



# Translation of the original operating manual

# *ES 100 M3 Special*

**Read carefully before initial operation!**

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Bezeichnung:  
Modell:  
Prod.Nr.:  
Gewicht:  
Baujahr:



**Order no.: 00600-3-744**

# ***It may NOT***

***seem inconvenient and unnecessary to read and observe the operating instructions. It is not enough to hear and see from others that an implement is good, and then to buy it and believe that everything takes care of itself. The person concerned would then not only cause damage to himself, but also make the mistake of assuming that the cause of any problems is due to the implement, instead of himself. To ensure success, one has to go into the spirit of things, and instruct oneself about the purpose of all equipment on the implement and gain experience with its handling. Only then can one be satisfied both with the implement and oneself. These operating instructions aim to achieve this.***

***Leipzig-Plagwitz 1872***

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# 1 EC Declaration of Conformity

In compliance with Directive 2006/42/EC

The manufacturer APV - Technische Produkte GmbH,  
Dallein 15, AT-3753 Hötzensdorf hereby declares that the product

single disc spreader "ES 100 M3 Special" with digital and speed-controlled module,

Implement type designation / serial no. (see handover declaration and title page)

to which this declaration of conformity refers, complies with the relevant basic safety and health requirements of EC Directive 2006/42/EC as well as the requirements of other relevant EC Directives.

**2004/108/EC EMC Directive**  
**2006/42/EC Directive**

If applicable: Title / Number / Current version of the other EC Directives

For proper implementation of the safety and health requirements mentioned in the EC Directives, the following standards and / or technical specifications were taken into account:

**EN 14018 Agricultural and forestry machinery – Seed drills – Safety**  
**EN 14982 Agricultural and forestry machinery – Electromagnetic compatibility**  
**EN 349 Safety of machinery – Minimum gaps to avoid crushing of parts of the human body**  
**EN 60204-1 Safety of machinery – Electrical equipment**  
**EN 953 Safety of machinery – Guards**  
**ISO 12100 Safety of machinery; General principles for design; Risk assessment and risk reduction**  
**ISO 13857 Safety of machinery; Safety distances**

If applicable: Title / Number / Current version

Your CE contact person at APV is Mr. Jürgen Schöls.  
He can be reached at the telephone number +43(0)2913-8001.

Dallein, 08/2019  
City, Date



Signature

Ing. Jürgen Schöls  
Management

## 2 Identification of the implement

### Clear identification

The spreader can be clearly identified by the following information on the type plate:

- Designation
- Model
- Production number

### Position of the type plate

The type plate is located on the steel rack, on the right side above the safety bar.

### Figure with the type plate

The image shows the layout of the type plate:



The data on the type plate have the following meaning:

No.	Meaning
1	Designation
2	Model
3	Production number
4	Weight
5	Year of manufacture

Fig.: 1

## 3 Service

Please contact our service address in the following cases:

- If you still have questions regarding the handling of the spreader despite the information provided in this operating manual
- For spare parts orders
- To order maintenance and repair work

APV - Technische Produkte GmbH  
 HEADQUARTERS  
 Dallein 15  
 A-3753 Hötzelsdorf  
 AUSTRIA

Telephone: +43 (0) 2913 8001  
 Fax: +43 (0) 2913 8002  
 Email: [service@apv.at](mailto:service@apv.at)  
 Web: [www.apv.at](http://www.apv.at)

## 4 Warranty

Please check the implement for any transport damage immediately upon receipt. Later claims regarding transport damage can no longer be considered.

We provide a one-year factory warranty as of the date of delivery (your invoice or the delivery slip serve as a warranty certificate).

This warranty is applicable for cases of material or construction faults and does not include parts that are damaged by normal or excessive wear.

The warranty expires

- if damage is caused by external forces.
- in cases of operating errors.
- if the prescribed requirements are not met.
- if the implement is modified, expanded or equipped with third-party spare parts without our permission.
- if the implement is cleaned with water.
- if the spreader is used for snow and ice removal.

## 5 Accident prevention and safety instructions

**This chapter contains general rules of conduct for the intended use of the implement and safety-related information that should always be observed for your personal safety.**

The general accident prevention regulations of the respective countries must be observed.

The implement may only be used by persons who are informed of the hazards.

### 5.1 Intended use

- The single disc spreader is used to spread agricultural seed. It is designed solely for normal use in agricultural operations (intended use).
- Any other use is considered to be non-intended. The manufacturer is not liable for any resulting damage, the operator alone bears the associated risk.
- Intended use also includes compliance with the conditions for operation, maintenance, and repairs prescribed by the manufacturer.
- The implement may only be used, maintained and repaired by persons who have relevant experience and were instructed on the risks. The safety instructions must also be handed over to other users.
- The single disc spreader may not be used in the rain or in a thunderstorm.
- The applicable accident prevention regulations as well as the other generally safety-related, occupational health and road traffic regulations must also be observed.
- The manufacturer is not liable for any damage resulting from unauthorised modifications and the use of components and auxiliary parts.

## 5.2 General safety-related instructions and accident prevention regulations

- Check the implement and the tractor for road and operational safety before every use!
- The implements must be checked regularly by the operator (before every use) for any fractures and cracks, chafe marks, leaks, loose bolts and connections, vibrations, unusual sounds, and to ensure they function correctly.
- Observe the generally applicable safety and accident prevention regulations!
- The warning and information signs applied to the implement provide important instructions for safe operation, observe them for the sake of your own safety!
- Observe the respective regulations when using public roads!
- Before starting work, get to know all of the equipment and operating elements as well as their functions. It is too late to do so during operation!
- The view on the mounted single disc spreader and the hazardous movement area must be clear to check the procedure.
- The user should wear close-fitting clothing. Avoid wearing loose clothes!
- Hearing protection should be used, if necessary.
- Keep the implements clean to reduce the risk of fire!
- Check the surrounding area before starting up and operating the implement! (Children!) Ensure sufficient visibility!
- It is not allowed to carry passengers on the implement during operation and transport!
- The implement must be coupled according to the instructions and only onto the specified devices!
- The instructions concerning assembly as well as the requirements concerning the tractor as specified in the operating manual are to be observed.
- Special care must be taken when coupling and uncoupling implement to and from the tractor!
- During assembly, the operator must ensure that the requirements for the tractor specified in the operating instructions are met and that the connections specified in the operating instructions are made correctly.
- When mounting the single disc spreader, the operator must ensure that there is a metallic connection made to the tractor.
- Always attach ballast weights at the intended attachment points according to the specifications!
- Observe the permissible axle load, total weight and transport dimensions!
- Transport equipment, e.g. lighting, warning signs and any protective equipment, must be checked and mounted!
- Triggers for fast couplers must be hanging loosely and must not trigger themselves when lowered.
- Never leave the driver's platform while driving!
- The driving behaviour, steering and braking capacity are also affected by mounted or towed implements and ballast weights. For this reason, always ensure sufficient steering and braking capacity!
- When driving in curves, take account of the wide radius and/or the centrifugal mass of the implement!
- The implement may only be operated when all of the protective devices are installed and in safety position!

