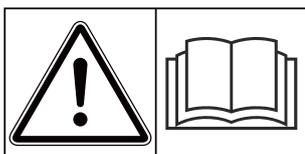




Operator's manual



**Please read carefully
before using the
machine!**

Keep for future use

This operator's and assembly manual is an integral part of the machine. Suppliers of new and second-hand machines are required to document in writing that the operator's and assembly manual was delivered with the machine and handed over to the customer.

PPS 5 AXIS M

5903595-a-en-0224

Original instructions

Table of contents

1 PPS 5 AXIS M	5
1.1 Scope of delivery and assembly of practical test kit.....	5
2 Checking or determining the settings	7
3 Definition of the terms "triangular spreading pattern" and "trapezoidal spreading pattern"	8
4 Performing a spreading test	10
4.1 Conduction of a spreading test with one pass.....	10
4.2 Conduction of a spreading test with two passes.....	12
4.3 Conduction of a spreading test with three passes.....	13
5 Evaluating the results and correcting them if necessary	14

1 PPS 5 AXIS M



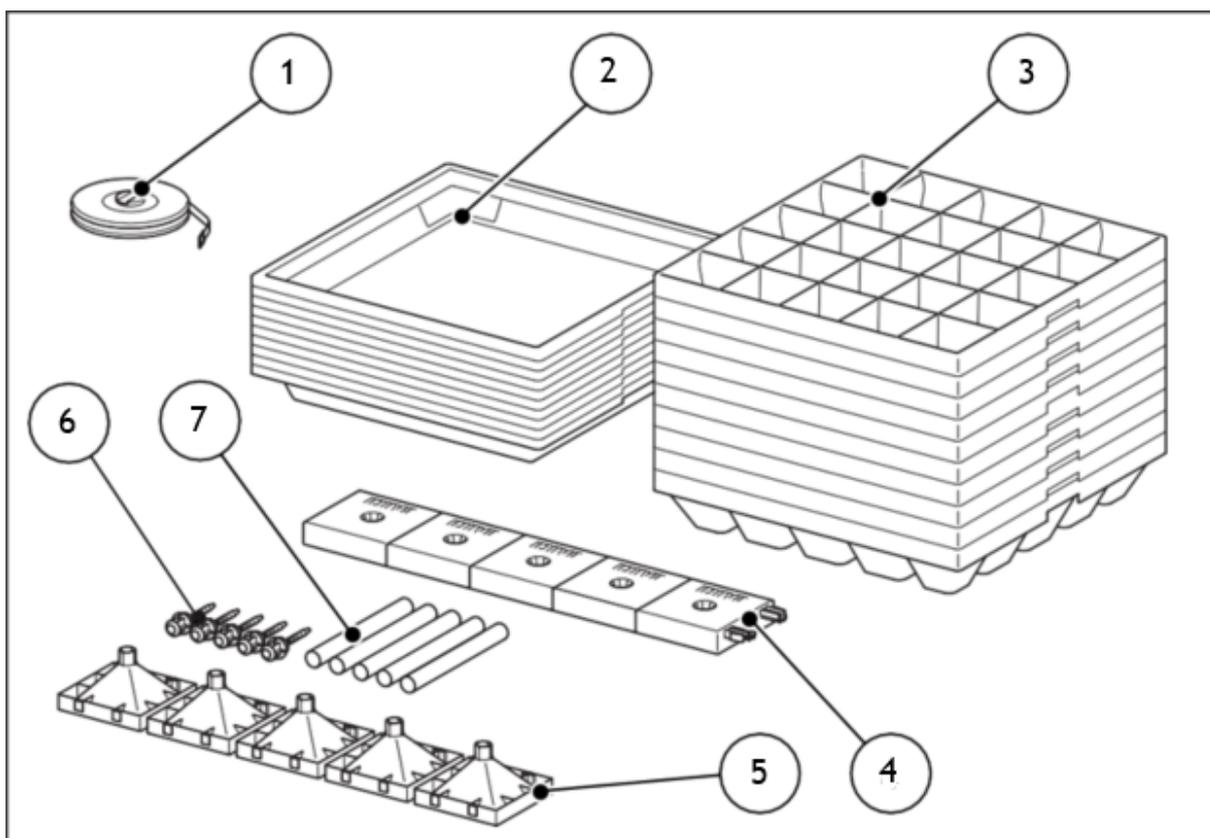
This manual contains important information on the safe operation of the accessory and how it works. It is therefore an important part of your machine documentation.

