

**minitron**  
elektronik gmbh

The dicing process has great impact on costs and quality of devices: smaller die sizes, smaller kerf, more sensitive wafer and substrate materials. This requires tight control of the process window. At the same time environmental needs are getting higher attention, as requested by DIN EN ISO14001.

Thus the responsible usage of water becomes more and more important.

With our equipment for intelligent water recycling your process turns **greener** and you will get better control of your process conditions. This will bring your process up to a new level.

Cooling system **mtt 2012 / mtt 2014** supply your high power spindles of modern dicing saws with stable controlled process water.

The filtration system **mtt 4015/ mtt 4018** allows the de-ionized and filtered process water to be reused multiple times and enables the usage of additives.

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Chiller

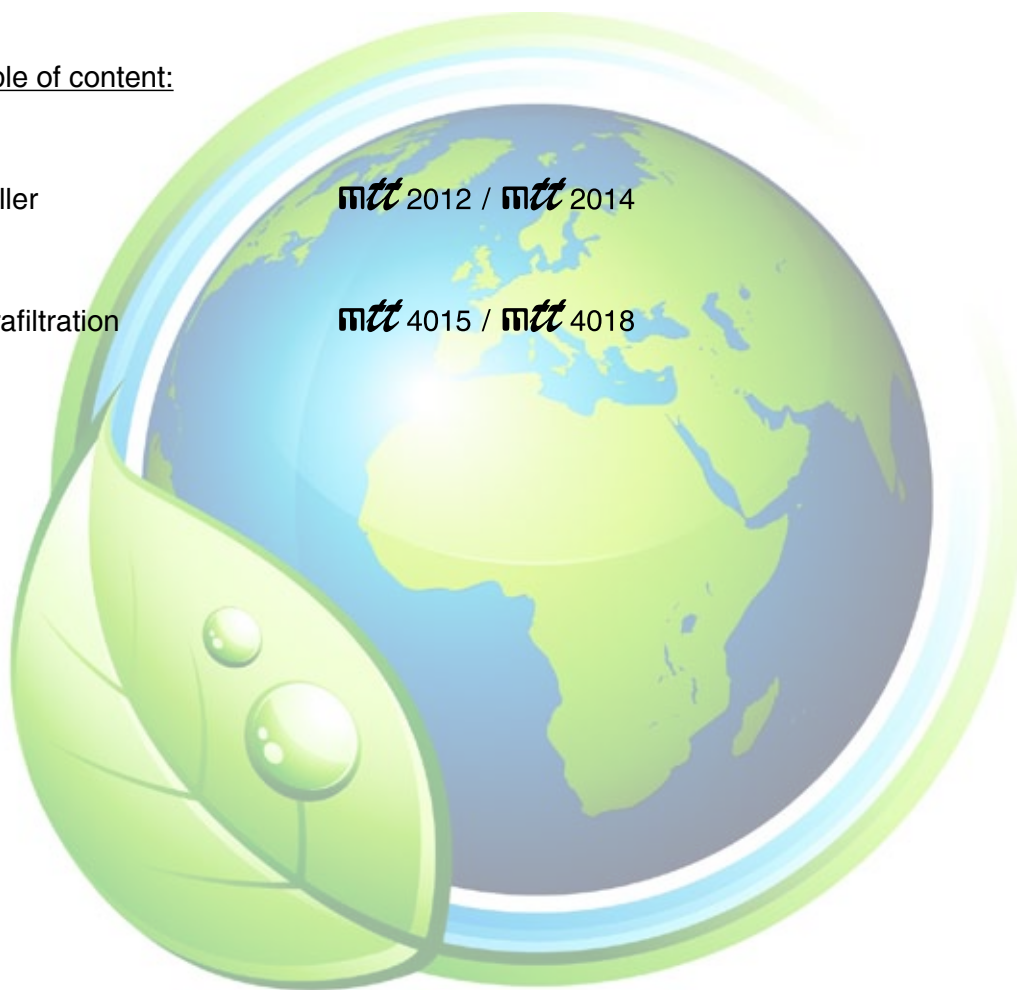
**mtt 2012 / mtt 2014**

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Ultrafiltration

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# Chiller **mtt** 2012 / **mtt** 2014

Air bearing spindles produce heat. Process water treatment produces heat. **mtt 2012** provides the cooling. **mtt 2012** is a chiller system with specially selected circulation pumps to take out the heat to provide cool results.

**mtt 2014** offers a higher power and works with two cooling circulation systems. Because of that, the chiller **mtt 2014** should be used with the big Ultrafiltration **mtt 4018**.



