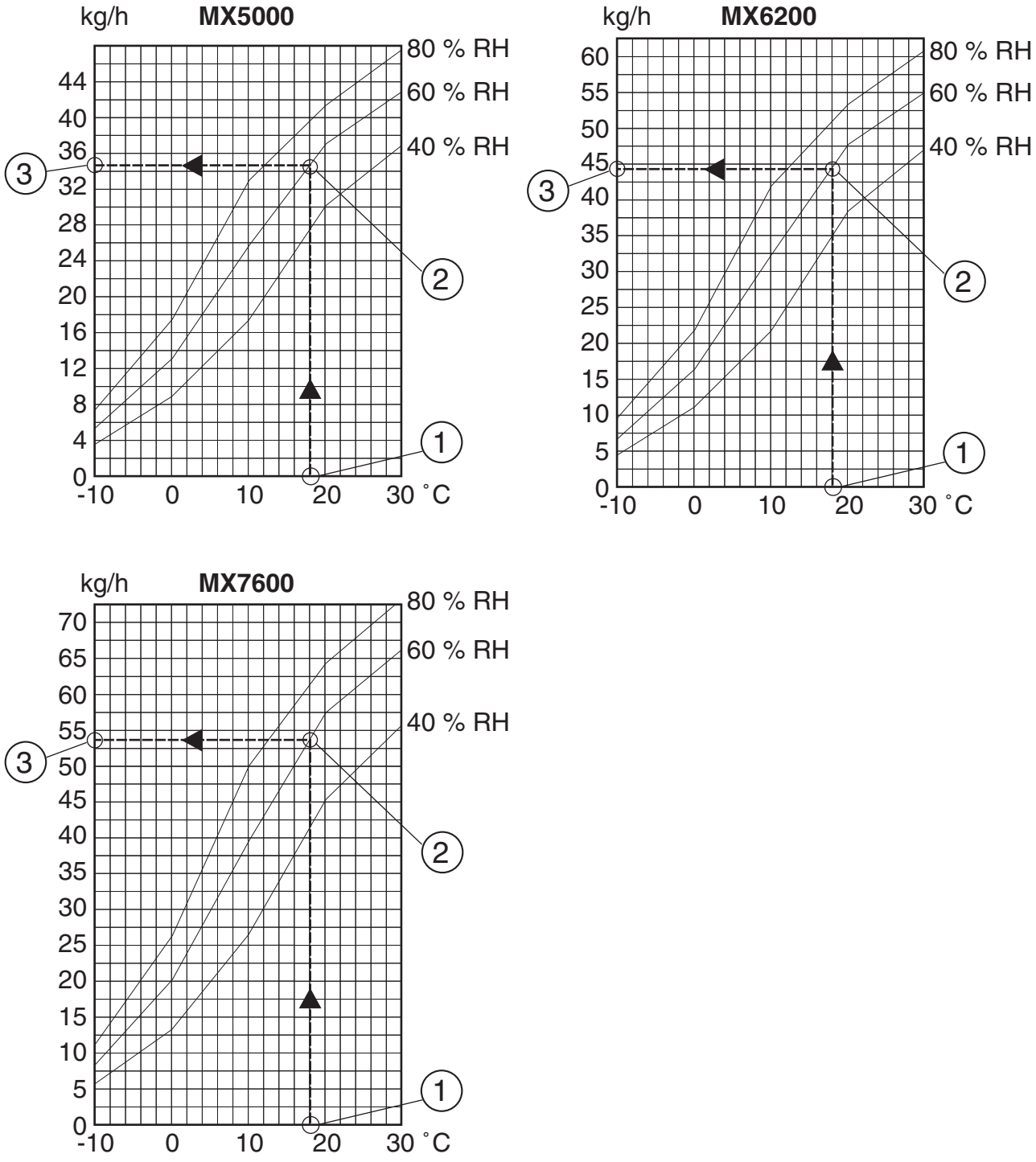


Table 6.6 Capacity diagrams MX5000, MX6200 and MX 7600