- Before using the machine, read the manual carefully and keep it for future use. In addition to the information in this manual, also observe all the information in the operating manual for your machine.
- If you have any other accessories for this machine, please also observe the information in these manuals.

With the practical test kit you can check the information in the fertilizing charts for fertilizer distribution.

1.1 Scope of delivery and assembly of practical test kit

Scope of delivery



- [1] Measuring tape, 1 piece
- [2] Plastic vessel, 10 pieces
- [3] Plastic insert, 10 pieces
- [4] Foot rest, 5 pieces

- [5] Hopper, 5 pieces
- [6] Locking bolt, 5 pieces
- [7] Tube, 5 pieces

Assembling the measuring tubes

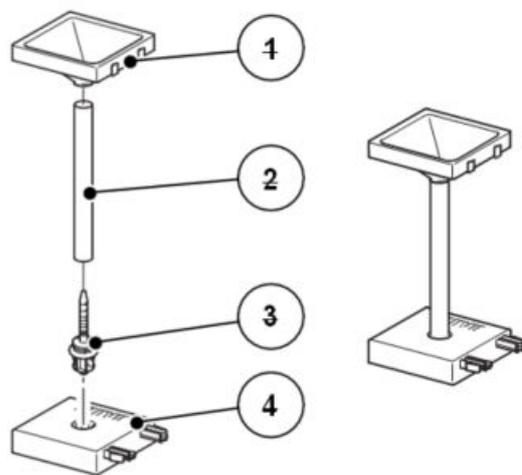


Fig. 1: Assembling measuring tubes

- ▶ Insert locking bolt [3] into foot rest [4].
- ▶ Fit tube [2] on to locking bolt.
- ▶ Insert hopper [1] into tube [4].

2 Checking or determining the settings

The settings can be checked using the practical test kit (optional equipment) or determined for fertilizers not listed in the fertilizing chart.

To check the spreader settings quickly, we recommend using the layout for one pass.

To determine and correct the spreader settings more accurately, we recommend using the layout for two passes. To check the spreading symmetry, use the layout with three passes.

Requirements and conditions



The requirements and conditions listed apply to one pass, and also two or three passes. Comply with these conditions to ensure that the results are as accurate as possible.

- Carry out the test on a dry day with no wind in order that the weather does not affect the result.
- We recommend a testing area that is horizontal in both directions. (Width 3 x track spacing, length approx. 40 - 50 m)
- Test either on a freshly mowed track or in the field if the crop is low (max. 10 cm), making sure that the tracks are parallel. If the tracks are not drilled, the tracks must be measured with a tape measure or marked with rods.
- The tracks must not have any significant cavities or heights since this may distort the spreading pattern.

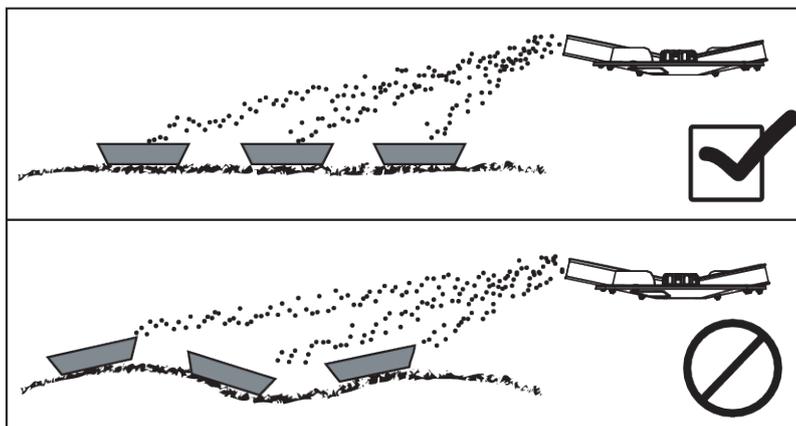


Fig. 2: Positioning the collecting vessels

- Make sure that the collecting vessels are placed on level ground. Collecting vessels set at an angle can cause measuring errors.
- Perform a turning test (see operating manual of your fertilizer spreader).
- Adjust metering valves on the left and right (see operating manual for your fertilizer spreader).
- Note down the start settings in chapter 4 *Performing a spreading test*.

