

Manual

for high capacity spreader

**GDK5.000 / GDK6.000 / GDK7.000
GDK8.000 / GDK9.000 / GDK10.000**



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April 2017

Dear customer,

We are delighted that you have chosen a high capacity spreader from Güstrower.

To make full use of the machine's performance and to avoid malfunctions, we recommend reading these operating instructions before commissioning.

If you have any questions or need to order spare parts, please contact the telephone numbers indicated.

We wish you much success and effectiveness in the operation of your new spreader.

GMB Güstrower Maschinenbau GmbH

Table of Contents	Page
1. Intended use	2
2. Safety Instructions	3
3. Quick Reference Guide	4
4. Dosage adjustment	6
4.1 Recommendations for slide height	6
4.2 Determining the K number	8
4.3 Checking dosage	11
5. Adjusting spreading pattern	12
5.1 Nitrogen & ground fertilizer spreading	12
5.1.1 Spreading test	14
5.1.2 Border spreading	20
5.2 Lime & residual products spreading	23
5.2.1 Lime	24
5.2.2 Border spreading with lime	25
5.2.3 Compost, dry manure etc.	26
5.3 Adjusting speed of spreader discs	26
5.4 Setting impinge point of fertilizer	27
5.5 Basic settings	29
6. Electronics	31
6.1 Electronic controls TJ500	32
6.1.1 Electronic controls settings TJ500	34
6.2 Spreading with section control	42
6.3 Matrix Pro GS	44
6.4 Connection options	48
6.5 Troubleshooting (electronics)	50
7. Care and maintenance	53
7.1 Troubleshooting (mechanics)	56
8. Technical data	57
9. Hydraulics	59
10. Supplemental equipment	61
11. Truck spreader	64

1. Intended use

The high capacity spreader is a working device for the transport and the spreading of free-flowing spreading materials commonly used in agriculture, winter road service and road construction. Any use beyond this is deemed to be 'unintended use', for which the user bears the risk.

Intended use also includes the compliance with the care and maintenance conditions, observance of the safety instructions and the exclusive use of original spare parts.

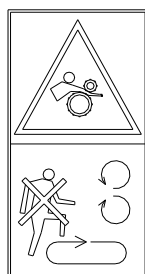


2. Safety instructions

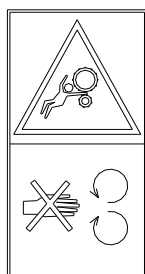
1. No persons may be on the spreader while loading, adjusting or driving.
2. Driver must ensure that spreader discs are free of any objects and no one is within 30m of the throwing area.
3. All protective devices must be properly installed, in particular, the PTO shaft- and spreader disc protectors.
4. The spreader must be turned off only after the spreader discs are switched off. During adjusting, a safety distance of 2 m from all moving parts must be observed.
5. Hydraulics must be switched off before working on the scraper floor. An emergency stop by electronic settings is not enough.
6. The permissible slope is 25% in the case line and 12% in the layer line. (No container attachments, such as wheels 23.1-26, track 1800 mm, careful driving). Larger travel ranges increase the permissible slope, larger wheels and container attachments reduce them. This has the potential to tip over the spreader.
7. Before decoupling, ensure that the spreader is top heavy to prevent build-up. The parking brake must be engaged and the support foot should be turned downwards. On inclined terrain, the machine must be secured against rolling away with the leading chocks firmly in position.
8. The spreader must not be loaded when disconnected.
9. If the braking force controller is set to "release", the unit will not brake.
10. After the first stress test, check the wheel bearing clearance (and then again after every 50 operating hours) as well as all screw connections for tightness, particularly the wheel bolts and drawbar lugs.
11. After adjusting the spreader, tighten all set screws again.
12. The shut-off valve of the hydraulic oil reservoir must always be kept open. It may only be closed during repairs.
13. Caution: The hydraulic system is under high pressure. Leakage can penetrate the skin and cause serious injury. Wear protective gloves during repairs!
14. The operator must avoid wearing loose clothing, as this could be pulled by moving parts.
15. The operator must wear personal protective equipment when necessary and that which is required by the fertilizer manufacturer.
16. The power supply voltage of the TJ 500 is only 12 V and must be fused with 5 A.
17. The battery cable must only be connected to a 12 V battery. It is to be secured with 30 A. All cables must be protected against clipping and kinking.
18. If the TJ500 is switched on, the mechanics of the partial width switching can move at any time. Caution: There is potential danger of crushing! Adjustments and repairs should be made only when the electronics are switched off.
19. Strong magnets are installed in the guide device. People with heart pacemakers must keep a distance accordingly. Be cautious with electronic devices!
20. Disconnect the power supply before any welding on electronic parts and the spreader assembly is to be done.
21. All maintenance and repairs should only be carried out with the engine switched off and the containers completely empty. The spreader must be secure and secured against rolling.
22. In principle, the operation and care and maintenance of the spreader must be carried out with due diligence by someone who is familiar with, and who is aware of the dangers. The operation, care, and maintenance of the spreader must comply with all safety regulations.

Warnings:

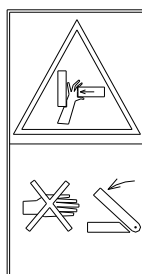
The warnings on the spreader are for the safety of all persons who work with the device. These are specific characteristics and have the following meaning:



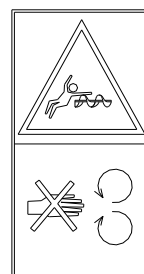
Do not enter the bin while running scraper floor.



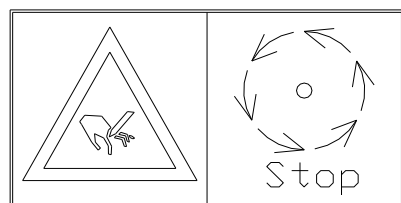
Keep a good distance to moving machine parts!



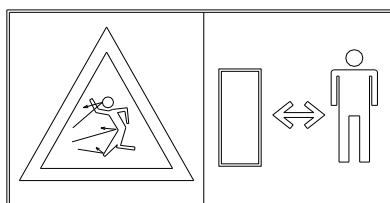
Never reach into the crush area when parts are moving!



Never reach into the turning auger!



Trailing tools! Please wait until all moving parts have stopped before working on it!



Keep distance: while throwing parts are running!



Damaged or missing warnings must be replaced

3. Short instructions

3.1 Coupling

- Adjust the height of the towing eye and the coupling of the tractor. The spreader must be inclined horizontally, or slightly inclined (especially with spring loaded devices).
- Connect the spreader, fold the support foot and lock it, set the brake force controller and check the brake and lights
- Adjust the PTO shaft length, (the thrust pipes must not hit the joints when cornering), the wide-angle joint must point towards the tractor
- Connect the hydraulic hoses (the stronger hose must be in the free return of the tractor), adjust the oil flow to approx. 60 l / min
- Units without PTO shaft: Connect the pressure hose to the coupling first and then set the plate speed via the oil flow (2nd ring on the scraper floor, return unpressurized)
- Connect/assemble TJ 500 (while in the field of view of the driver), connect the cable (power supply: 12 V and 5 A), then make the basic settings
- Connect the cable to the vehicle battery (12 V, 30 A) and then connect to the plug of the spreader cable
- Assemble Matrix, mount the GPS antenna on the tractor roof, and route the cables to the TJ500

3.2 Settings

- Select a reasonable slider height
- Determine the calibration number of the fertilizer
- Enter the working width and the amount of spreading
- Set the matrix according to the table

Nitrogen and ground fertilizer:

- Mount the wing discs or the H – spreading unit
- From the booklet " Setting values for the spreader" (for the fertilizer used), select the setting value for the spreader

Lime, compost and similar:

- Install standard lime discs or heavy duty lime discs (Hardox)
- Divider plate, limit flap or, if necessary remove the entire guide device
- Adjust spreader according to item 6
- Switch off the section control motor or disassemble the guiding device and the border-spreading device

