Rack conveyor and flight-type dishwashers MT Series

Economy and hygiene on a large scale



Sparkling cleaning results conveyed every time



Perfectly clean, hygienic dishes is a fundamental prerequisite – particularly in establishments where large numbers of people dine or drink. So it's important to be able to trust the performance of your warewasher in the way your guests trust the high quality of your cuisine. It is only when various work flows are harmonised, that you can be left to fully concentrate on your guests.

As a warewashing specialist, we know your potential requirements and can precisely offer you a tailored solution. We know what is important – in large restaurants, hotels or staff canteens, in refectories as well as in hospital, retirement home and nursing home kitchen facilities.



Maximum customisation for optimal warewashing solutions

The type and quantity of dishes varies from one kitchen to another. The MT Series can offer you an appropriate cleaning solution for your needs. Whether rack or flight-type conveyor, the modular design and wide range of options means the MT Series can be configured in line with your requirements.







MTR rack conveyor dishwasher

Do you need help in choosing a rack or flight type dishwasher?

	MTF flight-type dishwasher	MTR rack conveyor dishwasher		
Primary area of application	Cafeterias, hospitals, larger canteens and nursing facilities	Hotels, restaurants, motorway service stations, airports, smaller canteens and nursing facilities		
Quantity of dishes	Continual Irregular			
Washing times	Fixed	Variable		
Dishes	Uniform	Various		
Transport of dishes	On the conveyor belt: plates, trays, cloches, insulating trays, containers, etc. In racks glasses, cutlery, cups and small parts	All items sorted into appropriate racks		
Operating personnel	At least 2 people	At least 1 person		
Organisation	Straight loading and unloading zones	Individual planning of inlet and outlet tables (including with 90° or 180° curves)		
Scraping	General removal of food remnants (no manual pre-wash)	Manual pre-rinse generally required		
90° corner entry	-	Possible		
90° corner conveyor	-	Possible		
90°/180° outlet corner conveyor	-	Possible		

Certain features shown in the brochure are special equipment.

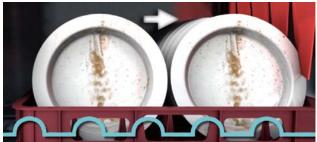


- Choose between flight or rack conveyor depending on your requirements
- Precise configuration according to your needs using a modular design
- A multitude of equipment and configuration options

Innovative technology for sparkling cleaning results

First-class results are standard for Winterhalter, especially large quantities of dishes. The secret to this is the intelligent interaction of developed technology.





Without continuous rack conveyor motion: Contact with the rinse water is not uniform*



With continuous rack conveyor motion: Uniform contact with the rinse water*

High-performance warewashing system

Wash arms, profile of jet and pump pressure are optimally coordinated. The angle of the wash arms can be individually adjusted. Where dishes with recesses are being washed, optional side wash arms ensure maximum coverage of surfaces.

Wash water filtration

Every pre-wash and main wash tank is equipped with a combined filter system, pump inlet and the tried and tested Mediamat. This removes fine, floating particles like coffee grounds from the wash water by using centrifugal force, ensuring perfect cleaning results every time.

Special programmes

With the special glasswashing (optional) and food container programmes, the washing process can be adapted to your special requirements. Where osmosis water is available for instance, it can be switched on for rinsing during the glasswash programme.

Continual rack conveyor

A special drive system has been developed for the continuos motion of dishes which guarantees uniform contact with the wash water.

Pre-wash zone with heat exchanger

A heat exchanger ensures, constant, low-temperature operation. Pre-washing is considerably improved as the clogging of starch and protein can be reliably prevented. The energy recovered from the pre-wash zone is used for heating up the rinse water.

^{*}Shown in a pre-wash zone



- Developed washing system combined with efficient wash water filtration
- Special programmes for glasses and food containers
- Uniform contact with the rinse water even with rack conveyor dishwashers



- Hygienically clean machine interior
- Filtered exhaust air for better ambient climate
- Self-cleaning programme

Consistent hygiene concept for added safety

Hygiene safety is imperative, particularly in large kitchens. The extensive hygiene concept including the special machine architecture guarantees process reliability and makes the MT Series unique.



MTF with plinth installation

Pivoting hygienic doors

The deep-drawn hygienic doors with smooth interiors prevent build-up of dirt and bacteria. They can be pivoted to 180°, enabling easy access to the insides of the doors.