3 Definition of the terms "triangular spreading pattern" and "trapezoidal spreading pattern"

What is a triangular spreading pattern?

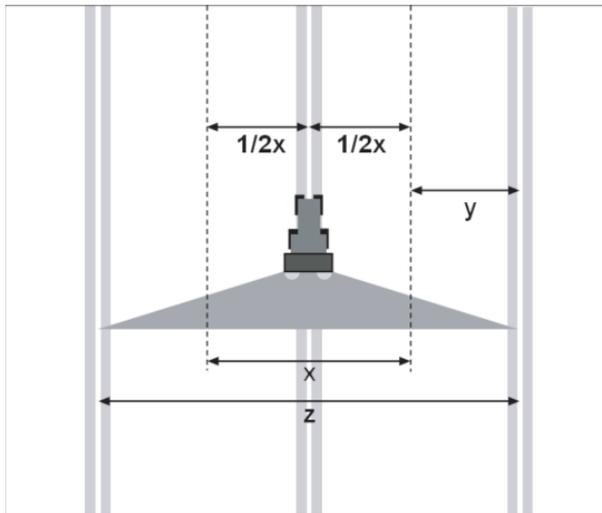


Fig. 3: Triangular spreading pattern

[[x]] Working width

[[z]] Total spreading width

[[y]] Overlap zone

The flat sloping spreading flanks and the resulting large overlap zones are characteristic of a so-called triangular spreading pattern. With this pattern, the fertilizer is spread significantly further than the actual working width, depending on the working width and fertilizer into the next track.

Due to this characteristic, this spreading pattern is less susceptible to influences such as:

- Side wind,
- Humidity,
- Changed fertilizers and quality.

These triangular spreading patterns are usually achieved with fertilizers with very good flight properties (such as calcium ammonium nitrate).

What is a trapezoidal spreading pattern?

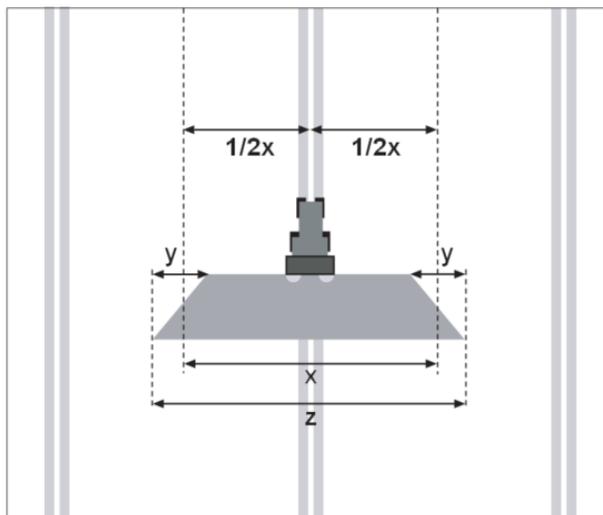


Fig. 4: Trapezoidal spreading pattern

[[x]] Working width

[[z]] Total spreading width

[[y]] Overlap zone

The steeply sloping spreading flanks and the resulting partially very small overlap zones are characteristic of a so-called trapezoidal spreading pattern. With this pattern, the fertilizer is spread only a little further than the actual working width.

Due to this characteristic, this spreading pattern is more susceptible to influences such as:

- Side wind,
- Humidity,
- Changed fertilizers and quality.

These trapezoidal spreading patterns result from fertilizers with very good flying properties and large working widths (e.g. 36 m), from fertilizers with less good flying properties (e.g. light or angular fertilizers)

4 Performing a spreading test

4.1 Conduction of a spreading test with one pass



We recommend the layout for one pass to quickly check the fertilizer distribution. More accurate results are provided by the layout plan for two passes, see *4.2 Conduction of a spreading test with two passes*