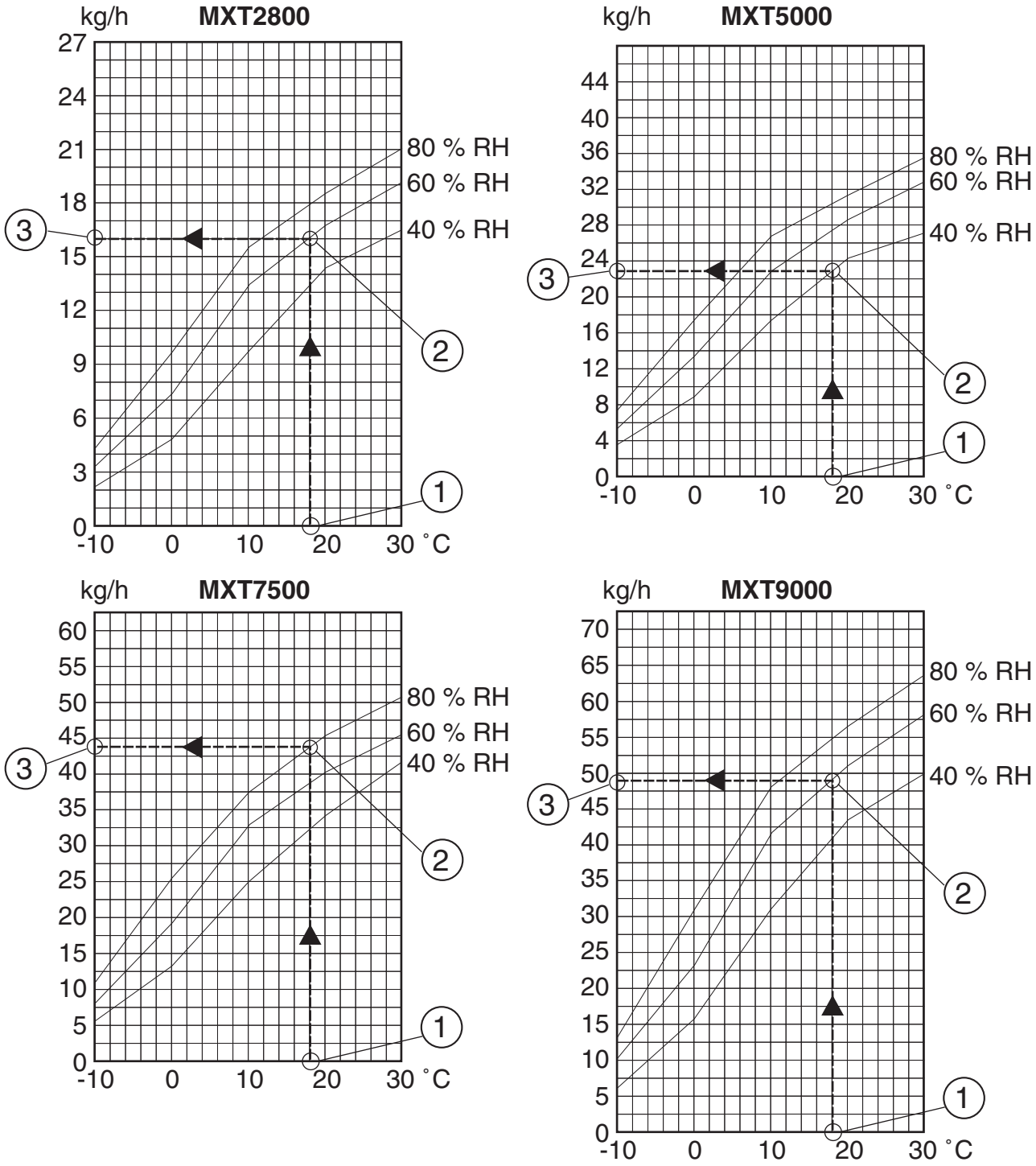
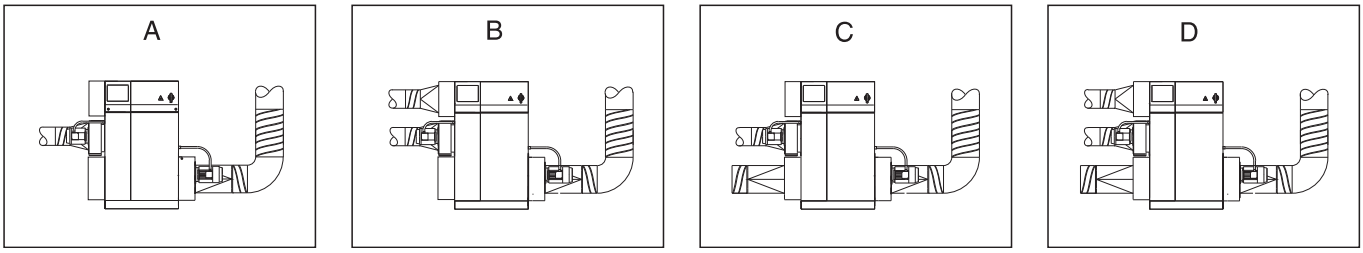