Exhaust air system with grease filter

A grease filter protects the exhaust air duct from dirt. At the same time, deposits are reduced due to the system's rounded shape. The exhaust air conducted into the kitchen area is cleaner, which represents a major plus for the ambient climate.

HighTemp – Washing at high temperatures

For special requirements beyond DIN 10510, MT Series warewashers are also available in HighTemp versions. This function can be switched on or off as required.



Roof cleaning jet

Automatic self-cleaning

Rotating jets inside the machine's roof use clean water drawn from the rinse tank to clean during operation, without any additional water consumption. At the end of an operational day, the entire interior is rinsed out with fresh hot water and the tankwater is drained. This greatly reduces manual cleaning.

For maximum hygiene, the MT Series also offers:

- Deep-drawn hygienic tanks without corners or edges
- Smooth hygiene rear panel without riser pipes
- Heat exchanger cleaning system with two rotating wash arms (up and down)
- · Plinth installation

Sophisticated solutions for minimum operating costs

Reducing costs and saving on resources are important topics when washing large quantities of dishes. The mature technical solutions of the MT Series will enable you to reduce your operating costs daily.





Minimal water consumption

The MT Series optimised rinse system reduces fresh water consumption by up to 30%. This corresponds to an annual saving of 227,800* litres of water for example. This is equivalent to the average consumption of a five-person household.

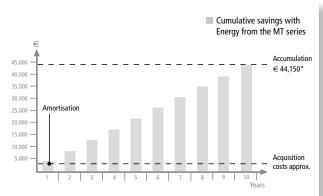
Rack-activated control zone

Rack-activated control zones enables the MT Series to react to the specific load as it passes through the machine: pumps, fresh water supply and drying are only activated when dishes are in that particular zone. Consequently resources like water, detergent, rinse aid and energy are used in a targeted, economical way. In addition emissions of noise, heat and vapours are also minimised.

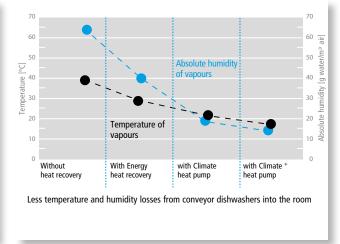
For added economy, the MT Series also includes:

- · Double-walled design
- · Sealed base cover
- · Single tank regeneration pre-wash zone
- Detergent and energy saving facility: up to 50 % less detergent, up to 3 kWh per hour less energy

^{*}For a water saving of 130 I/h (MTR 5-430 LLLLM), 6 operating hours per day, 365 operating hours per year and 80 % utilisation.







Energy exhaust air heat recovery

Energy exhaust air heat recovery uses energy from warm exhaust air to heat up the cold incoming water. Humidity and temperature of exhaust air is thereby noticeably reduced. Energy requirements per second are lowered by up to 12 kWh.*1

Climate heat pump

With the Climate heat pump even more energy can be recovered than with Energy exhaust air heat recovery. The humidity and temperature of the exhaust air is further reduced, with energy savings of up to 14 kWh per hour. No on-site exhaust air system needs to be connected to the exhaust air vent.*1

Climate+ heat pump

With the Climate+ heat pump, as well as the cold incoming water, the tank water in the final main washing tank is also heated up. Energy savings here are around 18 kWh per hour. The humidity and temperature of the exhaust air is again reduced at the same time. No on-site exhaust air system needs to be connected to the exhaust air vent.*2

Lowest operating costs:

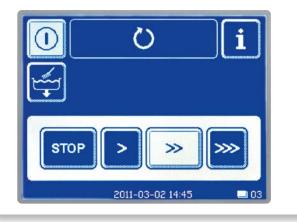
- Reduced consumption of resources
- Lower connection values when using heat recovery systems
- · Improved ambient temperature

^{*}¹We recommend connecting the exhaust air vent indirectly to the on-site exhaust air system.

^{*2} Please refer to guidelines for kitchen ventilation systems.

The touch screen – intuitive operation, comprehensive monitoring

Data relating to hygiene and operation can be recovered quickly and simply via the touch screen. Comprehensive data capture enables kitchen management to maintain an overview at all times.







Operating data logbook - Language setting: English

Intuitive operation

Language-neutral symbols and animations on the touch screen enable reliable operation – even by untrained kitchen porters.

The warewasher takes the responsibility

The MT Series communicates machine information and errors via visual and audible signals. This enables immediate detection and refilling of empty detergent and rinse aid containers. Tank and boiler temperatures can be displayed too at any time for the monitoring of safe operation.