- Test area length 60 - 70 m

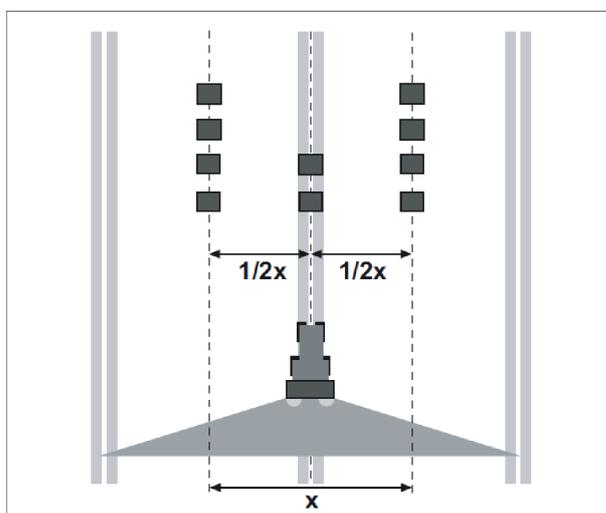


Fig. 5: Layout for one pass

Preparing the pass:

- Select a similar fertilizer from the same fertilizing group from the fertilizing chart and set the spreader accordingly.
- Adjust the mounting height of the mineral fertilizer spreader according to the specifications in the fertilizing chart.
- Check the spreading elements (spreading discs, spreading vanes, outlet) for correct functioning and completeness.
- Place four collecting vessels one in front of another at a distance of 1 m in the overlap zones (between the tracks) and two collecting vessels in the track.

Performing a spreading test with the desired travel speed and metering quantity for the application:

- Open the metering valves 10 m upstream of the collecting vessels.
- Close the metering valves 30 m downstream of the collecting vessels.
- Spread on both sides.

 **CAUTION!**

Caution when spreading urea with urease inhibitor

When a layer of fertilizer develops in the spreading vane, the spreading characteristics and transverse distribution may change.

- ▶ Carry out the inspection only after approx. 300 kg of urea has been spread per disc and a possible layer has developed.

4.2 Conduction of a spreading test with two passes



We recommend the layout plan for two passes for all configurations.

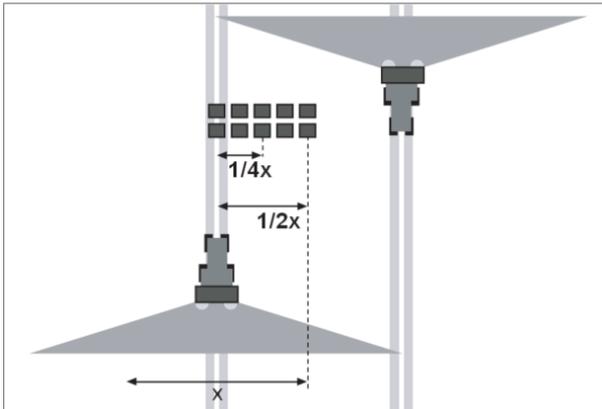


Fig. 6: Transverse distribution

Preparing the pass:

- Select a similar fertilizer from the same fertilizing group from the fertilizing chart and set the spreader accordingly.
- Adjust the mounting height of the mineral fertilizer spreader according to the specifications in the fertilizing chart.
- Check the spreading elements (spreading discs, spreading vanes, outlet) for correct functioning and completeness.
- Set up all 10 collecting vessels at even distances according to the sketch. Place 2 collecting vessels each in the center of the track, in the overlap zone and in the center in between.

Performing a spreading test with the desired travel speed and metering quantity for the application:

- Open the metering valves 10 m upstream of the collecting vessels.
- Close the metering valves 30 m downstream of the collecting vessels.
- Spread on both sides.

⚠ CAUTION!

Caution when spreading urea with urease inhibitor

When a layer of fertilizer develops in the spreading vane, the spreading characteristics and transverse distribution may change.

- ▶ Carry out the inspection only after approx. 300 kg of urea have been spread per disc and a possible layer has developed.

4.3 Conduction of a spreading test with three passes

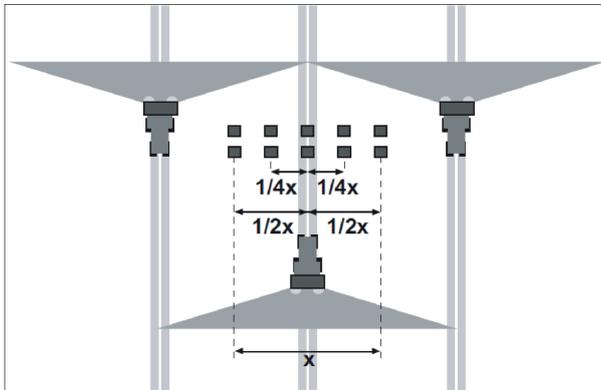


Fig. 7: Layout for three passes

Preparing the pass:

- Select a similar fertilizer from the same fertilizing group from the fertilizing chart and set the spreader accordingly.
- Adjust the mounting height of the mineral fertilizer spreader according to the specifications in the fertilizing chart.
- Check the spreading elements (spreading discs, spreading vanes, outlet) for correct functioning and completeness.
- Set up all 10 collecting vessels at even distances according to the sketch. Place 2 collecting vessels each in the center of the track, in the overlap zone and in the center in between.