- When performing the work steps, the tractor's speed must be maintained as specified in the operating instructions. This can be between 1 and 20 km/h depending on the seed.
- The operator must ensure that no one is in the vicinity of the single disc spreader when it is being moved by the tractor's hydraulic system. Visual check by the driver. The operator must ensure that the single disc spreader cannot lower when driving on the roads (shut-off valve on the tractor's hydraulic system or similar).
- No other persons may be in the hazard area of the single disc spreader. Visual check by the driver!
- It is forbidden to stand in the working area of the implement!
- Do not stand near rotating and swivelling parts of the implement!
- Hydraulic folding frames may only be actuated when nobody is standing in the swivelling range.
- There are pinch and shear points on externally powered (e.g. hydraulic) parts!
- On implements with manual folding, always ensure that the implement is stable!
- For implements that are driven rapidly with soil-driven tools: Danger after lifting due to the still rotating centrifugal mass! Only approach the implement when it has come to a standstill!
- Before exiting the tractor, lower the implement onto the ground, switch off the motor and remove the ignition key!
- Standing between the tractor and the implement is forbidden unless the vehicle is secured against rolling away using the parking brake and/or with wheel chocks!
- Folded frames and lifting devices must be locked in transport position!
- Packer catch arms must be swivelled in and locked before road transport!
- Lock the track markers in transport position!
- When filling the hopper with slug pellets or similar toxic agents, only fill as much as is needed in the near future. Protective clothing, safety gloves, and face and eye protection must be worn during the filling procedure.
- Observe the warning information provided by the manufacturer on the packaging. The seed grains used in your spreader can be toxic!
- Always keep hands, clothing etc. away from rotating parts!
- Keep your distance when the implement is switched on!
- Never look into the spreading cone!
- Product residues should be returned to the original packaging. Residues must not be released into the environment.
- Authorised crop protection products are not known to have negative effects on the materials of the implement.
- Maintenance, repair, and cleaning work as well as the elimination of malfunctions should always be performed when the drive is switched off and the motor is at a standstill!

### 5.3 Mounted implements

- Before mounting and dismounting implements on the three-point linkage, move the operating devices into the position that excludes unintentional lifting or lowering!
- For three-point mounting, the mounting categories of the tractor and the implement must match or be adapted!

- There is a risk of injury due to crushing and shearing points in the area of the three-point linkage!
- Do not stand between the tractor and the implement when actuating the external controls for the three-point mounting!
- When the implement is in transport position, always ensure that the tractor three-point linkage is sufficiently locked to the sides!
- When driving on roads with the implement lifted, the operating lever must be locked against lowering!

#### **5.4 Maintenance**

- Maintenance, repair, and cleaning work as well as the elimination of malfunctions should always be performed when the drive is switched off and the motor is at a standstill! – Remove the ignition key! – Switch off the implement!
- Check the nuts and bolts regularly for tight fit and retighten if necessary!
- When performing maintenance on the lifted implement, always ensure safety through suitable support elements!
- When changing work tools with sharp edges, always use suitable tools and gloves!
- Properly dispose of oils, grease and filters!
- Always cut the power supply when working on the electrical system!
- When performing electrical welding work on the tractor and mounted implement, disconnect the cable on the generator and the battery!
- Spare parts must at least comply with the technical requirements specified by the implement manufacturer! This is ensured with original parts!
- Do not clean the implement with water. It is recommended to clean the implement with compressed air. While doing this, personal protective equipment should be worn if necessary.
- Cleaning must be carried with the implement lowered, shut down and secured to prevent it being switched on again.
- Working under the implement is forbidden!
- The implements must be checked regularly by the operator (before every use) for any fractures and cracks, leaks, chafe marks, loose bolts and connections, vibrations and to ensure they function correctly.

## 6 Safety signs

Observe this sticker on the implement! It informs you of special dangers!



Read and observe the operating manual before operating the implement!



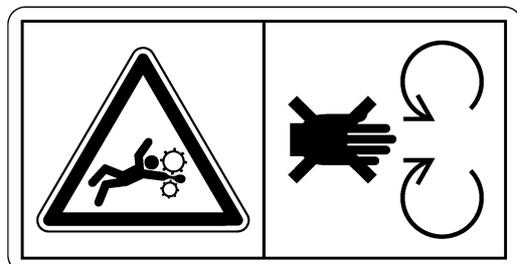
Operating errors can lead to serious injuries!



Danger due to thrown parts; observe the safety distance!



Risk of injury due to moving parts. Switch off the implement and disconnect the power supply when handling!



Maintain a safe distance from rotating implement parts!