Passive hygienic safety

An error signal output by an external detergent metering system on the machine display also increases hygienic safety.

PIN-protected kitchen manager level

With PIN-protected access, kitchen management can query important data such as consumption, utilisation and service intervals at any time. The operating data logbook enables washing habits to be monitored and optimised as required. The hygiene logbook documents all hygiene-relevant events and malfunctions.

Monitoring of external water treatment unit

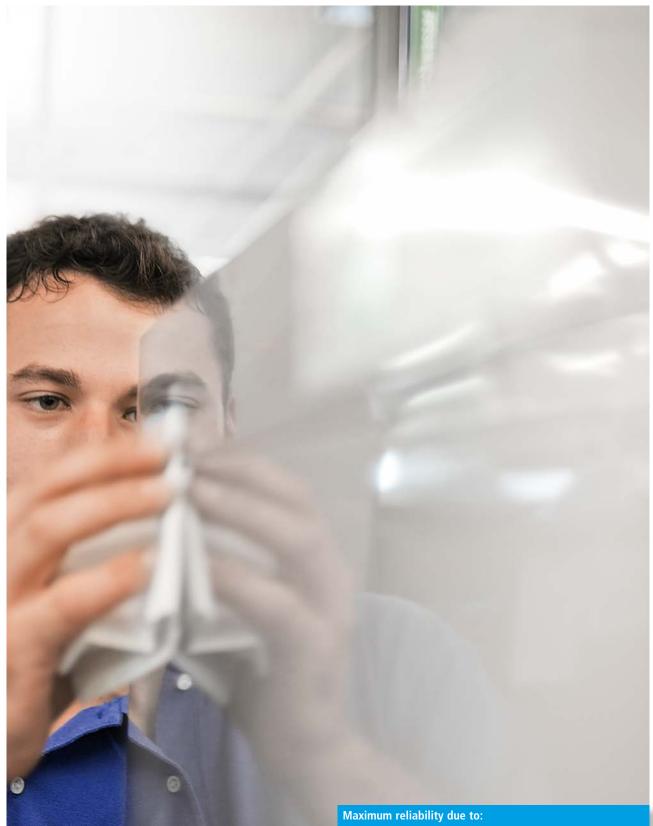
Error messages from external water treatment units (e.g. RoMatik 420) can also be displayed via the MT Series display. This enables downtimes to be reduced significantly ensuring perfect rinsing results every time.

For maximum operating comfort, the MT Series also offers:

- · Time-controlled, automatic switch on
- · A choice of more than 24 display languages
- · GSM module for remote data transfer
- · Data interfaces



- Minimisation of possible operating errors
- Simple monitoring of hygiene-relevant data
- Comprehensive data retention and machine monitoring
- Rapid error detection even on external devices



- Maximum machine service life
- Minimisation of servicing work and costs
- Certified manufacturing processes

Quality you can completely trust

Quality demands and technical innovation have enabled Winterhalter to repeatedly set new industry standards. Because of this, you profit from reliable and safe warewashing.







Being a family company, which is now in its third generation, Winterhalter has always placed great emphasis on innovation. Extensive material tests are conducted before the ideal components are selected.

The latest manufacturing systems and structured processes enable a constantly high level of product quality to be attained. This results in a long machine service life, which ensures you can work comfortably and safely.



Service friendliness

To reduce maintenance work as much as possible, all relevant components are simple-to-access. Service technicians can access test programs quickly via the touch screen for troubleshooting purposes.

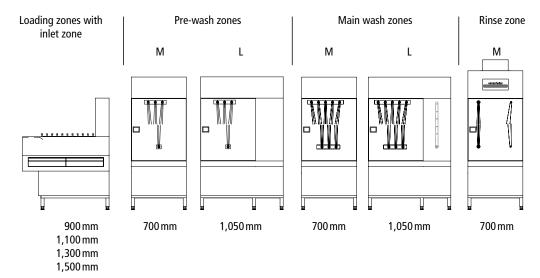
Certified quality and environmental management

Winterhalter was one of the first companies in its sector to be awarded the Certificate for



Quality Management Systems (EN ISO 9001), for the Environment (EN ISO 14001) and Health and Safety in the Workplace (BS OHSAS 18001).

These internationally recognised certificates are proof that Winterhalter meets the highest requirements.