Table 6.7 Capacity diagrams MXT2800, MXT5000, MXT7500 and MXT9000

6.4 Sound data

Noise path	Model	L_{wt} dB	CORRECTION OF Kok dB AT ISO-BAND No./CENTRE FREQUENCY (Hz)							
			1/63	2/125	3/250	4/500	5/1000	6/2000	7/4000	8/8000
A	MX2700	77,6	-2,5	-6,6	-7,3	-10,2	-11,8	-12,5	-16,0	-21,1
	MX3700	88,2	-4,3	-7,0	-7,0	-6,7	-14,0	-15,0	-22,6	-31,5
	MX5000	90,4	-4,4	-7,2	-7,2	-6,9	-14,3	-16,3	-23,2	-32,3
	MX6200	95,8	-4,6	-7,6	-7,6	-7,3	-15,2	-17,3	-24,6	-34,2
	MX7600	98,2	-4,7	-7,8	-7,8	-7,5	-15,6	-17,7	-25,2	-35,1
B	MX2700	77,6	-4,1	-7,3	-7,6	-10,4	-12	-12,4	-16,2	-21,2
	MX3700	87,4	-5,0	-6,7	-7,2	-6,9	-13,9	-15,8	-22,6	-31,3
	MX5000	90,3	-5,2	-6,9	-7,5	-7,1	-14,4	-16,4	-23,3	-32,3
	MX6200	95,6	-5,5	-7,3	-7,9	-7,5	-15,2	-17,3	-24,7	-34,2
	MX7600	97,4	-5,6	-7,4	-8	-7,6	-15,5	-17,7	-25,1	-34,8
C	MX2700	76,9	-3,1	-6,3	-7,3	-9,8	-12,1	-12,9	-15,7	-20,6
	MX3700	87,1	-5,0	-6,1	-6,8	-6,5	-13,9	-15,4	-22,1	-31,1
	MX5000	89,9	-5,1	-6,3	-7,0	-6,7	-14,3	-15,9	-22,8	-32,1
	MX6200	94,5	-5,4	-6,6	-7,3	-7,1	-15,1	-16,7	-24,0	-33,7
	MX7600	96,4	-5,5	-6,7	-7,5	-7,2	-15,4	-17,0	-24,5	-34,4
D	MX2700	76,0	-6,0	-5,1	-7,2	-9,1	-11,3	-11,8	-14,8	-19,9
	MX3700	86,3	-4,4	-5,9	-6,7	-5,9	-13,7	-15,2	-21,9	-30,7
	MX5000	89,8	-4,5	-6,2	-7,0	-6,1	-14,2	-15,8	-22,8	-32,0
	MX6200	94,1	-4,8	-6,5	-7,3	-6,4	-14,9	-16,5	-23,9	-33,5
	MX7600	95,2	-4,8	-6,6	-7,4	-6,5	-15,1	-16,7	-24,2	-33,9

Table 6.8 Sound data



NOISE PATHS TO SURROUNDINGS

A = Process and Reactivation Inlets Open

B = Process Inlet Open

C = Reactivation Inlet Open

D = Fully Ducted

SYMBOLS

L_{wt} = Total noise level dB (rel. 10^{-12}W)

L_w = Noise Power Level in Octave Band dB (rel. 10^{-12}W)

K_{ok} = Correction for Calculation L_w($L_w = L_{wt} + K_{ok}$)

Appendix 1 - General configurations

1.1 General

The MX/MXT-Series dehumidifiers have been designed to ensure that options can be incorporated with the minimum external physical alteration.

For wiring details refer to the Electrical wiring diagram .

NOTE! *Voltage drops may be experienced when using excessively long cables. At operation the voltage must be 24 V measured at the connection point (dehumidifier) for all external humidity transmitter and remote switch connections. If the measured voltage is less than 20 V, a separate relay controlled by the humidity transmitter must be used.*

1.2 Configuration features

This appendix includes information about all configuration functions and components that can be added when ordering a MX/MXT dehumidifier. At delivery, an individual unit is configured according to the MX Dehumidifier Configuration sheet positioned in front of the User's Manual, and can be used to find relevant information/sections below.