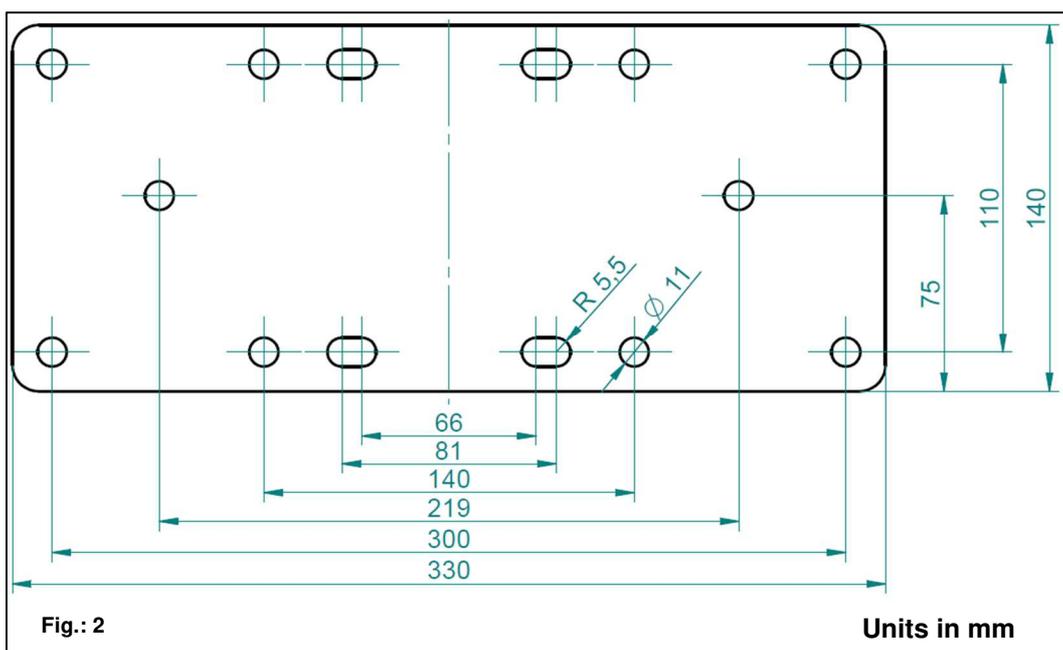


Hot surface!  
Do not touch!

## 7 Technical data

Designation:	ES 100 M3 SPECIAL
Hopper content:	105 litres
Weight:	30 kg
Dimensions (H x W x D):	900 x 520 x 600 mm
Max. working width:	28 m (with 12 % lateral distribution coefficient)
	Tested by Irstea with Metarex slug pellets from De Sangosse
Max. spreading width:	31 m (with Metarex slug pellets)
Power supply:	12 V, 25 A
Motor data (rated output):	170 watt
Power consumption of the motor:	25 amps when starting, 14 amps during normal operation
Speed range max.:	2600-3000 rpm
Mount category:	Cat. II

Hole pattern on the counter plate:



## 8 Basic information

### 8.1 Layout and mode of operation

The single disc spreader "ES 100 M3 Special" is a small seed spreader with a capacity of 105 litres.

The spreading disc is driven by a 12-V electric motor, which is regulated using the controls. The speed of the spreading disc and therefore the working width can be comfortably regulated from the driver's seat using the controls. Power can be supplied to the control box either through the 3-pin standard socket or optionally directly from the battery.

### 8.2 Mounting on the tractor

With the type of mounting shown, you bolt on the linkage drawbar between your ES 100 M3 Special and the supplied counter plate. You should use bolts with a diameter of 10 mm. Bolt the top link bracket onto the top link plate and fix the top link of your towing vehicle with the pin.



Fig.: 3



Fig.: 4

### 8.3 Mounting on an implement

To mount the ES 100 M3 Special on an implement, we recommend using the counter plate. Use it to attach your spreader on the frame of the mounted implement.

To achieve the maximum working width and also the corresponding distribution, the implement must be mounted at a height of 1.5 metres.



Fig.: 5

## 8.4 Attachment of the control box

Fasten the standard supplied bracket in the tractor cab with two bolts. Stow the excess cable in the driver's cab to avoid pinching.



**TIP:** Pay attention to the angle at which you look at the control box to be able to read the display optimally. If necessary, bend the bracket slightly to adjust the angle as required.



Fig.: 6

## 8.5 Electrical connections

The standard supplied cable can be directly connected to the 3-pin standard socket in the cab. The other end is connected to the control box.

The 4-pin cable from the control unit is also connected to the control box.

The fuse (20 A) is located on the right side of the control box.



**TIP:** If your tractor or towing vehicle does not have a 3-pin standard socket, you must perform the wiring yourself to the battery.

To do so, you need a cable (motor vehicle cable set (3m), item no.: 00410-2-027 or tractor cable set (8m), item no.: 00410-2-022), which you can purchase from us as an accessory, see Points 15.5 and 15.6.

The cable routing is performed as follows:

The cable (motor vehicle or tractor) is screwed directly on the terminals of the battery on the battery side, and at the other end, a 3-pin standard socket is installed.



**CAUTION:** If these instructions are not observed, damage may be caused to the control box!



**IMPORTANT NOTE:** For safety-related reasons, disconnect the controls after using the implement!

## 8.6 Emptying and removing the hopper

To empty the hopper, unscrew the screw plug on the emptying nozzle at the front of the hopper, and hold a container, sack or other vessel underneath. To ensure complete emptying, use the emptying function of the control box.

In rare cases, it is necessary to remove the plastic tank for cleaning purposes. To do so, bend the latches inwards using a small screwdriver and pull out the hopper upwards.

Before you put the hopper back on, bend the latches back outwards and then put the hopper on. At the end, seal the cone again with silicone to prevent the penetration of water.



Fig.: 7



**TIP:** To remove even the last seed residues, clean out the hopper with compressed air. Alternatively, you can suck out the seed residues with an industrial vacuum cleaner.

## 8.7 Control box

The ES 100 M3 Special has a control box with a hermetically sealed keyboard membrane. On the bottom side, you will find a 3-pin standard socket, which is already familiar to you from your tractor cab, for the power supply, and a 4-pin plug for connection to the spreader as well as a 12-pin plug for the sensors. Moreover, you will find the fuse (20A) on the right side.