MTF flight-type dishwashers, 65 conveyor belt		MTF 3-2800 MMM	MTF 3-3300 MLM	MTF 3-3700 LLM	MTF 4-4100 MMLM
Number of washing tanks as per DIN 10510		3	3	3	4
Theoretical machine performance*1	[plates/h]				
 Intensive programme 		1,200 /1,600/1,800	1,400 /1,900/2,100	1,600 /2,100/2,400	1,700 /2,300/2,600
– Standard programme* ²		1,800 /2,000/2,400	2,100 /2,300/2,800	2,400 /2,700/3,200	2,600 /2,900/3,500
– Rapid programme		2,400/2,600/ 2,800	2,800/3,000/ 3,300	3,200/3,500/ 3,700	3,500/3,800/ 4,100
Pre-wash zone		M	M	L	M
Main wash zone(s)		M	L	L	M + L
Rinse zone		M	M	M	М
Blowing-out zone (option)*3		M or L	M or L	M or L	M or L
Drying zone (optional)		M, L or XL			
Dimensions					
Machine length without inlet zone, blowing-out zone, drying zone, loading and unloading zones)	[mm]	2,100	2,450	2,800	3,150
Machine depth	[mm]	800	800	800	800
Machine height (incl. vent)	[mm]	1,910	1,910	1,910	1,910
with Energy exhaust air heat recovery	[mm]	2,010	2,010	2,010	2,010
– with Climate/Climate+ heat pump [mm]		2,180	2,180	2,180	2,180
Passage width	[mm]	610	610	610	610
Max. passage height	[mm]	440	440	440	440
Water consumption					
Total tank filling water quantity	[1]	240	240	240	325
Rinse water volume with double rinse zone (standard)*4	[l/h]	200	200	220	220
Rinse water volume with triple rinse zone (optional)*4	[l/h]	290	290	310	320

 $^{^{\}star 1}$ Plate capacity is based on standard conveyor belt (65 mm), factory settings in bold

Equipment variants

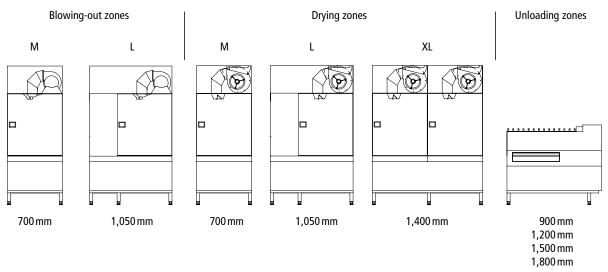
Cleaning results	Standard	Option
Mediamat in all pre-wash and main wash zones	•	
Special glasswashing programme		•
Food container wash programme	•	
Side wash arms (only in machines with main wash zone L)		•
Rinse booster pump for fresh water rinsing	•	
Heat exchanger in pre-wash zone*5	•	
Console with pre-spray unit for manual scraping		Acces- sories

Hygiene	Standard	Option
Pivoting hygienic doors	•	
Hygienic exhaust air system with grease filter and exhaust air ventilator	•	
Automatic self-cleaning programme	•	
Roof cleaning jet	•	
Double cleaning system for heat recovery	Climate+	•
Deep-drawn hygienic tanks	•	
Smooth hygienic rear panel without riser pipes	•	
Plinth installation		•

 $^{^{*2}}$ 2 min. contact time as per DIN 10510 for commercial rinsing in conveyor dishwashers

 $^{^{*3}}$ Only possible in combination with drying zone M

^{*7} Not possible in combination with double rinse zone, detergent and energy saving device, osmosis water saving device, osmosis water mode or machine models larger than the 3-tank MMM



MTF 4-4100 MLMM	MTF 4-4800 MLLM	MTF 4-4800 LLMM	MTF 4-4800 LMLM	MTF 4-5400 LLLM	MTF 5-6300 LLMLM	MTF 5-6600 LLLLM
4	4	4	4	4	5	5
1,700 /2,300/2,600	2,100 /2,800/3,100	2,100 /2,800/3,100	2,100 /2,800/3,100	2,300 /3,100/3,500	2,700 /3,600/4,100	2,800 /3,700/4,200
2,600 /2,900/3,500	3,100 /3,500/4,100	3,100 /3,500/4,100	3,100 /3,500/4,100	3,500 /3,900/4,600	4,100 /4,500/5,400	4,200 /4,700/5,600
3,500/3,800/ 4,100	4,100/4,500/ 4,800	4,100/4,500/ 4,800	4,100/4,500/ 4,800	4,600/5,000/ 5,400	5,400/5,900/ 6,300	5,600/6,100/ 6,600
M	M	L	L	L	L	L
L + M	L + L	L + M	M + L	L + L	L + M + L	L + L + L
M	M	M	M	M	М	М
M or L						
M, L or XL						
3,150	3,500	3,500	3,500	3,850	4,550	4,900
800	800	800	800	800	800	800
1,910	1,910	1,910	1,910	1,910	1,910	1,910
2,010	2,010	2,010	2,010	2,010	2,010	2,010
2,180	2,180	2,180	2,180	2,180	2,180	2,180
610	610	610	610	610	610	610
440	440	440	440	440	440	440
325	325	325	325	325	410	410
220	220	220	220	240	270	270
320	320	320	320	340	380	380