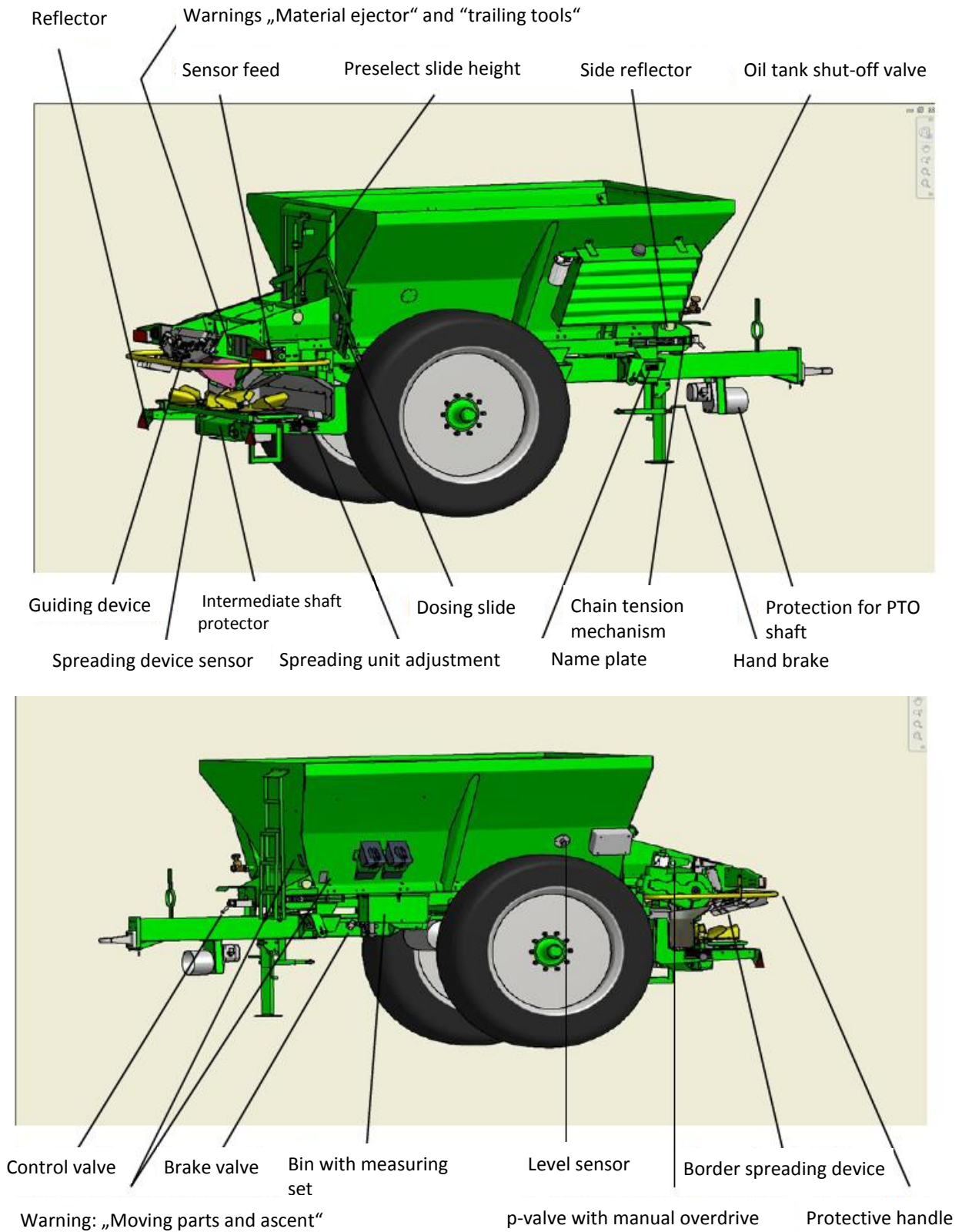
3.3 Spreading drive

- Check the tyre pressure
- Load the spreader (Winter: unfreeze scratching surface first)
- Adjust the brake force control according to the load
- Switch on hydraulic system
- Before fertilizing move the fertilizer to the discharge edge
- Turn on the PTO shaft (1000 rpm). At external temperatures below 8 ° C, heat the hydraulic oil for approx. 3 minutes at low speed
- Adjust the disc rotation speed on the control valve
- Start the spreading, first with the borders, switch the dosage via the TJ 500, then start the field drive as per the Matrix.
- After the border spreading switch the Matrix to automatic

3.4 Parking of spreader

- The spreader must be completely empty before parking
- Engage the parking brake, on inclines place the wedges in front of both wheels
- Insert the hinge shaft, hydraulic and brake hoses as well as the lighting cables into the provided brackets
- Cap the electronics plug tightly, store the TJ 500 in a dry area
- Clean the spreader regularly and lubricate according to the lubrication schedule

Location of the protective devices, warnings, retro-reflectors and controls



4. Adjust the dosage

4.1 Recommendations for the slide height:

The table gives the **maximum possible** application rate for fertilizer density 1 kg / l and tractor hydraulics 60 l / min.

Slider height: 8 scale parts				Slider height: 15 scale parts			
Working width	Travel speed			Working width	Travel speed		
m	8 km/h	15 km/h	25 km/h	m	8 km/h	15 km/h	25 km/h
12	1282	684	410	12	2404	1282	769
18	855	456	274	18	1603	855	513
24	641	342	205	24	1202	641	385
30	513	274	164	30	962	513	308
36	427	228	137	36	801	427	256

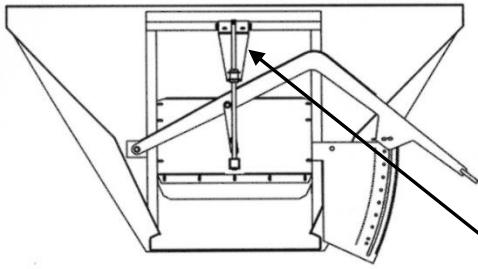
Slider height: 25 scale parts				Slider height: 35 scale parts			
Working width	Travel speed			Working width	Travel speed		
m	8 km/h	15 km/h	25 km/h	m	8 km/h	15 km/h	25 km/h
12	4007	2137	1282	12	5611	2992	1795
18	2672	1425	855	18	3740	1995	1197
24	2004	1069	641	24	2805	1496	898
30	1603	855	513	30	2244	1197	718
36	1336	712	427	36	1870	997	598

Slider height: 45 scale parts				Slider height: 80 scale parts			
Working width	Travel speed			Working width	Travel speed		
m	8 km/h	15 km/h	25 km/h	m	8 km/h	15 km/h	25 km/h
12	7214	3847	2308	12	12825	6840	4104
18	4809	2565	1539	18	8550	4560	2736
24	3607	1924	1154	24	6412	3420	2052
30	2885	1539	923	30	5130	2736	1642
36	2405	1282	769	36	4275	2280	1368

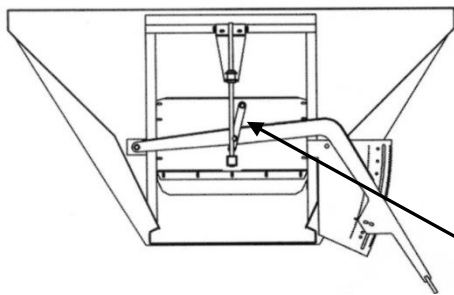
- **Mineral fertilizer:** up to a working width of 27 m, 15 is the optimal position for the slider position. For working widths above 27 m use slider position 20. In application rates below 100 kg / ha use slider position 8. Do not choose a slider selection over 25 for mineral fertilizers.
- **Lime:** Slider position 35 to 45.
- **Dry manure** or similar: up to slider position 80. Above slider position 50 we recommend the crumble roll.
- The slide bolt will need to be re-positioned above slider position 46.

In general: smaller slider heights ensure more uniform fertilizer output; larger slider heights prevent blockages by foreign objects and require less drive power.