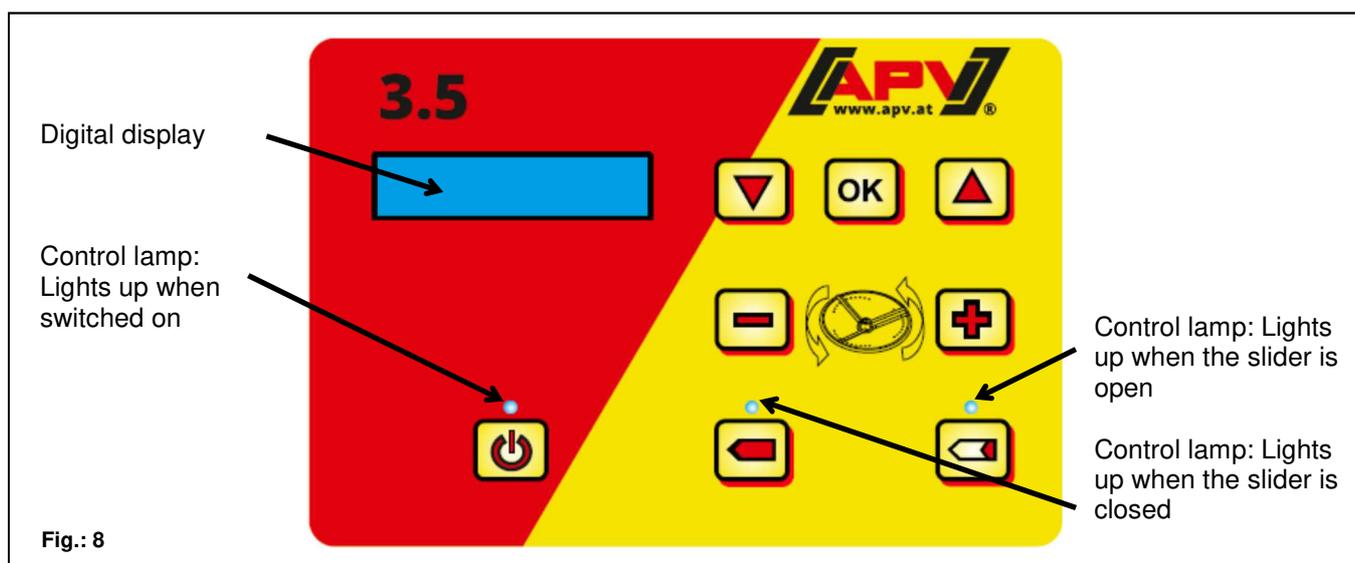


Fig.: 8

Button	Designation	Use
	On/Off button	Switches the implement on or off
	Arrow button down	Moves the cursor down
	Arrow button up	Moves the cursor up
	Minus button	Reduces the speed of the spreading disc
	Plus button	Increases the speed of the spreading disc
	Slider closed	Close slider
	Slider open	Open slider
	OK button	Confirms the selection

- Press the On/Off button.
  - The controls are switched on and the control lamp above the button lights up.
- Using the plus and minus buttons, set the desired speed for the spreading disc.
- Start driving and open the slider using the "Slider open" button.
  - The control lamp for "Slider open" lights up above the button.
  - The spreading material trickles onto the spreading disc and is distributed accordingly depending on the speed.
- When stopping, press on the "Slider closed" button.
  - The slider is closed and the control lamp for "Slider closed" lights up above the button.
- When leaving the field, switch off the control box using the On/Off button.

## 8.8 Slider sensor (available as an accessory)

For more information, see Chapter 15 Accessories.

By means of various sensors, the slider for the setting motor can be automatically opened or closed when lifting and lowering an implement.

The sensor is connected to the 12-pin plug on the control box. As soon as the sensor is plugged, the control box detects the sensor automatically and now uses it to close/open the slider for the setting motor.



**TIP:** The slider can still be opened or closed manually (by pressing the slider buttons).

If the working position is to be turned, the OK button and the ON/OFF button must be pressed simultaneously when switching on.

The following appears on the display:

**Three-point linkage  
signal**



**NOTE:** The slider is only opened when the spreading plate is rotating!

## 9 Main display

**3.5 V3.16  
www.APV.at**

Switch-on message: Is shown during the switch-on procedure and shows the type and device version.

The software version can be very helpful in case of service or for Customer Service.

**Speed: 1,000**

Set motor speed in rpm

After switching on the device, you can use the "Up arrow", "Down arrow" or "OK" buttons to move through the menu:

Each time the arrow buttons are pressed in the menu, you move one menu item up or down.

**The following menu points are available:**

**Area  
calculation**

**Calibration test**

**Emptying**

**Daily counter**

**Area:**

**Operating hours:**

**576.23**

**Operating voltage:  
12.7 V**

**Motor1: 11.5A**

**Select language**

Using the arrow buttons, select a menu item and confirm with OK.

Here, you can use the arrow buttons again to select a submenu (if available) and confirm with OK. In doing so, you also switch to the value setting mode.

Values can be set using the arrow buttons. Always confirm the set value with OK.

If no other settings are made, the display goes back to the main display.

## 9.1 Working on the field

If you want to interrupt the spreading procedure for a longer period of time, switch off the spreader using the ON/OFF button. When switching on the device again by pressing the ON/OFF button, you will start immediately in the main menu. Right after that, the following menu will be shown:

**Speed:** 1000

The spreading disc only starts rotating after the plus button is pressed one time, and then the speed is shown on the display.

You can use the plus/minus buttons to set the speed of the motor according to the desired spreading width.

## 9.2 Area calculation

This is an additional function for which you must enter the correct parameters before spreading, e.g. the spreading width and the forward speed that is shown on your tachometer. These parameters are also required if you want to perform a calibration test with your ES 100 M3 Special.

**Working width?**  
12.0m

Working width: Press OK and use the arrow buttons to select the desired value.

**Speed?**  
10km/h

Speed: Press OK and use the arrow buttons to select the desired value.

**Reset  
area calc.?** OK

If you press OK here, the hectare counter will be reset to zero.

## 9.3 Calibration test

**Calibration test**

Go to the calibration test menu item and set the following values:

The respective settings are made with the arrow buttons.

If you want to change a value, select it with the OK button and change the value with the arrow buttons. Confirm the value with the OK button.

**Speed:**

Here, the speed must be entered.