^{*4} Under ideal conditions. Fresh water consumption is dependent on local conditions and utilisation. Minor adjustments will be made on commissioning

Subject to technical modifications

Economy	Standard	Option
Double rinse zone*6	•	
Triple rinse zone with temperature levels		•
Rack-controlled zone activation	•	
Energy exhaust air heat recovery		•
Climate heat pump (copper)*7		•
Climate+ heat pump (stainless steel)*8		•
Detergent saving device (Rinse water bypass)		•
Detergent and energy saving device*9 (Rinse water bypass with heat exchanger)		•
Single tank regeneration pre-wash zone	•	
Double-walled design	•	
Sealed stainless steel base cover	•	

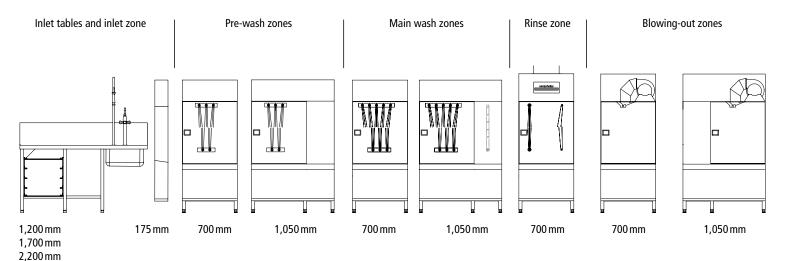
Operator convenience	Standard	Option
Electronic control with multi- functional touch screen	•	•
3 transport speeds (can be individually adjusted by service staff)	•	
Time-controlled commissioning	•	
Maintenance interval indicator	•	
Conveyor belt reversal	•	
Hygiene logbook with data memory	•	
RS 232 or RS 422 data interface		•
GSM module for remote data transfer		•

•
•
•

^{*8} Not possible in combination with steam heating, osmosis water saving device, detergent and energy saving system or HighTemp variants

 $^{^{\}star 9}\,\text{Not}$ possible in combination with Climate or Climate+ and inlet water temperature $>40\,^{\circ}\text{C}$

 $^{^{*10}}$ With installations that are free-standing (distance to wall > 12.5 mm) a rear panel is necessary to maintain protection against water jets IPX5 (standard)



Further variants available on request

iits available on request						
Standard MTR rack conveyor dishwasher		MTR 2-120 MM	MTR 2-155 LM	MTR 3-185 MMM	MTR 3-215 MLM	MTR 3-250 LLM
Number of washing tanks as per DIN 10510		2	2	3	3	3
Theoretical machine performance*1	[racks/h]					
 Intensive programme 		50 /70/75	65 /85/100	80 /105/120	90 /120/135	105 /140/160
 Standard programme*² 		75 /85/105	100 /110/130	120 /135/160	135 /155/185	160 /180/215
– Rapid programme		105/110/ 120	130/140/ 155	160/175/ 185	185/200/ 215	215/230/ 250
Pre-wash zone		-	-	M	M	L
Main wash zone(s)		M	L	M	L	L
Rinse zone		M	M	M	M	M
Blowing-out zone (optional)*3		M or L				
Drying zone (optional)		M, L or XL				
Dimensions						
Machine length (without inlet zone, blowing-out zones, drying zones or table systems)	[mm]	1,400	1,750	2,100	2,450	2,800
Length of MTR inlet zone	[mm]	175	175	175	175	175
Machine depth	[mm]	800	800	800	800	800
Machine height (incl. vent)	[mm]	1,910	1,910	1,910	1,910	1,910
– with Energy exhaust air heat recovery	[mm]	2,010	2,010	2,010	2,010	2,010
– with Climate/Climate+ heat pump [mm]		2,180	2,180	2,180	2,180	2,180
Passage width	[mm]	500	500	500	500	500
Max. passage height	[mm]	460	460	460	460	460
Water consumption						
Total tank filling water quantity	[۱]	155	155	240	240	240
Rinse water volume with double rinse zone (standard)*4	[l/h]	190	190	190	190	190
Rinse water volume with triple rinse zone (optional)*4	[l/h]	260	260	260	260	280