Switching the slider to the upper range:



Pull the slider and secure it with the spring pin in the guide rod



Screw the slider bolt back and secure it with the spring pin

Move the slider to the lower section in the reverse order.

4.2 Determine the K - number:

The K - number is valid for the respective slider position and the fertilizer for all application rates and all driving speeds.

Calculate the K - number

The calibration number can be calculated according to the following formula:

K-number =	$\frac{1425 \times \text{slider height (skt)} \times \text{fertilizer density}}{360}$
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Example: slider position: 15 Skt.
 fertilizer density (Sulfan YARA Rostock): 1.10 kg / l

$$\text{K - number} = \frac{1425 \times 15 \text{ Skt} \times 1.10 \text{ kg/l}}{360}$$

$$\text{K - number} = 65.31$$

The K number can also be taken from the following table:

Fertilizer density (Kg / l)	Slider height (Skt) (scraper floor)											
	8	10	15	20	25	30	35	40	45	50	60	80
0.50	15.83	19.79	29.69	39.58	49.48	59.4	69.3	79.2	89	99	119	158
0.60	19.00	23.75	35.63	47.50	59.38	71.3	83.1	95.0	107	119	143	190
0.65	20.58	25.73	38.59	51.46	64.32	77.2	90.1	102.9	116	129	154	206
0.70	22.17	27.71	41.56	55.42	69.27	83.1	97.0	110.8	125	139	166	222
0.72	22.80	28.50	42.75	57.00	71.25	85.5	99.8	114.0	128	143	171	228
0.74	23.43	29.29	43.94	58.58	73.23	87.9	102.5	117.2	132	146	176	234
0.76	24.07	30.08	45.13	60.17	75.21	90.3	105.3	120.3	135	150	181	241
0.78	24.70	30.88	46.31	61.75	77.19	92.6	108.1	123.5	139	154	185	247
0.80	25.33	31.67	47.50	63.33	79.17	95.0	110.8	126.7	143	158	190	253
0.82	25.97	32.46	48.69	64.92	81.15	97.4	113.6	129.8	146	162	195	260
0.84	26.60	33.25	49.88	66.50	83.13	99.8	116.4	133.0	150	166	200	266
0.86	27.23	34.04	51.06	68.08	85.10	102.1	119.1	136.2	153	170	204	272
0.88	27.87	34.83	52.25	69.67	87.08	104.5	121.9	139.3	157	174	209	279
0.90	28.50	35.63	53.44	71.25	89.06	106.9	124.7	142.5	160	178	214	285
0.91	28.82	36.02	54.03	72.04	90.05	108.1	126.1	144.1	162	180	216	288
0.92	29.13	36.42	54.63	72.83	91.04	109.3	127.5	145.7	164	182	219	291
0.93	29.45	36.81	55.22	73.63	92.03	110.4	128.8	147.3	166	184	221	295
0.94	29.77	37.21	55.81	74.42	93.02	111.6	130.2	148.8	167	186	223	298
0.95	30.08	37.60	56.41	75.21	94.01	112.8	131.6	150.4	169	188	226	301
0.96	30.40	38.00	57.00	76.00	95.00	114.0	133.0	152.0	171	190	228	304
0.97	30.72	38.40	57.59	76.79	95.99	115.2	134.4	153.6	173	192	230	307
0.98	31.03	38.79	58.19	77.58	96.98	116.4	135.8	155.2	175	194	233	310
0.99	31.35	39.19	58.78	78.38	97.97	117.6	137.2	156.8	176	196	235	314
1.00	31.67	39.58	59.38	79.17	98.96	118.8	138.5	158.3	178	198	238	317
1.01	31.98	39.98	59.97	79.96	99.95	119.9	139.9	159.9	180	200	240	320
1.02	32.30	40.38	60.56	80.75	100.94	121.1	141.3	161.5	182	202	242	323
1.03	32.62	40.77	61.16	81.54	101.93	122.3	142.7	163.1	183	204	245	326
1.04	32.93	41.17	61.75	82.33	102.92	123.5	144.1	164.7	185	206	247	329
1.05	33.25	41.56	62.34	83.13	103.91	124.7	145.5	166.3	187	208	249	333
1.06	33.57	41.96	62.94	83.92	104.90	125.9	146.9	167.8	189	210	252	336
1.07	33.88	42.35	63.53	84.71	105.89	127.1	148.2	169.4	191	212	254	339
1.08	34.20	42.75	64.13	85.50	106.88	128.3	149.6	171.0	192	214	257	342
1.09	34.52	43.15	64.72	86.29	107.86	129.4	151.0	172.6	194	216	259	345
1.10	34.83	43.54	65.31	87.08	108.85	130.6	152.4	174.2	196	218	261	348
1.12	35.47	44.33	66.50	88.67	110.83	133.0	155.2	177.3	200	222	266	355
1.14	36.10	45.13	67.69	90.25	112.81	135.4	157.9	180.5	203	226	271	361
1.16	36.73	45.92	68.88	91.83	114.79	137.8	160.7	183.7	207	230	276	367
1.18	37.37	46.71	70.06	93.42	116.77	140.1	163.5	186.8	210	234	280	374
1.20	38.00	47.50	71.25	95.00	118.75	142.5	166.3	190.0	214	238	285	380
1.22	38.63	48.29	72.44	96.58	120.73	144.9	169.0	193.2	217	241	290	386
1.24	39.27	49.08	73.63	98.17	122.71	147.3	171.8	196.3	221	245	295	393
1.26	39.90	49.88	74.81	99.75	124.69	149.6	174.6	199.5	224	249	299	399
1.28	40.53	50.67	76.00	101.33	126.67	152.0	177.3	202.7	228	253	304	405
1.30	41.17	51.46	77.19	102.92	128.65	154.4	180.1	205.8	232	257	309	412
1.32	41.80	52.25	78.38	104.50	130.63	156.8	182.9	209.0	235	261	314	418
1.34	42.43	53.04	79.56	106.08	132.60	159.1	185.6	212.2	239	265	318	424
1.36	43.07	53.83	80.75	107.67	134.58	161.5	188.4	215.3	242	269	323	431
1.38	43.70	54.63	81.94	109.25	136.56	163.9	191.2	218.5	246	273	328	437
1.40	44.33	55.42	83.13	110.83	138.54	166.3	194.0	221.7	249	277	333	443
1.45	45.92	57.40	86.09	114.79	143.49	172.2	200.9	229.6	258	287	344	459
1.50	47.50	59.38	89.06	118.75	148.44	178.1	207.8	237.5	267	297	356	475
1.60	50.67	63.33	95.00	126.67	158.33	190.0	221.7	253.3	285	317	380	507

Density of some fertilizers

Values are approximate. Actual values may differ

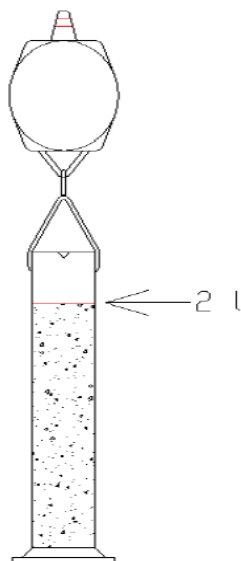
Fertilizer	Manufacturer	Density kg/l	Fertilizer	Manufacturer	Density kg/l
Alzon 47	SKW Piesteritz	0,78	Piamon 33-S	SKW Piesteritz	0,76
Ammonnitrat CAN	Poland	1,07	Piagran 46	SKW Piesteritz	0,79
ASS	BASF	0,99	Perika `Standard`	degussa	1,02
DAP 18+46+0		0,95	PK 0-10-15	YARA	1,31
Domogran 45	Capro Leuna	1,03	Poliphoska NPKMg	Poland	1
Entec 26	COMPO	0,97	PK12+24Reh-Ka-Ph	Kemira	1,14
Extran	YARA	1	Schwefelsaures		
Harnstoff, geprillt		0,72	Ammoniak gran		1,03
KAS	YARA Rostock	1,08	Sulfan 24%N+6%S	YARA	1,1
KAS	Kemira	1,04	Thomaskali 8-15-6	Thomasdünger	1,09
KAS	Lovositze	1	Thomaskali 0-10-20	fertiva	0,91
Kemistar 13-13-21	Kemira	1,04	Tripelphosphat 46%		1,11
Kieserit `gran`	K+S	1,29	60er Kali `gran`	K+S	1,13
Korn - Kali 40%	K+S	1,07	Kainit	K+S	1,07
MAP 12+52+0		1	Flexammon	fertiva	0,94
Nitrophoska 13+9+16	BASF	1,1	Tripelphosphat 46%		1,1
Nitrophoska 20+8+8	BASF	1,1	60er Kali `gran`	K+S	1,1
NPK 17-8-20	BASF	1,07	Carbokalk		0.9...1.0
NPK 21-3-10-Mg+Bor+S	Kemira	1,1	Kalk		1.0...1.6
NPK 21-3-10	YARA	1,02	Trockenkot		0.6...0.7
Patentkali	K+S	1,07	Knochenmehl		0.7...0.8
NPK 15-15-15	Tiferto	1,14	Konverterkalk		1,04