*For a perfect process.*

## **mtt 2012 technical data:**

Cooling capacity at 20°C :	940W
Cooling capacity at 10°C :	780W
Temperature range :	-10°C to +40°C
(cryogen depending)	
Control accuracy :	+/- 1K
Display :	LED
Tank volume :	4,6l
Max. current :	3,5 A
Output :	11 l/min (at 0bar)
Discharge head :	34mWs
Dimensions (HxWxD)	600x340x400 mm
Electrical connection :	230V/50Hz/1
Weight :	41kg



**mtt 2012**

## **mtt 2014 technical data:**

Cooling capacity at 20°C :	2000W
Cooling capacity at 10°C :	1500W
Temperature range :	-10°C to +40°C
(cryogen depending)	
Control accuracy :	+/- 1K
Display :	LED
Tank volume :	9,0l
Max. current :	8,0 A
Output :	11 l/min
Discharge head :	34mWs
Dimensions (HxWxD)	760x440x470 mm
Electrical connection :	230V/50Hz/1
Weight :	80kg

Recommended for use with Ultrafiltration **mtt 4018**.



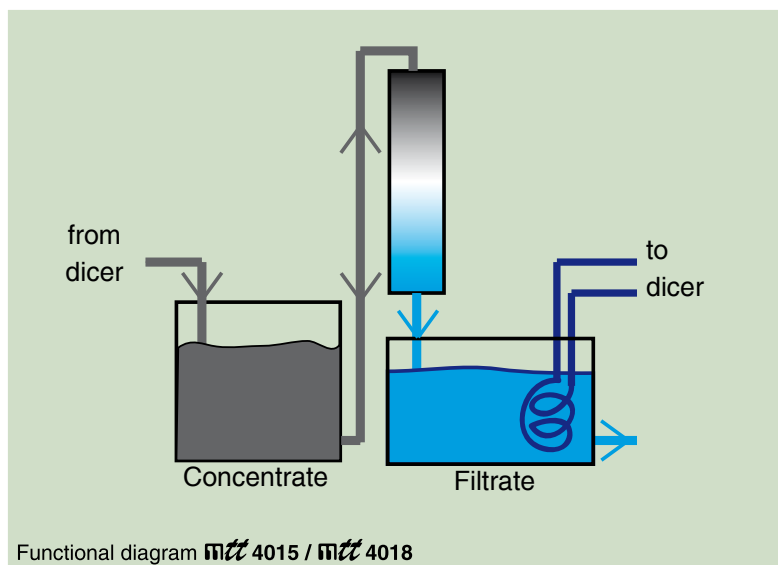
**mtt 2014**

# Process Water Recycling by Ultrafiltration System

## **mtt 4015 / mtt 4018 for a small and big cycle.**

A dicing saw typically requires 3 – 6 liters of water per minute. **mtt 4015** is designed to provide the process water for 2 saws (single spindle). Used process water is pressed against a separation membrane with a pore size of 20nm. Clean water passes, debris stays behind. As the filter surface is being loaded with debris, the pressure difference is rising. At a preselected value of pressure difference the filter surface is being back flushed. The debris is drained into a preselected destination: saw waste water system or factory drain.

Process water purification system stops wasting precious water resources. Circulation allows the use of water additives for longer blade life, less chipping, cleaner machines. Keeping toxic residues in a controlled volume. Small footprint saves valuable cleanroom space.



Functional diagram **mtt 4015 / mtt 4018**



Small footprint, for one to two dicing saws.

### **mtt 4015 technical data:**

Process water volume:	50l
Temperature range:	5-35°C
Filter capacity:	10 l/min
Water pressure:	3,5 bar
Air:	6 bar
Display:	TFT
Dimensions Ultrafiltration (HxWxD):	1630x400x700 mm
Dimensions collection container incl. pump (HxWxD):	800x500x500 mm
Electrical connection:	220V, 5A
Weight Ultrafiltration:	91 kg
Weight collection container incl. pump:	27 kg

**mtt 4015** Ultrafiltration System with collection container incl. pump.

# Process Water Recycling by Ultrafiltration System

## **mtt 4015 / mtt 4018 for a small and big cycle.**

### **Advantages mtt 4015 / mtt 4018:**

- Ultrafiltered, cooled, crystal clear process water
- Reduction of water consumption
- Significant cost savings
- Economical use of dicing additives
- Amortization of investment costs in short time
- Simple installation with all common wafer saws



*for an environmentally friendly disposal.*

### **mtt 4018 technical data:**

Process water volume:	150l
Temperature range:	5-35°C
Filter capacity:	44 l/min
Water pressure:	2 bar
Air:	6 bar
Display:	TFT
Dimensions Ultrafiltration (HxWxD):	1780x600x950 mm
Dimensions collection container incl. pump (HxWxD):	1380x600x950 mm
Dimensions extension inclined filter / bandfilter (HxWxD):	400x600x950 mm
Electrical connection:	220V, 5A
Weight Ultrafiltration:	140 kg
Weight collection container incl. pump:	70 kg
Weight extension inclined filter / bandfilter	30 kg



**Small footprint, for up to ten dicing saws.**

**mtt 4018 Ultrafiltration System with collection container incl. pump.**



**mtt 4018 Ultrafiltration System with collection container incl. pump and additional construction with inclined filter/bandfilter.**







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