^{*1} Factory settings in bold

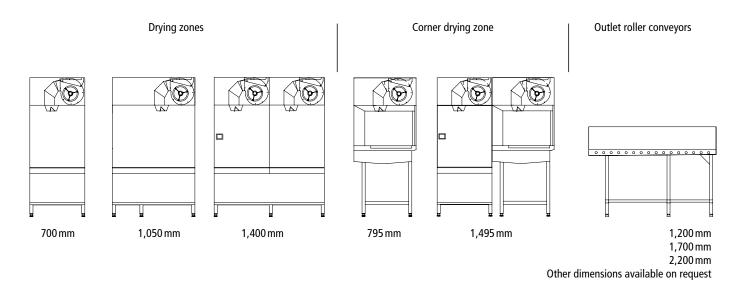
Equipment variants

al t	a	• •
Cleaning results	Standard	Option
Mediamat in all pre-wash and main wash zones	•	
Continuous rack conveyor transport	•	
Special glasswashing programme		•
Food container wash programme	•	
Side wash arms (only in machines with main wash zone L)		•
Rinse booster pump for fresh water rinsing	•	
Heat exchanger in pre-wash zone*5	3-tank or above	

Hygiene	Standard	Option
Pivoting hygienic doors	•	
Hygienic exhaust air system with grease filter and exhaust air ventilator	•	
Automatic self-cleaning programme	•	
Roof cleaning jet	•	
Double cleaning system for heat recovery	Climate+	•
Deep-drawn hygienic tanks	•	
Smooth hygienic rear panel without riser pipes	•	
Plinth installation		•

 $^{^{*2}}$ 2 min. contact time as per DIN 10510 for commercial rinsing in conveyor dishwashers

 $^{^{*3}}$ Only possible in combination with drying zone M



MTR 4-250 MMMM	MTR 4-285 MMLM	MTR 4-285 LMMM	MTR 4-285 MLMM	MTR 4-315 MLLM	MTR 4-315 LLMM	MTR 4-350 LLLM	MTR 5-430 LLLLM
4	4	4	4	4	4	4	5
105 /140/160	120 /165/185	120 /165/185	120 /165/185	135 /180/200	135 /180/200	150 /200/225	185 /245/275
160 /180/215	185 /205/245	185 /205/245	185 /205/245	200 /225/270	200 /225/270	225 /250/300	275 /305/365
215/230/ 250	245/265/ 285	245/265/ 285	245/265/ 285	270/295/ 315	270/295/ 315	300/325/ 350	365/395/ 430
M	M	L	M	M	L	L	L
M + M	M + L	M + M	L + M	L + L	L + M	L + L	L+L+L
M	M	M	M	M	M	M	M
M or L							
M, L or XL							
2,800	3,150	3,150	3,150	3,500	3,500	3,850	4,900
175	175	175	175	175	175	175	175
800	800	800	800	800	800	800	800
1,910	1,910	1,910	1,910	1,910	1,910	1,910	1,910
2,010	2,010	2,010	2,010	2,010	2,010	2,010	2,010
2,180	2,180	2,180	2,180	2,180	2,180	2,180	2,180
500	500	500	500	500	500	500	500
460	460	460	460	460	460	460	460
325	325	325	325	325	325	325	410
190	210	210	210	220	220	250	270
280	300	300	300	320	320	360	380

^{*4} Under ideal conditions. Fresh water consumption is dependent on local conditions. Minor adjustments will be made on commissioning

Subject to technical modifications

Economy	Standard	Option
Double rinse zone*6	•	
Triple rinse zone with temperature levels		•
Rack-controlled zone activation	•	
Energy exhaust air heat recovery		•
Climate heat pump (copper)*7		•
Climate+ heat pump (stainless steel)*8		•
Detergent saving device (Rinse water bypass)		3-tank or above
Detergent and energy saving device*9 (Rinse water bypass with heat exchanger)		3-tank or above
Single tank regeneration pre-wash zone	•	
Double-walled design	•	
Sealed stainless steel base cover	•	