If the K number is determined by calculation with the specified table values, the accuracy of the dosage is approximately +/- 5% according to experience.

Measuring set

The density of the fertilizer can be determined with the measuring set.

- Fill the measuring cup, compress by gently tapping, reduce the content to 2000 ml and weigh
- Then weigh the empty measuring cup



$$\text{Density (kg/l)} = \frac{\text{measurement} - \text{empty weight of measuring cup}}{2}$$

Example:

weighed material 2.68 kg
empty weight 0.41 kg

$$\text{Density (kg/l)} = \frac{2.68 \text{ kg} - 0.41 \text{ kg}}{2}$$

$$\text{Density (kg/l)} = 1.14 \text{ kg/l}$$

Determine the K - number by adjusting (turn off):

- Load the Spreader
- Pre-treat the fertilizer up to the discharge edge (with the manual control on the proportional valve)
- Start the "adjusting (turn off)" program (see page 31)
- Weigh the fertilizer quantity and enter it into the computer, the K - number will be calculated

Weighing with yard scales or the weighing device

- Weigh the loaded spreader
- Adjust (turn off) approx. 1.5 t
- Weigh the spreader again, finding the difference from the first weighing














Note:

The counter must be set to zero at the beginning of the adjustment. After 100000 pulses the counter automatically sets back to zero.

4.3 Check the dosage

The TJ500 contains a menu for checking the K number.

Menu / Settings / Operation / Check dosage:

Check dosage		Check dosage
Payload 6750 kg		
Current K-number 61.52	250	
New K-number 0	1100	
   	   	   
Weigh payload and submit => note the change in the Operating Menu	Empty the bin => enter the change immediately in the Menu	Press the "Empty Spreader" key use the new K-number => record this leave the old K-number => ESC

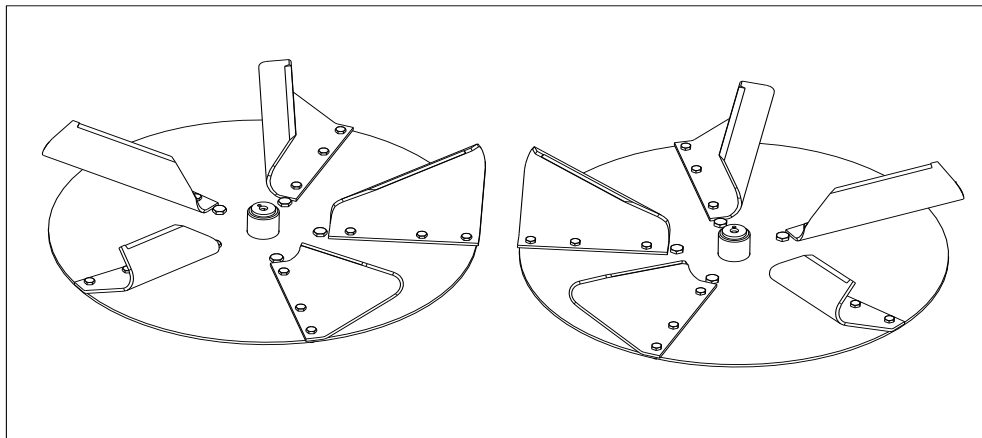
The checking menu must be started as soon as the bin is empty, and the scraper floor must be halted. The correct application of this menu guarantees a very high dosing accuracy.

5. Adjust the spreading pattern

5.1 Spreading of nitrogen and ground fertilizer:

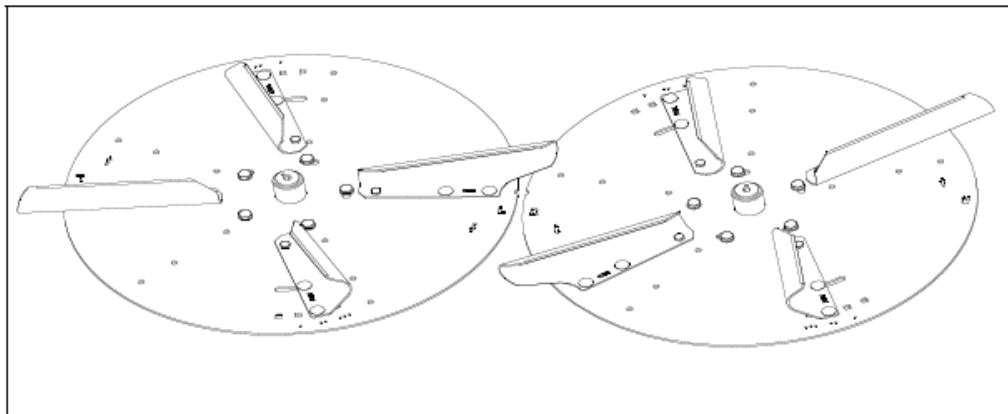
- **Wing discs spreading unit:**

Working width:	12 to 40 m
Application rate:	50 to 1500 kg/ha
Number of revolutions:	960 rpm (800 to 1060 rpm)
- Spreading of granules, prilled- and granulated fertilizers, and granulated lime
- High trajectory of fertilizer => "raining" also in high stocks
- Easily and quickly adjustable
- Spreading of light fertilizer is partly sensitive to wind
- Less suitable for urea over approx. 32m



- **H - discs Spreading unit:**

Working width:	24 to 42 m (18 m)
Application rate:	20 to 650 kg/ha
Number of revolutions:	1100 rpm
- Spreading of granules, prilled- and granulated fertilizer
- Low trajectory of fertilizer => Good distribution of difficult-to-spread fertilizers (up to 18m) such as urea or crystalline fertilizers.
- Suitable for late fertilization in lower stocks
- Settings are more complex



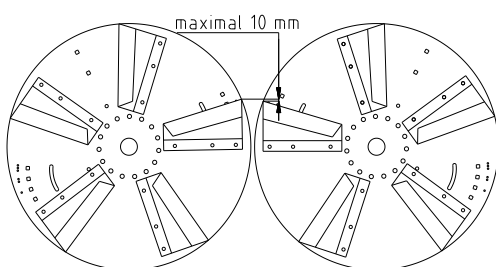
The hole pattern for both spreading units is on the plate. Only the vanes and deflector need to be changed. The spreading wings are mounted on the holes, and the H – spreading vanes on the rectangular holes.

The direction of travel is indicated on the discs: L => mount left / R => mount right (in the direction of travel)

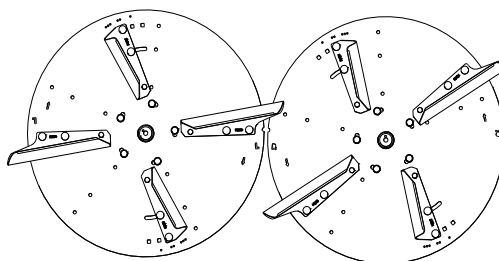
The markings on the rim must point towards each other. (refer to diagram)

The discs must always be positioned horizontally or slightly inclined forward. In the H discs spreading unit, backward leaning discs lead to stronger straighteners compared to the wing discs.