**TIP:** The values for this can be found in the setting charts (Chapter 11).

**Start test?**

The calibration test is started by pressing the OK button.



**NOTE:** The calibration test runs for 1 minute. To truly spread the desired spread rate, we recommend repeating the calibration test until the values (kg/min) have evened out or the differences are minimal.  
The slider is only opened when the spreading plate is rotating!

## 9.4 Emptying

**Emptying**

By confirming with the OK button, you start the emptying procedure, the spreading disc starts rotating and the slider is automatically opened.



**TIP:** Open the metering slider completely to enable faster emptying.

The emptying procedure can be stopped at any time using the arrow buttons.

## 9.5 Daily counter

Here, the area and operating hours that were accrued since the last reset are displayed.

**Area:** 25 ha

Shows the spread area.

**Operating hours:**  
0.00h

Shows the operating hours.

**Reset?**

If you press OK here, the area and the operating hours are set to zero.

## 9.6 Area

Area: 25 ha

Here, the total spread area is shown.



**NOTE:** This value cannot be set to zero.

## 9.7 Operating hours

Operating hours:  
0.00h

Shows the total operating hours.



**NOTE:** These values cannot be set to zero.

## 9.8 Operating voltage

Operating voltage:  
12.7V

Here, the current operating voltage is shown.

## 9.9 Motor1

Motor1: 0.0A

Shows the power consumption of the spreading plate motor in amperes.

## 9.10 Select language

Select language?

Confirm with OK, use the arrow buttons to select the desired language and confirm with the OK button.

## **Control box 3.5 (language selection)**

As of software version V3.16, the following languages are available for selection:

- German (Deutsch)
- English (English)
- French (Français)
- Czech (Česky)
- Dutch (Nederlands)
- Danish (Dansk)
- Hungarian (Magyar)
- Polish (Polski)

## **10 Settings**

### **10.1 Spreading width**

The spreading width depends on the density and the shape of the seed as well as the speed of the spreading disc. The single disc spreader is designed such that it can spread seed (slug pellets) uniformly over a width of up to 28 m. For this to succeed, the battery and the alternator must be in good condition. The precise settings for the spread rate, working width etc. can be found in the setting chart in Chapter 11.

The spreader must be mounted **1.5 m above the ground** to achieve optimal spreading density and the maximum working width.



**NOTE:** If the ES 100 M3 Special is mounted on implements with small working widths and the seed is to be spread directly in / in front of the roller, the spreader can also be slanted slightly downwards. However, it must be noted that the hopper can only be completely emptied when it is in a horizontal position!



**TIP:** A precision dispersion plate is available as an accessory for such special applications. This is suitable for small working widths (up to 4 m) and causes the seed to be spread exactly on the roller, for example.

## 10.2 Regulation of the seed rate

### Regulating the spread rate:

- The required settings can be found in the corresponding setting chart.
- Loosen the knurled nut and set the metering slider to the required scale position.  
Position 0: closed; Position 10: fully open.
- Fix the knurled nut again.



## 10.3 Agitator

Since driving of the agitator with two dowel pins is generally not necessary, the agitator was only equipped with one agitator pin ex factory. If, however, you should require stronger agitation (e.g. for grass etc.), the following must be performed: The dowel pins supplied as a standard are attached on the bottom agitator pin of the agitator and this increases the efficacy of the agitator.



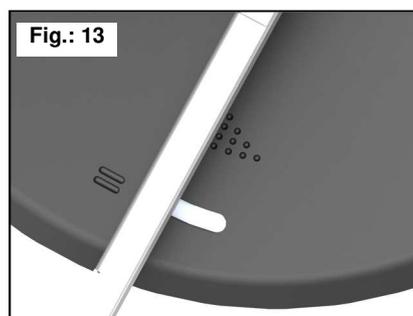
## 10.4 Spreading disc, lateral distribution, throwing vanes

The spreading disc must rotate counterclockwise. The spreading plate has 2 throwing vanes that are positioned not quite parallel to each other. They are only slightly adjustable, since their arrangement and shape are already trimmed for perfect lateral distribution. The spreading cone is only corrected using the point of impact adjustment and the throwing vanes. To achieve optimal lateral distribution for the selected working width, you must then still adjust the setting of the throwing vanes on the spreading plate. When doing so, be sure to disconnect the power supply from the control box! To adjust the throwing vanes, loosen them and turn the throwing vane to the required position. Then tighten all of the bolts again!

There are marks directly on the spreading plate, which can be used to see the current position of the throwing vanes:



Throwing vane I at Point 4



Throwing vane II at Point 4

The table shows the settings for slug pellets:

Slug pellets 	Working width	Throwing vane I	Throwing vane II
	<20m	Point 1	Point 1
	20m	Point 2	Point 2
	24m	Point 3	Point 3
	28m	Point 4	Point 4

The following general rule applies for all seed types: if the spreading density is higher in the outer area than in the middle, the throwing vanes must be adjusted further towards "Point 1".



**NOTE:** The slider is only opened when the spreading plate is rotating.

## 10.5 Point of impact adjustment

The point of impact adjustment can be used to adjust the entire spread pattern by 20° in both directions. This can be important for some spreading materials, e.g. to avoid having to adjust the throwing vanes. For example, if the spread pattern is turned by 15° to the right, the point of impact adjustment is turned by 15° to the left. If you move it further to the right, a boundary spreading function can also be obtained.



## 11 Setting charts

These tables can be used as reference values. However, they cannot be used in the same way everywhere as many factors play a role and strong changes can occur (e.g. thousand grain weight, seed moisture content, changes in flow behaviour, and much more).