Standard	Option
•	
•	
•	
•	
•	
	•
	•
	Standard • • • • • • •

Other equipment	Option
Master switch	•
Rear panel* ¹⁰	•
Steam-heating (boiler or tank and boiler)	•

^{*8} Not possible in combination with steam heating, osmosis water saving device, detergent and energy saving system, HighTemp variants or machine model MTR 2-120 MM

 $^{^{*9}}$ Not possible in combination with Climate or Climate+ and inlet water temperature $>40\,^{\circ}\text{C}$

winterhalter®



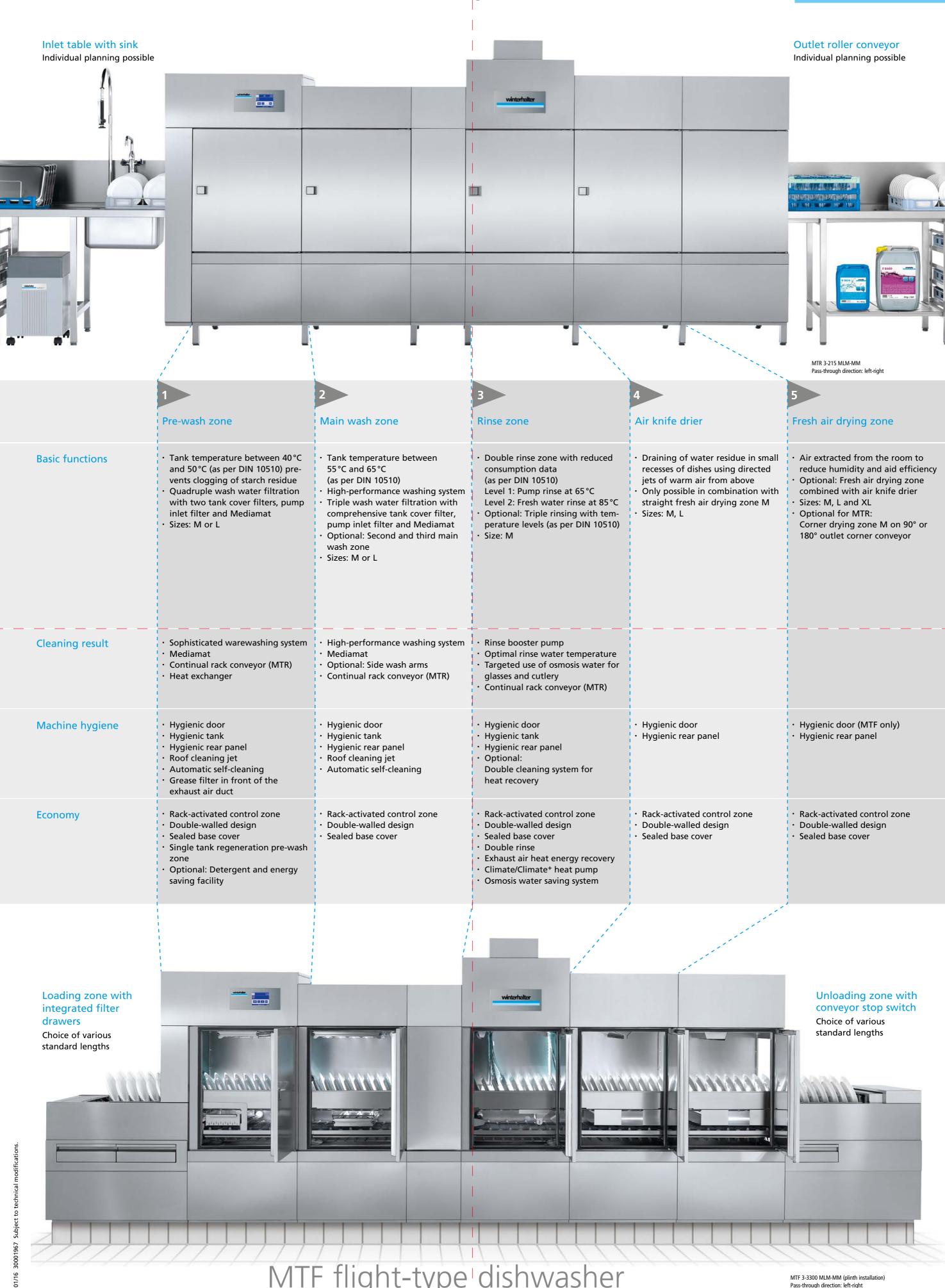
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MTR rack conveyor dishwasher



 Individual planning Individual planning •

Optimal workflows keep staff utilised at all times

Up to 80 percent of ongoing costs in a kitchen are personnel costs. It's therefore all the more important to ensure efficient workflows by intelligent planning.