Performing a spreading test with the desired travel speed and metering quantity for the application:

- Open the metering valves 10 m upstream of the collecting vessels.
- Close the metering valves 30 m downstream of the collecting vessels.
- Spread on both sides.

⚠ CAUTION!

Caution when spreading urea with urease inhibitor

When a layer of fertilizer develops in the spreading vane, the spreading characteristics and transverse distribution may change.

- ▶ Carry out the inspection only after approx. 300 kg of urea has been spread per disc and a possible layer has developed.

5 Evaluating the results and correcting them if necessary

Test result A

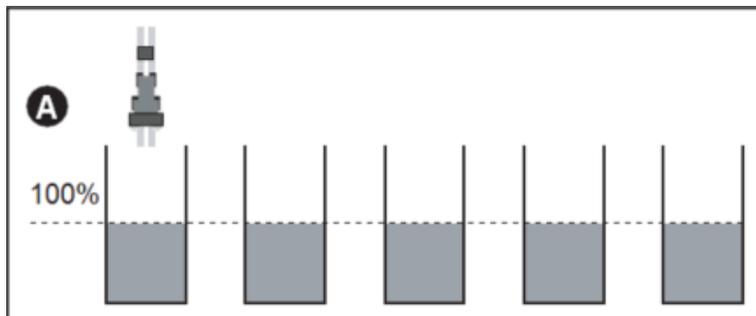


Fig. 8: Test result A

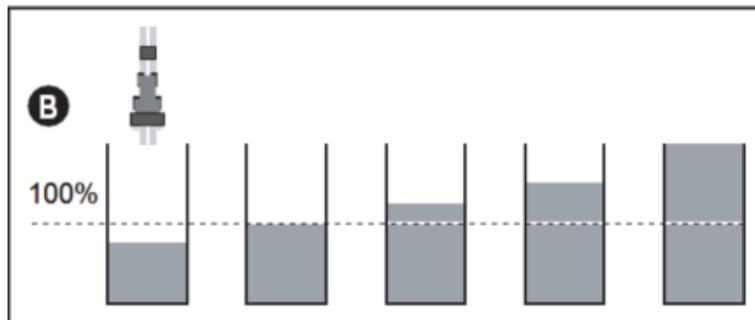
[[A]] All measuring tubes contain the same amount.

Examples for the correction of the spreader setting:

Fertilizer distribution	Measure, test
With spreading result [A], even distribution (permissible deviation ± 1 graduation mark)	Settings are OK



Note that a **deviation of ± 1 graduation mark** corresponds to the measurement deviation and is not a problem.

Test result B*Fig. 9: Test result B*

[[B]] Too much fertilizer in the overlap zone.

Examples for the correction of the spreader setting:

Fertilizer distribution	Measure, test
With spreading result [B], too much fertilizer in the overlap zone.	Select setting of feed point sooner (e.g. feed point adjustment from 5 to 4).

Test result C

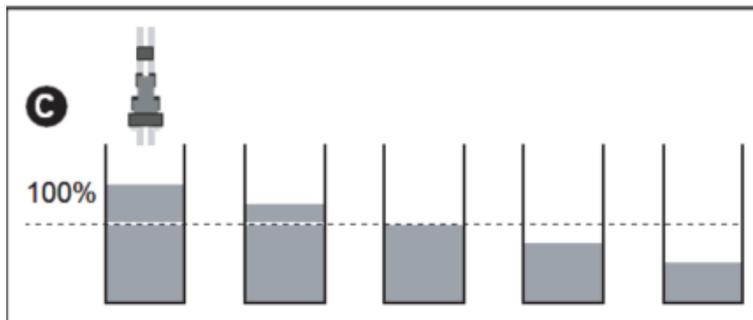


Fig. 10: Test result C

[[C]] Too little fertilizer in the overlap zone.