<b>Gras</b> <b>Grass</b> <b>Herbe</b>  Lolium perenne (with dowel pins mounted at the bottom)				
<b>Speed (working width)</b>	<b>Slider position</b>			
	<b>3</b>	<b>5</b>	<b>8</b>	<b>10</b>
<b>350 (1 - 2m)</b>	0.13	0.38	1.23	1.48
<b>1600 (~ 4m)</b>	0.65	1.72	3.05	3.34
<b>2800 (~ 6m)</b>	0.84	1.82	2.88	3.20
<b>3000 (~ 7m)</b>	0.85	1.86	2.89	3.22
	<b>Weight in kg/min</b>			

<b>Senf</b> <b>White mustard</b> <b>Moutarde</b>  Sinapis Alba				
<b>Speed (working width)</b>	<b>Slider position</b>			
	<b>3</b>	<b>5</b>	<b>8</b>	<b>10</b>
<b>350 (1 - 2m)</b>	0.84	1.82	3.25	3.39
<b>1600 (~ 7m)</b>	1.19	2.53	4.21	4.53
<b>2800 (~ 14m)</b>	1.18	2.56	4.18	4.49
<b>3000 (~ 17m)</b>	1.25	2.67	4.44	4.74
	<b>Weight in kg/min</b>			

**White clover**  
**White clover**  
**Trèfle Blanc**

*Trifolium repens*

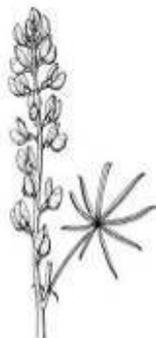


Speed (working width)	Slider position				
	1	3	5	8	10
350 (1 - 2m)	0.02	1.39	2.91	5.27	5.77
1600 (~ 7m)	0.08	2.00	3.79	6.09	6.66
2800 (~ 14m)	0.11	1.83	3.72	6.09	6.50
3000 (~ 17m)	0.12	1.97	3.99	6.31	6.97

Weight in kg/min

**Blue lupine**  
**Blue Lupine**  
**Lupin Bleu**

*Lupinus angustifolius*



Speed (working width)	Slider position			
	3	5	8	10
350 (2 - 3m)	0.24	0.63	1.45	1.47
1600 (~ 10m)	0.68	1.59	2.73	2.88
2800 (~ 20m)	0.72	1.55	2.77	2.83
3000 (~21m)	0.77	1.69	2.87	3.05

Weight in kg/min

**Radish**  
**Radish**  
**Radis**

*Raphanus raphanistrum*



Speed (working width)	Slider position			
	3	5	8	10
350 (1 - 2m)	0.49	1.29	2.29	2.02
1600 (~ 7m)	0.89	1.92	3.31	2.51
2800 (~ 14m)	0.89	1.97	3.26	2.68
3000 (~ 17m)	0.96	2.06	3.61	2.84

Weight in kg/min

**Phacelia**  
**Phacelia**  
**Phacélie**

*Phacelia tanacetifolia*



Speed (working width)	Slider position			
	3	5	8	10
350 (1 - 2m)	1.10	2.30	3.43	3.56
1600 (~ 5m)	1.43	3.02	4.47	4.45
2800 (~ 10m)	1.40	2.99	4.15	4.44
3000 (~ 12m)	1.47	2.73	4.56	4.65
Weight in kg/min				

**Luzerne**  
**Lucerne**  
**Lucerne**

*Medicago Sativa*



Speed (working width)	Slider position			
	3	5	8	10
200 (1 - 2m)	1.49	3.41	6.38	6.71
1400 (~ 6m)	1.93	4.31	7.26	7.37
2700 (~ 8m)	1.95	4.25	7.18	7.27
3000 (~ 11m)	2.07	3.22	7.52	8.35
Weight in kg/min				

**Buckwheat**  
**Buckwheat**  
**Blé Noir**

*Fagopyrum*



Speed (working width)	Slider position			
	3	5	8	10
350 (1 - 2m)	0.39	1.40	2.69	2.99
1600 (~ 12m)	0.79	2.19	3.72	3.49
2800 (~ 15m)	0.81	2.23	3.58	3.97
3000 (~ 17m)	0.90	2.35	3.94	4.33
Weight in kg/min				

**Vetch  
Vetch  
Vesce**

Vicia



Speed (working width)	Slider position			
	3	5	8	10
350 (1 - 2m)	0.53	1.81	3.14	3.44
1600 (~ 14m)	1.05	2.85	4.27	3.93
2800 (~ 17m)	1.13	2.87	4.31	4.37
3000 (~ 18m)	1.15	3.62	4.48	4.77

Weight in kg/min

**Red clover  
Red clover  
Trèfle Rouge**

Trifolium



Speed (working width)	Slider position			
	3	5	8	10
350 (1 - 2m)	1.29	3.08	5.55	5.93
1600 (~ 9m)	1.53	3.57	6.44	7.03
2800 (~15m)	1.65	3.82	6.53	6.93
3000 (~16m)	1.79	4.23	6.55	7.15

Weight in kg/min

**Metarex INOV  
Metarex INO  
Metarex TDS**

**Slug pellets  
Grains anti-limaces**



Speed (working width)	Slider position			
	3	5	8	10
350 (~ 6m)	0.39	1.70	3.43	5.15
1600 (~ 12m)	1.29	2.71	3.90	3.06
2800 (~ 21m)	1.31	2.77	3.60	3.14
3000 (~ 28m)	1.97	3.33	4.14	3.13

Weight in kg/min

**Schneckenlinsen**  
**Slug lentils**  
**Lentilles anti-**  
**limaces**



Speed (working width)	Slider position			
	3	5	8	10
350 (~ 5m)	0.79	2.07	3.85	4.22
1600 (~ 11m)	1.52	3.23	5.53	5.89
2800 (~ 22m)	1.52	3.38	5.43	5.78
3000 (~ 28m)	1.65	3.7	5.78	6.07

Weight in kg/min

**Allowin/Allowin**  
**Quattro**



Speed (working width)	Slider position			
	3	5	8	10
350 (~ 6m)	0.38	1.77	3.03	4.64
1600 (~ 12m)	1.21	2.84	3.82	3.31
2800 (~ 22m)	1.37	2.98	3.85	3.28
3000 (~ 28m)	2.26	3.30	3.76	3.13

Weight in kg/min

**Clartex Neo,**  
**Slugg OFF**  
**Xenon Pro**



Speed (working width)	Slider position			
	3	5	8	10
350 (~ 6m)	0.45	1.61	3.51	4.98
1600 (~ 12m)	1.35	2.79	3.95	3.12
2800 (~ 22m)	1.15	2.92	3.57	3.24
3000 (~ 28m)	1.59	3.39	3.81	2.94

Weight in kg/min



**TIP:** It can be sensible to check the settings for the spread rate from time to time. With large working widths, the wind velocity should be observed to prevent spreading errors.