An individual machine

The modular design of the MT Series means each machine has its own unique concept. Extensive consideration is given to any special requirements. The quantity of dishes can be handled without any problems using a tailor-made solution.

Individual planning

The correct planning enables perfect washing. Winterhalter takes into account work processes, individual room characteristics, quantity of dishes, degree of soiling and the time food residue may dry onto plates.

Supplemented by appropriate accessories like dirties tables, rack dollies and handling systems. Winterhalter provides an optimal washing process flow. All factors in the cleaning process are perfectly harmonised reducing working time and personnel costs.



Tailor-made solutions:

- Modular structure
- Comprehensive accessories range
- Sophisticated washing flows

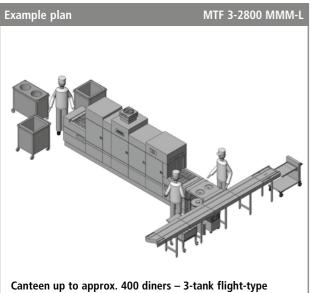


MTR - Individual planning •

MTR 3-250 LLM-M

• MTF – Individual planning

MTF flight-type dishwashers – sophisticated solutions

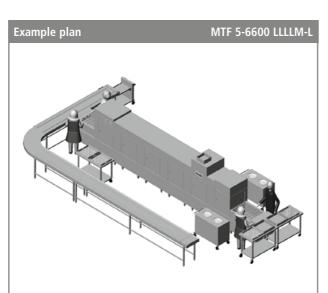


dishwasher with drying zone L, plinth installation

up to 2,800 plates/h

Machine length: 4,950 mm

Loading area: Round-belt inlet conveyor belt with tray stacker **Unloading area:** Rack stacker and plate stacker



Canteen up to approx. 500 diners - 5-tank flight-type dishwasher with drying zone L

up to 6,600 plates/h

Machine length: 9,000 mm Loading area: Round-belt-inlet conveyor belt Unloading area: Plate stacker and glass rack trolley

Conveyor belts

Ideal for dishes and trays



Universal finger conveyor belt, 65 mm

Ideal for insulating trays



Universal sprogget belt, 90 mm

Ideal for dishes and trays



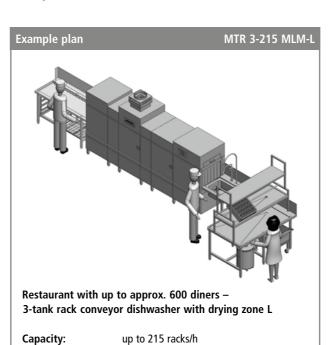
Full sprogget belt, 65 mm

Ideal for glass racks 600 x 400 mm



Flat belt

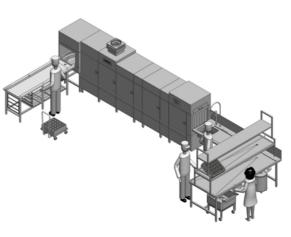
MTR rack conveyor dishwashers – sophisticated solutions



Total length/depth: 7,675 mm/1,800 mm Clearing and sorting station, inlet table Loading area:

with sink and pre-spray unit Unloading area: Outlet roller table

MTR 4-315 LLMM-XL



Hotel (full board à la carte) with up to approx. 1,000 diners -4-tank rack conveyor dishwasher with corner drying zone XL

up to 315 racks/h Total length/depth: 7,970 mm/3,085 mm Loading area: Clearing and sorting station, inlet table

with sink and pre-spray unit Outlet corner conveyor and outlet roller table Unloading area:

Rack assortment

corner drying zone M

Capacity:

Loading area:

Unloading area:

Example plan

At Winterhalter you can choose from a wide range of racks to select a suitable solution for your needs. Using the optimal rack makes a considerable contribution to good cleaning results.

Retirement or nursing home with up to approx.

Total length/depth: 4,520 mm/3,600 mm

400 residents - 3-tank rack conveyor dishwasher with

up to 250 racks/h

Clearing and sorting station, corner entry

90° outlet corner conveyor and outlet

table with sink and pre-spray unit