For border spreading the respective deflectors must be utilized. The setting values are located in the corresponding folders.



Assembly of spreading wings



Assembly of H – spreading vanes

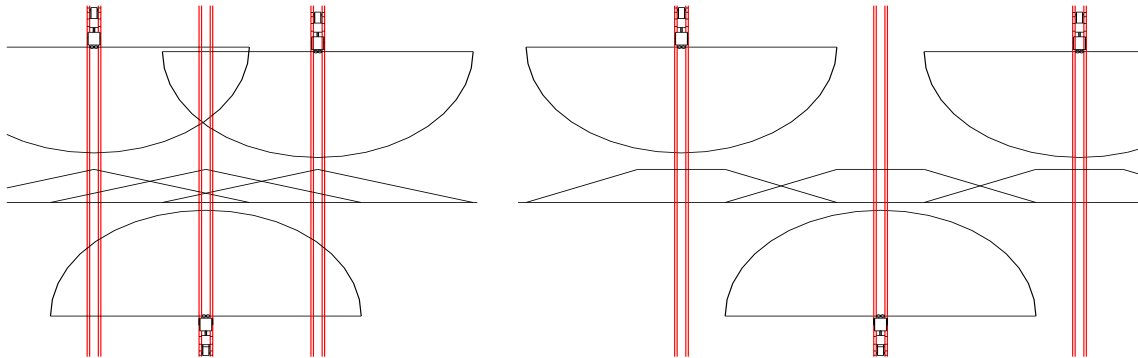
In summary:

- The greater the working width, the more exact the setting of the spreading unit
- In the headlands, the spreading discs are switched on to distribute trailing fertilizer
- Use smaller slider openings on hilly terrain
- Avoid erratic and jerky movements when using larger slider openings
- If necessary, clean the guiding equipment and the sealing plate several times a day
- Light and small-grained fertilizers reach only low velocities and should not be spreaded if windy (e.g., urea)
- Spreading in wind should be avoided with all fertilizers
- Large working widths (from 28m) require fertilizers with a high grain strength (> 40N) and a low dust content
- The setting values can be downloaded at www.gmb-questrower.de

When setting the spreader, follow the given values in the booklet „Setting values for the wing disc spreading unit, or „Setting values for the H – spreading unit“. These values are the result of extensive tests we have undertaken in the spreading hall. If the consistency of the used fertilizer deviates from the tested fertilizer, re-adjusting the setting values can improve the spreading.

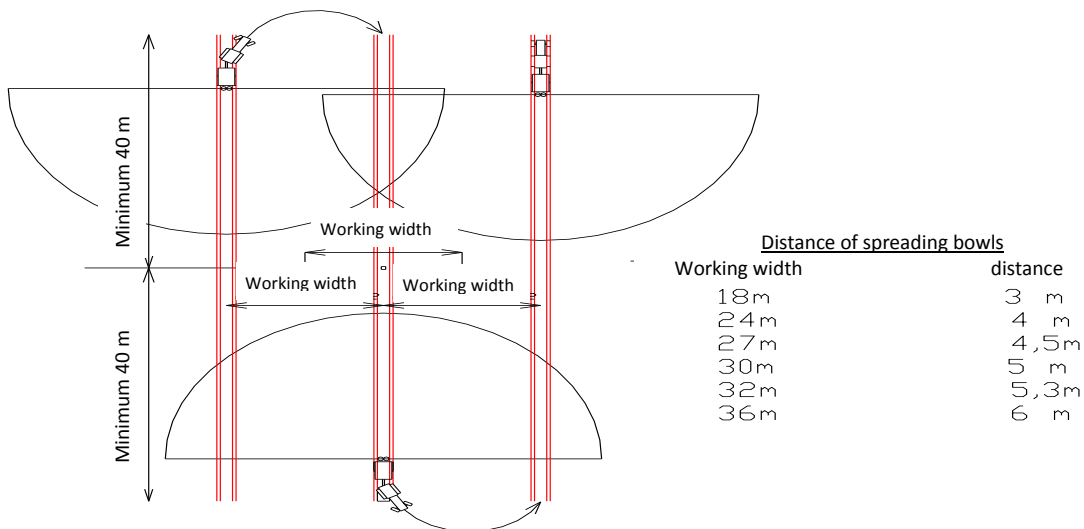
5.1.1 Spreading Test

Always use spreading bowls to test the spreading pattern. The accuracy of fertilizer distribution cannot be determined by merely looking at the fertilizer in the field. Before the test, approximately 200 kg of fertilizer should be spreaded to clean the spreading vanes. Worn out or bent spreading wings must be replaced. Proceed with the tests in dry weather on level terrain and at normal driving speeds. The spreading bowls must be placed horizontally and equidistant to each other. The assessment of the volume can be confirmed by the means of a scale.



If the spreading pattern is triangular an adjustment can be made to accommodate several working widths. The spreading distance must be wider than the working width. If the spreading distance is less than the working width the spreading pattern will form a trapezoid. The working widths will then have different setting values.

Spreading pattern with overlap



Wing discs-spreading unit:



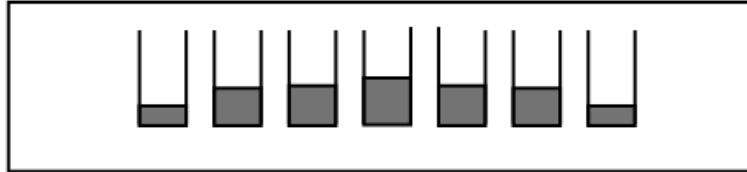
Allowable deviation:

(depending on the average scale parts)

5 scale parts => +/- 1 scale part

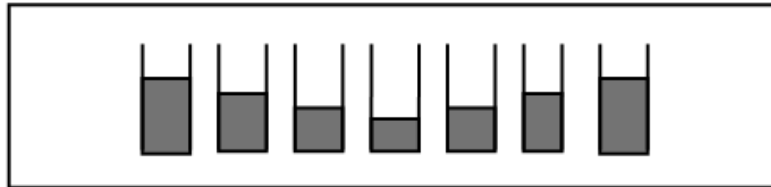
10 scale parts => +/- 1,5 scale parts (max. 1 x +/- 2 scale parts)

15 scale parts => +/- 2 scale parts (max. 1 x +/- 3 scale parts)



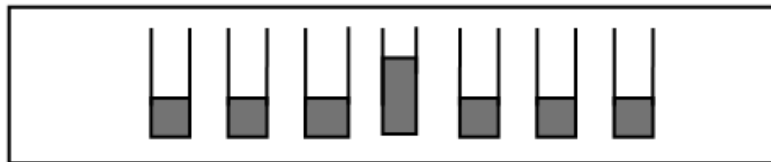
Spreading unit settings not optimal:

- Spreading unit has to be shifted in the minus zone (by 20 scale parts)
- Guiding sheet – increase setting values (by 1 scale part)



Spreading unit settings not optimal:

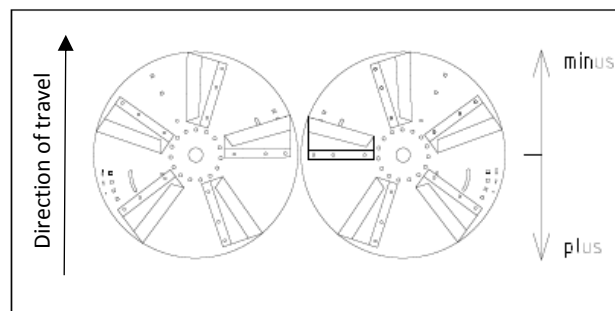
- Spreading unit has to be shifted in the plus zone (by 20 scale parts)
- Guiding sheet – decrease setting values (by 1 scale part)