**NOTE:** The maximum working width also depends on the battery voltage!

## 12 Controller messages

### 12.1 Notes

Display	Cause	Solution
<b>Operating voltage Not OK!</b>	Is displayed when the operating voltage is too low or fluctuates too strongly.	Minimise the consumers; check the battery; check the wiring; check the alternator.
<b>Implement is being switched off!</b>	Is displayed during the shutdown process. The message disappears after a few seconds.	

### 12.2 Errors

Display	Cause	Solution
<b>Error Slider 1!</b>	Is displayed when the wiring is faulty.	Check the cables and plugs.
<b>Motor not connected!</b>	Is displayed when the wiring is faulty.	Check the cables and plugs.
<b>Motor is overloaded!</b> —	Is displayed when the spreading disc cannot rotate.	Check whether there are objects blocking or impeding the agitator or spreading disc.  If your implement is equipped with two agitator pins, remove the upper one.
<b>Cable not OK!</b>	Is displayed when the wiring is faulty.	Check the cables and plugs.
<b>Electronics not OK!</b>	Appears when the electronics in the control box get too hot.	Please contact customer service.

## 13 Maintenance and care

### 13.1 General information

To maintain the implement in good condition even after a long service life, the following instructions must be observed:

- Original parts and accessories are designed especially for the machines or implements.
- Please note that spare parts and accessories not supplied by us have also not been tested and approved by us.
- The installation or use of such products can therefore possibly negatively change or impede the constructional properties of your implement. The manufacturer rules out any liability for damages resulting from the use of non-original parts and accessories.
- The manufacturer is not liable for any unauthorised modifications and the use of components and auxiliary parts.
- All bolted connections should be re-tightened at the latest after 3 operating hours and again after 20 hours, and then checked regularly. Loose bolts can cause significant consequential damage, which is not covered by the warranty.
- Do not clean the implement with water. Clean the implement with compressed air, however, make sure that the pressure is not too high. The paint can be damaged by cleaning with excessive pressure.
- During the winter, the implement should be protected against rust with an environmentally-friendly product.
- Park the implement protected from weather conditions.

## 14 Storage and disposal

To ensure that the spreader remains fully functional even if it is out of operation for longer periods of time, it is important to take precautions for storage.

This is how to prepare the spreader for storage:

1. Completely remove all seed from the spreader.
2. Clean the spreader inside and out.
3. Store the spreader in a dry place to prevent the formation of germs inside the implement.

The spreader must be stored in a dry place protected from weather conditions to ensure that it remains functional even if it is stored for a longer period of time.

Disposal of the spreader must be performed according to the local disposal regulations for machines.

## 15 Accessories

### 15.1 Chassis lifting unit sensor



**Order number:** Item no.: 00410-2-173

**Connection:** 12-pin plug on the control box

The slider on the ES 100 M3 Special is opened and closed automatically.

**Cable length:** 5 m

**Installation position:** Since most soil tillage implements are lifted and lowered during their operation, installing the sensor on the tractor's lifting arm is the best method (see image above). However, the sensor can also be attached at other positions that have mechanical movement of more than 50 mm. The distance between the sensor and the magnet should be approx. 5 mm. For semi-mounted soil tillage implements, the sensor can be installed on the chassis, because the lifting unit is not used in this case.

If the working position is to be turned, the OK button and the ON/OFF button must be pressed simultaneously when switching on.

The following appears on the display:

**Three-point linkage  
signal**

**Items included:** 1 sensor, 2 magnets incl. bolts, cable ties, 1 fastening plate, 2 PVC nuts for the sensor



**NOTE:** the sensor must not be bolted on too strongly (tension)!

## 15.2 Top link lifting unit sensor



Fig.: 17

**Order number:** Item no.: 00410-2-169

**Connection:** 12-pin plug on the control box

The slider on the ES 100 M3 Special is opened and closed automatically.

**Cable length:** 4 m

**Installation position:** Since most soil tillage implements are lifted and lowered during their operation, installing the sensor on the implement's three-point linkage is the best method. However, the sensor can also be attached at other positions that have mechanical movement. For semi-mounted soil tillage implements, the sensor can be installed on the chassis, because the lifting unit is not used in this case.

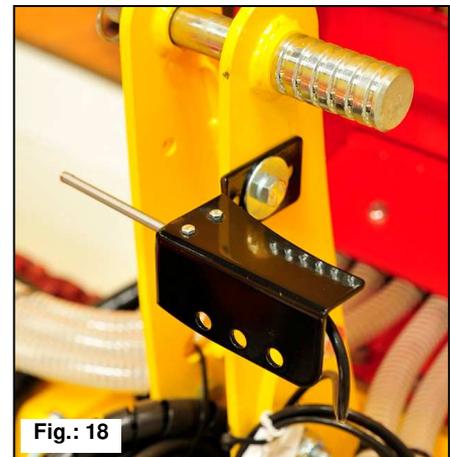


Fig.: 18

If the working position is to be turned, the OK button and the ON/OFF button must be pressed simultaneously when switching on.

The following appears on the display:

**Three-point linkage  
signal**

**Items included:** 1 sensor,  
1 fastening plate incl. fastening bolts



**NOTE:** the sensor must not be bolted on too strongly (tension)!  
The slider is only opened when the spreading plate is rotating!

### 15.3 7-pin signal cable



Fig.: 19

**Order number:** Item no.: 00410-2-154

**Connection:** 12-pin plug on the control box

**Cable length:** 1.5 m

**Scope of delivery:** 1 sensor cable (Amphenol)

A connection can be established from the tractor to the control box using the 7-pin cable. In this case, the control box receives signals from the tractor (DIN 9684 standard). As a result, **only the linkage signal (working position)** is transmitted from the tractor to the control box. This signal opens or closes the slider automatically.

Thanks to the lifting unit signal, no manual operation on the control box is required when turning.