1.2.1 Rotor stop alarm

A magnet mounted on the rotor momentarily closes a reed switch contact once per revolution of the rotor i.e. approximately once every eight minutes.

The DDC monitors the rotor sensor I/P and if it does not detect a +24 VDC pulse <10 minutes during normal operation the unit is automatically shut-down.

1.2.2 Blocked Iter alarms

Differential pressure switches are fitted to the process and reactivation air filters. When the pressure difference across a filter exceeds the set limit, the switch contacts close to indicate a blocked filter.

1.2.3 Insulated process air inlet

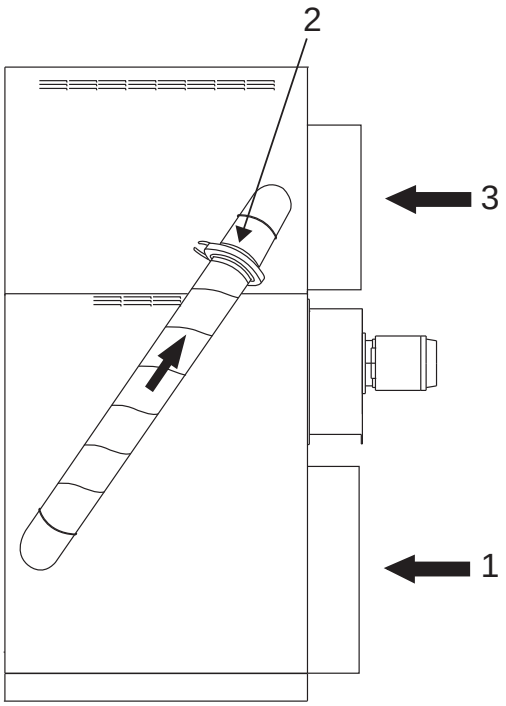
All dehumidifier units supplied with pre-cooled process air have insulated process air inlet. The process air sector in front of the rotor has an internal lining of isolation to prevent condensation on the unit.

The isolation material is an elastomeric foam based on synthetic rubber.

1.2.4 Low dewpoint (purge)

Purge airflow increases the dehumidification capacity and is used to enable extra low dewpoints. A minor part (approximately 10%) of the process airflow is forced through a smaller sector of the rotor which according to the rotor rotation direction is positioned directly after the reactivation sector. The result is that a part of the process air is taken off (purge air) and the rotor material is cooled down before it is exposed to the dry air outlet sector.

The warm purge airflow is drawn from this smaller sector of the rotor, passing an adjustable damper, and entering the reactivation air just before the reactivation heater. The purge airflow duct including the damper unit is installed on the back of the unit according to *Figure 1.1* .



1. Process air
2. Adjustable damper
3. Reactivation air

Figure 1.1 Purge airflow duct and damper installation

CAUTION!

Never start or run the unit with fully closed purge damper. It is recommended to have the damper fully opened when the process fan is started for the first time.

The required purge airflow can be calculated using a diagram. This involves measuring the pressure drop over the purge damper by connecting a U-gauge to the pressure test points. Refer to *Figure 1.2* and *Figure 1.3* .

The purge airflow setting is application dependent and should be adjusted by a qualified engineer during the commissioning to obtain the desired dry air dew point. A general recommendation is that the purge airflow represents 10% of the total process airflow.

NOTE! *Dehumidifiers equipped with purge sector do not include a standard "pulling" process fan. A "pushing" fan, installed in a separate box enclosure, must be added in front of the standard MX unit (for example a MX Plus unit).*