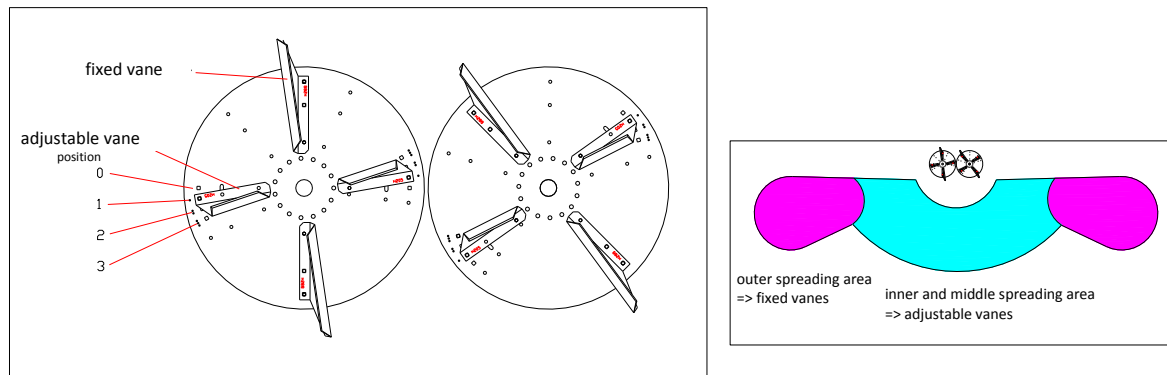
Spreader is defective:

- Metal plate is clogged
- Top edge of the spreading wing is blunt
- Seals are worn out or torn
- Spreading wings are out of alignment
- Driving speed is too high (flow rate is too high)

As a rule, a satisfactory spreading pattern can be achieved only by shifting the spreading unit.



H discs-spreading unit:



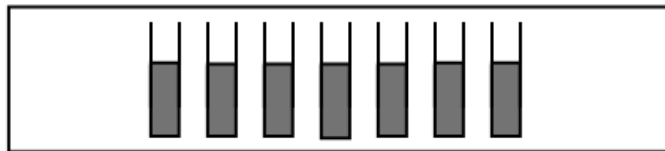
The changing of the spreading pattern takes place by:

- Changing the length of the fixed vanes (outer spreading area) and
- Changing the length and position of the adjustable vanes (inner- and middle spreading area)

The opposite vanes must always be the same length.

The disc speed must be 1100 rpm.

The fine-tuning can be done by moving the spreader unit.



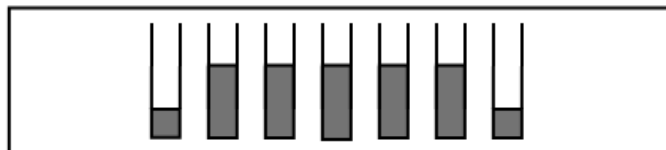
Acceptable deviation:

(depending on the average)

5 scale parts => +/- 1 scale parts

10 scale parts => +/- 1.5 scale parts (max. 1 x +/- 2 scale parts)

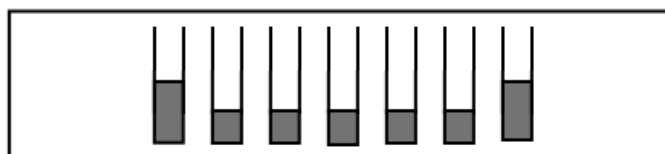
15 scale parts => +/- 2 scale parts (max. 1 x +/- 3 scale parts)



Fixed vanes throw too short

- extend the fixed vanes
- plate speed is too low
- (- shift spreading unit

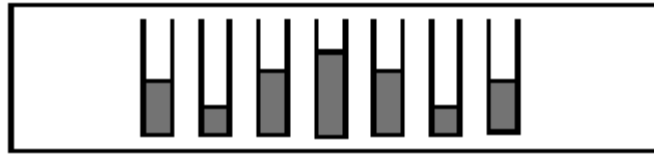
e.g. H222 => H288
should: 1100 rpm
e.g. 0 / 0 => -40 / 0)



Fixed vanes throw too far

- shorten the fixed vanes
- (- shift spreading unit

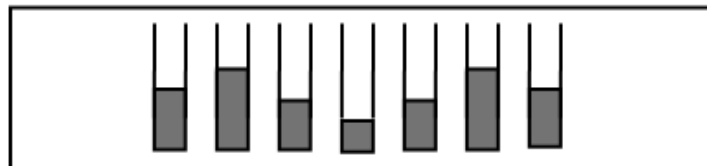
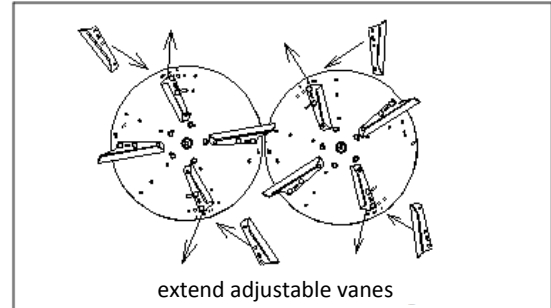
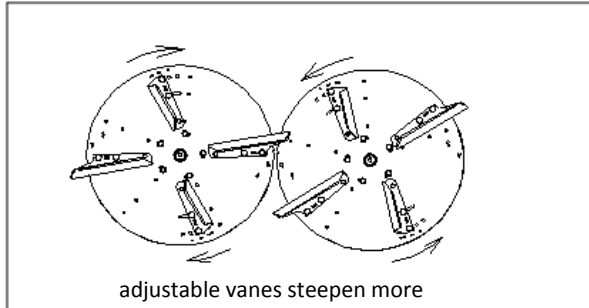
e.g. H288 => H222
e.g. - 40 / 0 => 0 / 0)



Adjustable vanes throw too short

- steepen more the adjustable vanes
- extend the fixed vanes
- (- shift spreading unit in the (-) zone

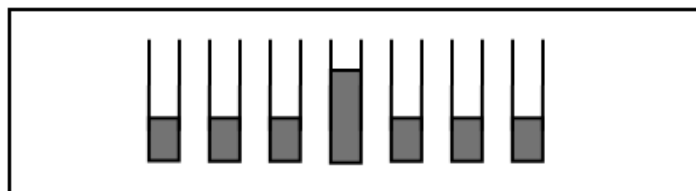
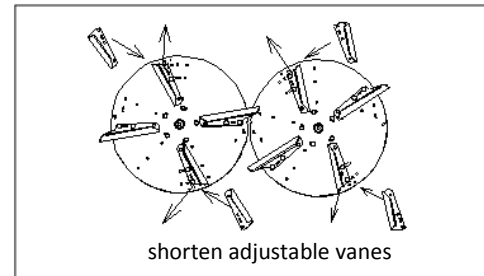
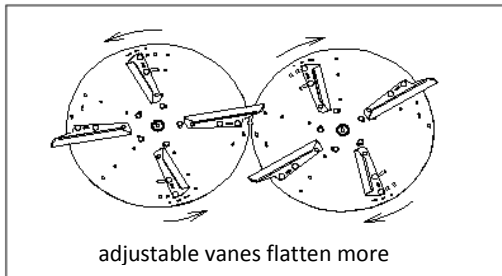
e.g. H205(2) => H205(1)
e.g. H205(0) => H222(1)
e.g. + 30 / 0 => -10 / 0)



Adjustable vanes throw too far

- flatten more the adjustable vanes
- shorten the adjustable vanes
- (- shift spreading unit in the (+) zone

e.g. H222(1) => H222(2)
e.g. H222(3) => H205(2)
e.g. - 40 / 0 => 0 / 0)



Spreader is defective:

- sealing plate is clogged
- upper edges of the vanes are blunt
- seals are worn out or torn
- driving speed is too high (performance rate/setting is too high)

5.1.2 Border Spreading

Border Spreading:

Fertilizer is being spread insufficiently on one side. The goal is to spread the fertilizer as evenly as possible across the area.