If the working position is to be turned, the OK button and the ON/OFF button must be pressed simultaneously when switching on.

The following appears on the display:

**Three-point linkage  
signal Inverted!**



**NOTE:** On some tractors, the linkage signal is not equipped as a standard. The slider is only opened when the spreading plate is rotating!

## 15.4 Linkage sensor pull switch



Fig.: 20

**Order number:** Item no.: 00410-2-174

**Connection:** 12-pin plug on the control box

**Cable length:** 5 m

With this sensor, the slider on the ES 100 M3 Special can be automatically opened and closed when lifting and lowering the implement.

**Installation position:** By means of a spring (for length compensation) and a chain, two points that move relative to each other when lifting the implement can be connected. Through the length change the switch is activated and thus the seeding shaft is switched off. In a manner similar to the sensor for the top link lifting unit, the pull switch can be mounted on the three-point and can be tensioned on the tractor with with the chain, e.g. on the towing hitch. Now if the implement is lifted, the distance between the two points increases and the pull switch actuates the slider. However, the switch can also mounted parallel to the cylinders, parallelograms, where with the lift-out procedure a relative movement between the two points takes place. You can specify whether spreading should occur with the switch activated or deactivated.

If the working position is to be turned, the OK button and the ON/OFF button must be pressed simultaneously when switching on.

The following appears on the display:

**Three-point linkage  
signal Inverted!**

**Items included:** 1 sensor,  
1 fastening plate incl. fastening bolts

## 15.5 Tractor cable set

For the power supply to the control box, without a standard 3-pin standard socket on the tractor, a retrofit kit is available as an accessory. The cable is 8 m long.

It is screwed directly on the terminals of the battery on the battery side, and at the other end, a 3-pin standard socket is installed.

This cable set can also be installed on quad bikes.

**Items included:** 1 power supply cable

**Cable length:** 8 m

**Order number:** Item no.: 00410-2-022



Fig.: 21

## 15.6 Cable extension 5 m (4-pin)

This cable extension is required when the soil tillage implement is longer than the 6 m cable installed ex factory, or to allow practical routing of the cable.

**Items included:** 1 cable extension

**Cable length:** 5 m

**Order number:** Item no.: 00410-2-016



Fig.: 22

## 15.7 Quad (ATV) bracket

To mount your ES 100 M3 Special on an ATV or quad bike, we offer a quad (ATV) bracket as an accessory.

**Scope of delivery:** 1 quad bracket

**Order number:** Item no.: 00300-2-135

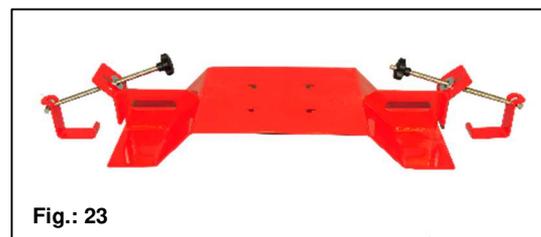


Fig.: 23

## 15.8 Height-adjustable quad (ATV) bracket

To mount the ES 100 M3 Special on a quad bike/ATV.

**Items included:** 1 height-adjustable quad (ATV) bracket

**Order number:** Item no.: 00300-2-022

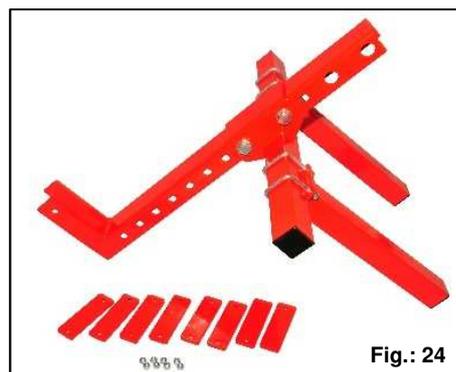


Fig.: 24

## 15.9 Pick-up mounting bracket

For practical and easy attachment to flatbeds or pick-up trucks.

**Items included:** 1 pick-up mounting bracket

**Order number:** Item no.: 00300-1-001



Fig.: 25

## 15.10 Precision dispersion plate

If you want to use your ES 100 M3 Special for small working widths, you can also purchase a precision dispersion plate. It was specially developed for small working widths (up to approx. 4 m) and causes the seed to be spread precisely in the roller (or in front of it).

**Items included:** 1 precision dispersion plate

**Order number:** Item no.: 02001-1-103

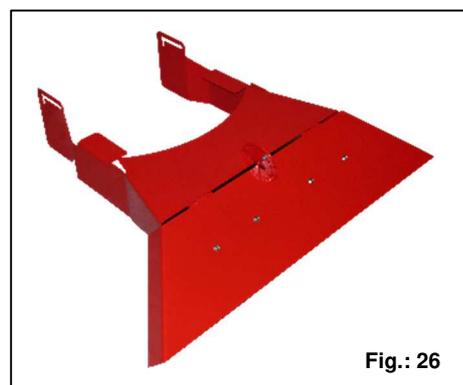


Fig.: 26

## 15.11 Calibration bag

A calibration bag is available as an additional optional accessory, to enable precise calibration.

**Items included:** 1 calibration bag + scale  
**Order number:** Item no.: 02001-1-101



Fig.: 27

## 16 My idea

The **ES 100 M3 Special** was extensively developed and tested. It took a long time from the initial idea to serial production. It required lots of commitment from the entire development team.

Nonetheless, the most valuable experience is gained in practice. Our motto:

**"Inspired by Farmers & realized by Professionals."**

This is how customer proximity of the development department creates a leading edge for you and APV.

Tell us about the positive and negative experiences you have had with the implement.

Share your suggestions for improvement and your ideas with us:

**[meineidee@apv.at](mailto:meineidee@apv.at)**

Take pictures or make hand-drawn sketches! We are open and grateful for any information, no matter in what form. Your information goes directly to the leading developers at APV.

I would like to thank you in advance for your involvement and wish you lots of fun with your APV product!

Sincerely yours,

Your Head of Development & Technology



Ing. Gregor Witzmann, MSc MBA

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# Quality for Professionals

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