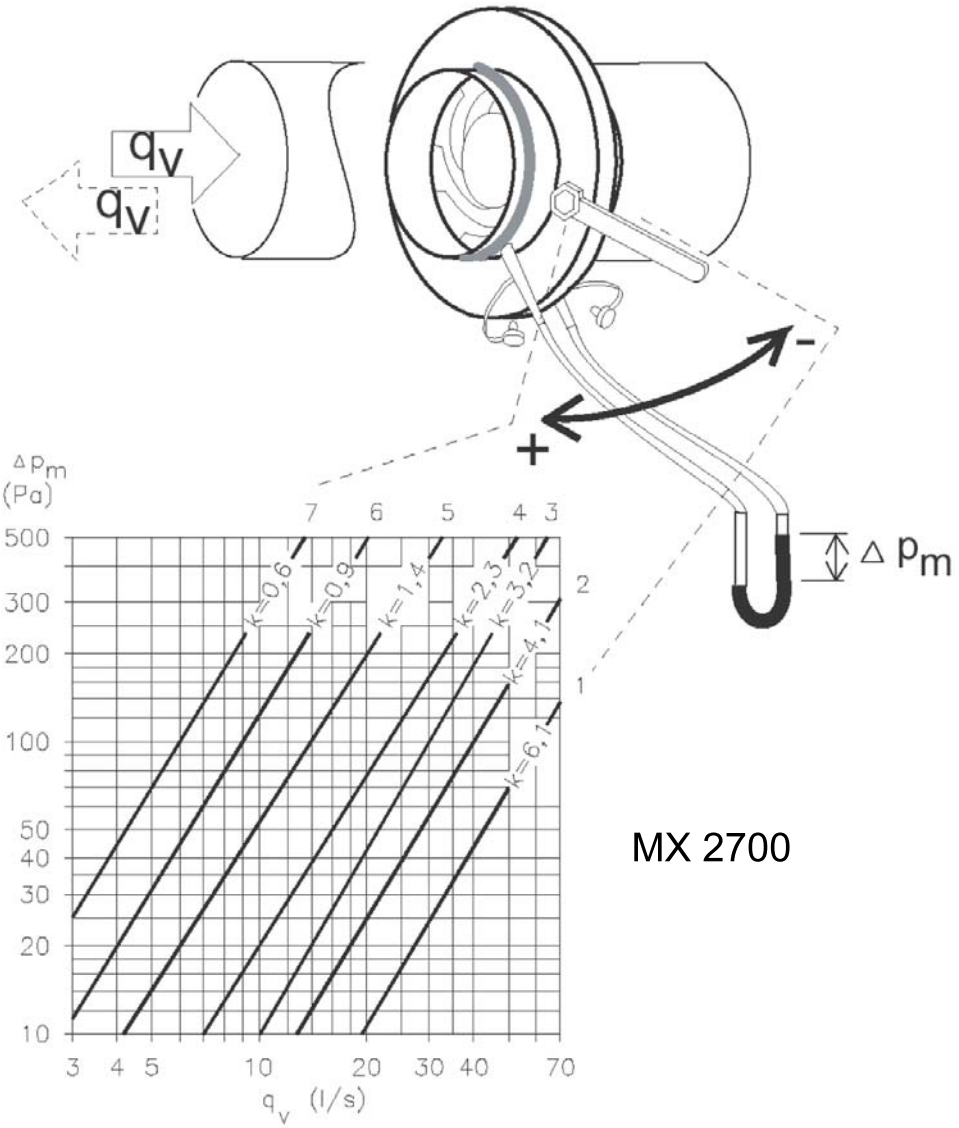


Figure 1.2 Purge damper flow control

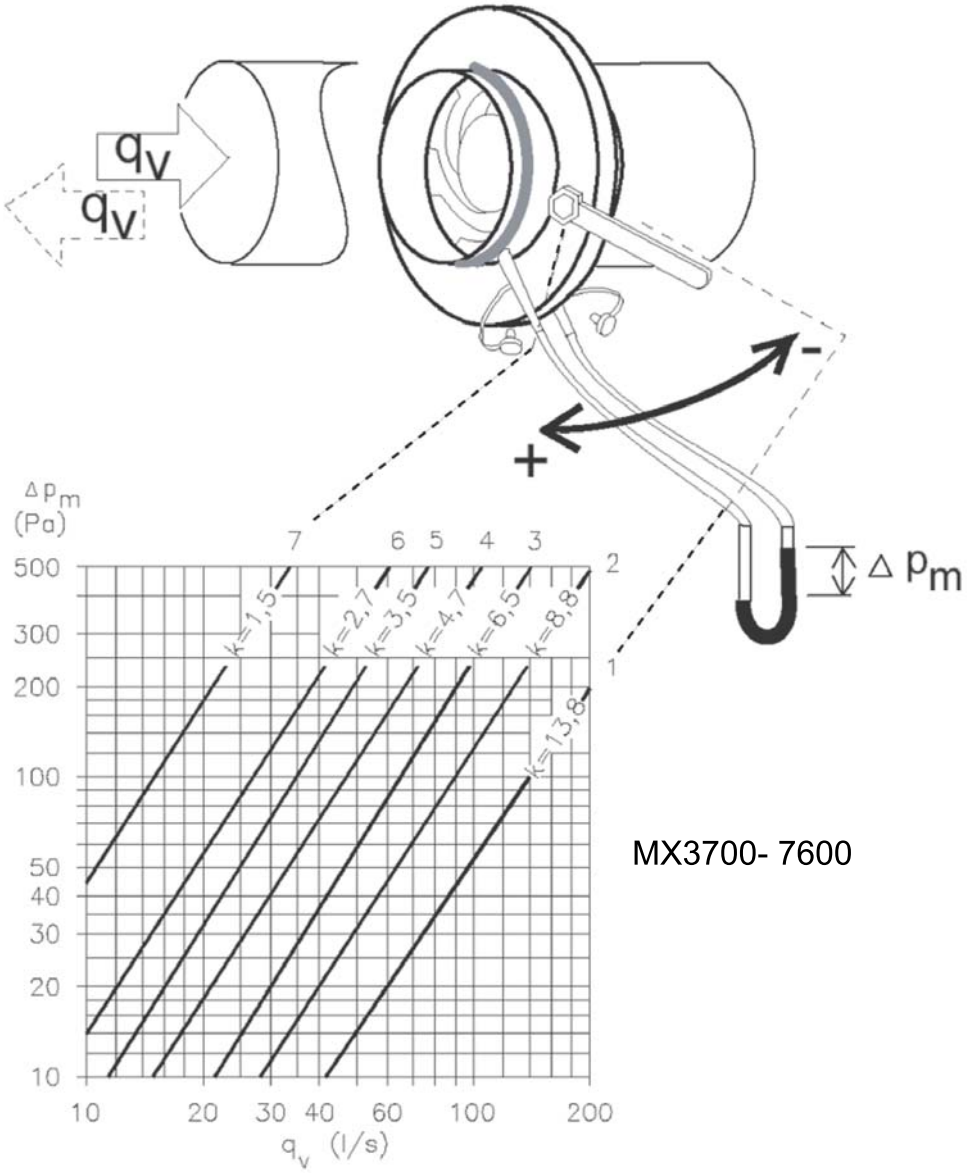


Figure 1.3 Purge damper flow control

Appendix 2 Control configurations

2.1 General

The MX(B)/MXT(B)-Series dehumidifiers have been designed to ensure that options can be incorporated with the minimum external physical alteration.
For wiring details refer to the Electrical wiring diagram .

NOTE! *Voltage drops may be experienced when using excessively long cables. At operation the voltage must be 24 V measured at the connection point (dehumidifier) for all external humidity transmitter and remote switch connections. If the measured voltage is less than 20 V, a separate relay controlled by the humidity transmitter must be used.*

2.2 Configuration alternatives

This appendix includes information about all MX(B)/MXT(B) dehumidifier control configurations. An individual unit is configured according to the MX Dehumidifier Configuration sheet positioned in front of the User's Manual, and can be used to find relevant information/section below.

2.2.1 Con guration 91-0

MX Base Control and Humidity control system RH98 with humidity control & wall sensor.
RH98 panel installed on the MX/MXT unit. Humidity control sensor included but must be installed and connected on site. Also refer to the RH98 Supplement, section 2.6.
The unit can run in both MAN and AUTO mode.

2.2.2 Con guration 92-0