Examples for the correction of the spreader setting:

Fertilizer distribution	Measure, test
With spreading result [C], too little fertilizer in the overlap zone.	Select setting of feed point later (e.g. feed point adjustment from 4 to 5).

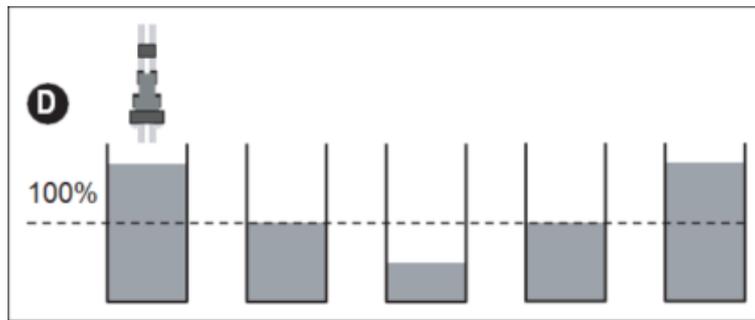
Test result D

Fig. 11: Test result D

[[D]] Too little fertilizer between the track and the overlap zone.

Examples for the correction of the spreader setting:

Fertilizer distribution	Measure, test
With limited working width and with fertilizers with good flying properties, large overlap zones result (spreads approximately into the next track). Objective: Triangular spreading pattern	Select setting of feed point later (e.g. feed point adjustment from 8 to 9).
	Increase PTO speed setting (e.g. adjustment from 540 to 570 rpm).
Reason: Total spreading width too small, therefore higher speed. Due to the higher speed, the fertilizer is released from the disc sooner, therefore select the feed point later.	
With larger working widths of approx. 24 m and more and with fertilizer with poor flying properties, small overlap zones result (spreads slightly wider than the working width). Objective: Trapezoidal spreading pattern	Select setting of feed point sooner (e.g. feed point adjustment from 9 to 8).
	Reduce PTO speed setting (e.g. adjustment from 570 to 540 rpm).
Reason: Total spreading width too large, therefore lower speed. Due to the lower speed, the fertilizer is released from the disc later, therefore select the feed point sooner. If the deviations are relatively small, a speed reduction only without feed point adjustment may also be sufficient.	



Always test step-by-step: First feed point, then the speed.

Test result E

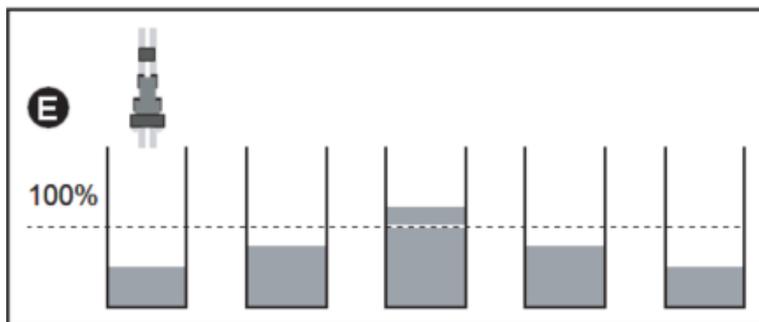


Fig. 12: Test result E

[[E]] Total spreading width too small.

Examples for the correction of the spreader setting:

Fertilizer distribution	Measure, test
With spreading result [E], total spreading width too small.	Increase PTO speed setting (e.g. adjustment from 540 to 570 rpm).
	Fertilizer not suitable for working width



However, only take these measures in the event of over-fertilization of two graduation marks. Otherwise, please apply the measures from test result C.



In case of any queries or problems, our test hall is available for you at testhalle@rauch.de and +49 (0) 7221 985-254.

RAUCH Streutabellen
RAUCH Fertilizer Chart
Tableaux d'épandage RAUCH
Tabele wysiewu RAUCH
RAUCH Strooitabellen
RAUCH Tabella di spargimento
RAUCH Spredetabellen
RAUCH Levitystaulukot
RAUCH Spridningstabellen
RAUCH Tablas de abonado



<https://streutabellen.rauch.de/>



RAUCH Landmaschinenfabrik GmbH

Victoria Boulevard E 200
77836 Rheinmünster · Germany



info@rauch.de · www.rauch.de

Phone +49 (0) 7229/8580-0