No fertilizer should be thrown over the field border. At the border there will be a strip with less fertilizer.

Edge Spreading:

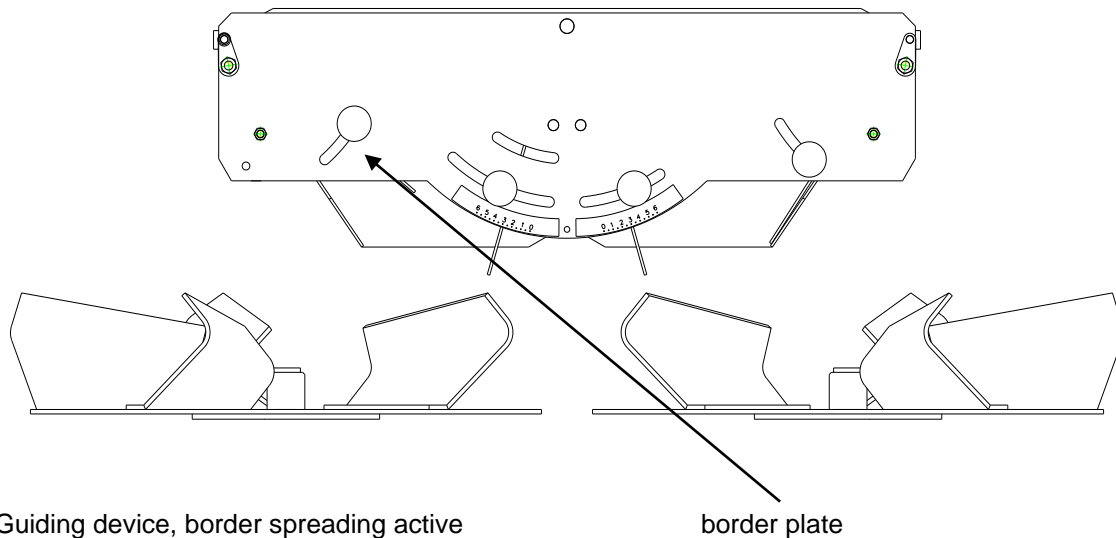
Fertilizer is being spread insufficiently on one side. The goal is to spread the fertilizer as evenly as possible across the area. It is okay to spread across the field border.

Values for border spreading can be found in the booklet:

- Setting values for the wing discs – Spreading unit with or without section control
- Setting values for H – Spreading unit with or without section control

Settings for guiding device without section control:

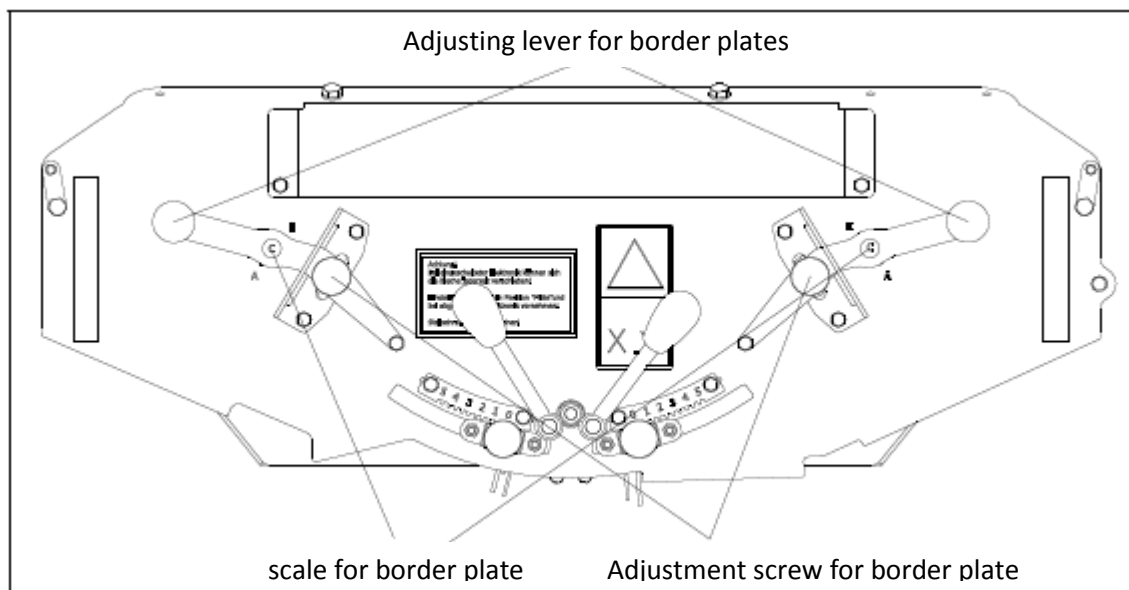
- Reduce the quantity
- Set the border plates to the required values
- Set the deflector to the required values
- If required, the speed of the spreading discs must be reduced either with the control valve or by reducing the engine speed of the tractor



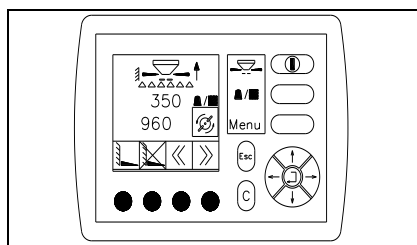
Settings for guiding device with section control:

- Select "A" or "C / E" under Settings / Operation / Border spreading
- Set the quantity reduction (0 to 50%)
- Adjust the border plates to the required value (loosen the setting screw and press in approx. 8 mm, adjust the control levers on both sides at the same time, then tighten the setting screw)
- Activate „Border Spreading“ in the Work menu
- Set the deflector to the required value
- Deactivate Border Spreading

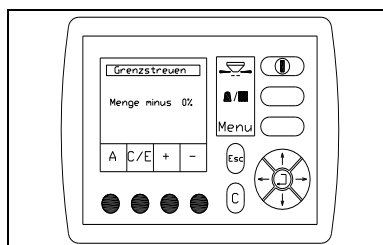
Border spreading is now preset.



After border spreading has been activated the symbol appears in the display. If necessary, the speed of the spreader may need to be reduced (either with the control valve or by reducing the engine speed of the tractor).