MX Base Control and Humidity control system RH98 with humidity control, alarm & wall sensor.
RH98 panel including humidity deviation alarm installed on the MX/MXT unit. Humidity control sensor included but must be installed and connected on site. Also refer to the RH98 , section 2.6.
The unit can run in both MAN and AUTO mode.

2.2.3 Con guration 93-0

MX Base Control and Humidity control system RH98 with humidity control & duct sensor.
RH98 panel installed on the MX/MXT unit. Humidity control sensor included but must be installed and connected on site. Also refer to the RH98 , section 2.6.
The unit can run in both MAN and AUTO mode.

2.2.4 Con guration 94-0

MX Base Control and Humidity control system RH98 with humidity control & duct sensor.
RH98 panel installed on the MX/MXT unit. Humidity control sensor included but must be installed and connected on site. Also refer to the RH98 , section 2.6.
The unit can run in both MAN and AUTO mode.

2.2.5 Con guration 99-0

MX Base Control only.
No humidity control included. The unit can only run at continuous, maximum capacity.
External humidity transmitter can be added. Refer to the Electrical Wiring Diagram

This appendix includes information about all MX(B)/MXT(B) dehumidifier control configurations. An individual unit is configured according to the MX Dehumidifier Configuration sheet positioned in front of the User's Manual, and can be used to find relevant information/section below.

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