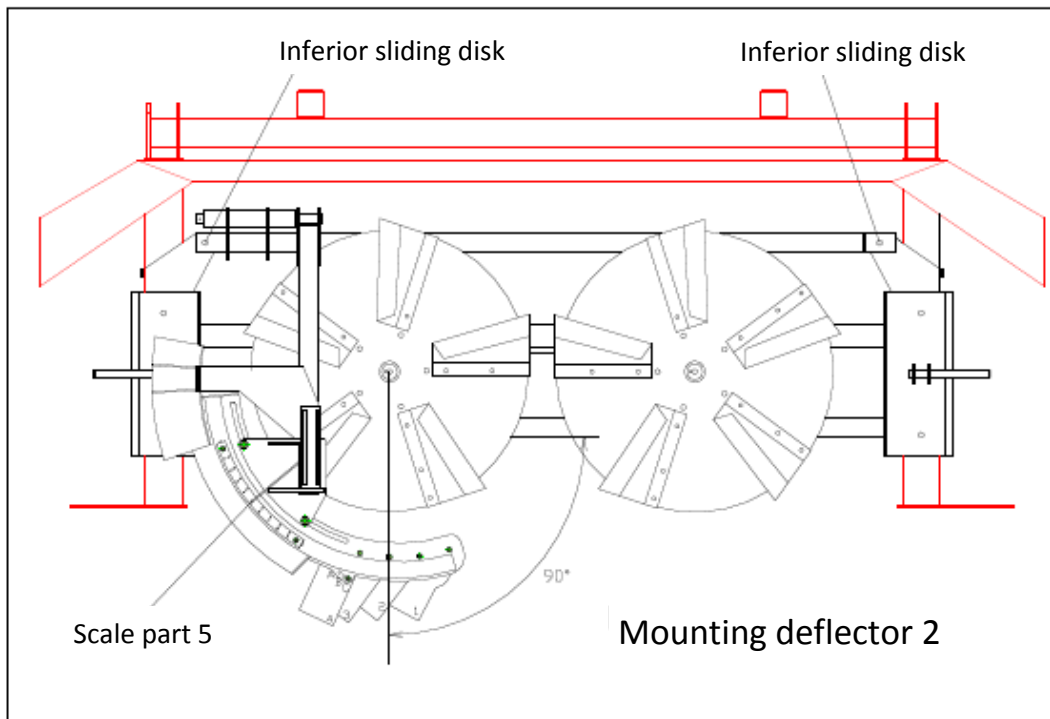


Working menu border spreading

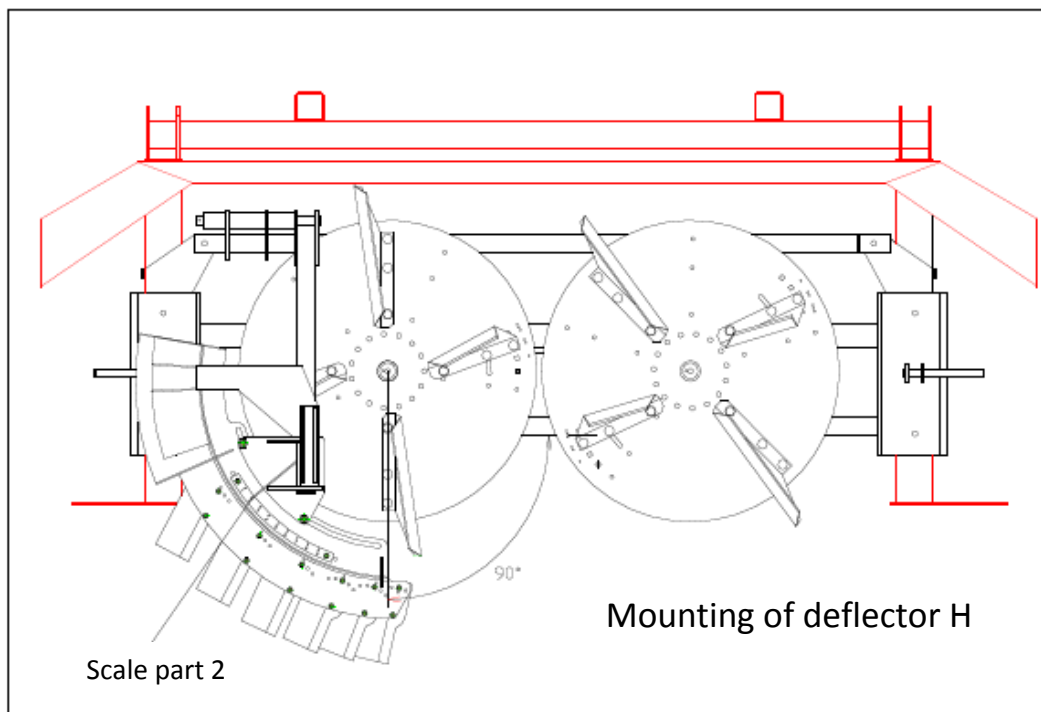


Adjustment menu border spreading

We recommend dismantling the deflector and switching off the section control motor when converting to standard lime discs or heavy duty lime discs.



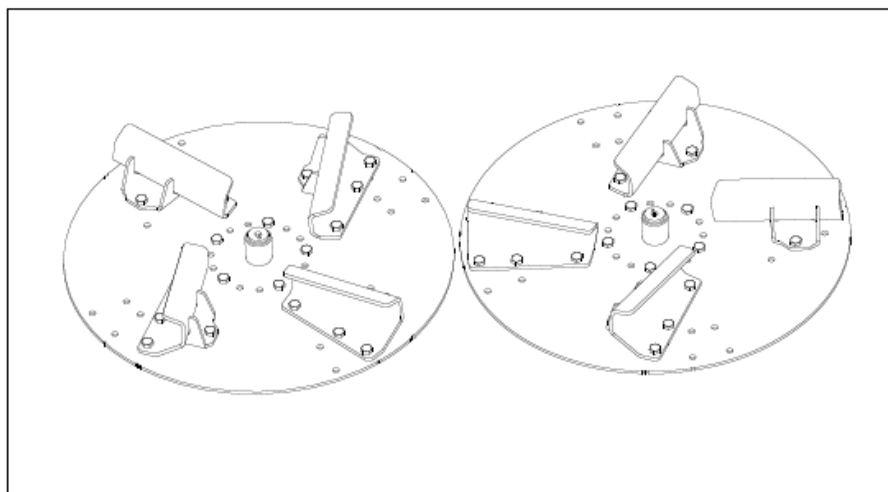
Mounting of deflector 2 (to use with the wing discs – spreading unit)



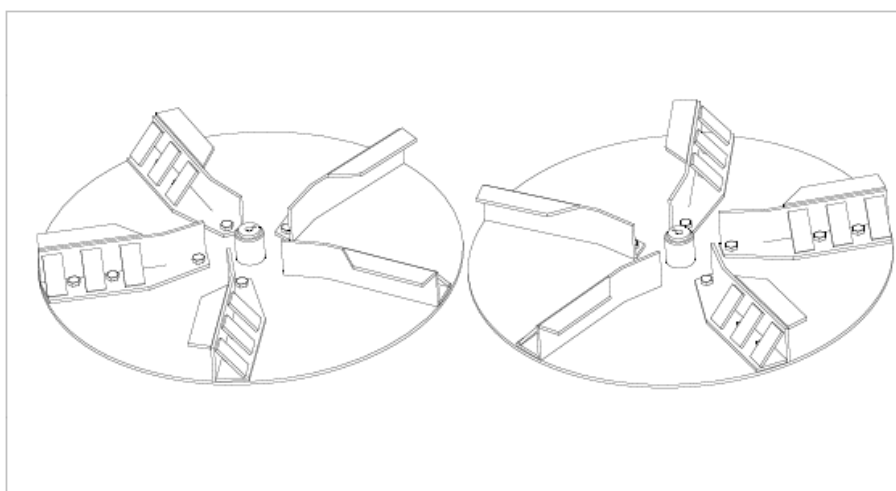
Mounting of deflector H (to use with H-spreading unit)

5.2 Spreading of lime and residual products

- **Lime discs:** Working width: 6 - 24 m
Application rate: up to 1.5 t/min
Number of revolutions: 880 – 960 rpm
- Lime, dry manure, compost and similar



- **Heavy duty lime discs:** Working width: 6 - 18 m
Application rate: up to 2.5 t/min
Number of revolutions: 880 - 960 rpm
- Lime (large quantities), dry manure, compost and similar



Change discs:

- Loosen the axial screw in the hub, then change the spreading disc
- Tighten the axial screw, then bend the security metal plate
- Always lubricate the gear shaft

5.2.1 Lime

The spreader must be equipped with the following:

- mount lime discs or heavy duty lime discs
- dismantle divider plate
- if necessary dismantle border plate or remove the complete guiding device
- adjust the number of revolutions of the spreading discs to 880 to 960 rpm

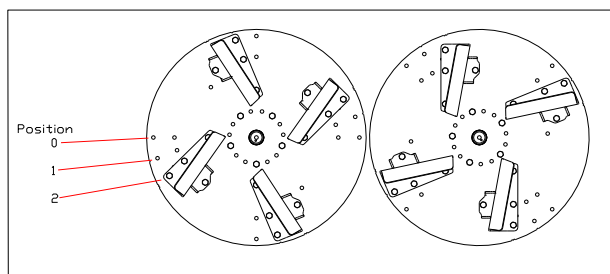
Please note the following:

- make sure that no foreign objects enter the bin (if necessary install sieves 80x80)
 - choose height of slide so there is no possibility for foreign objects to all blockage
 - mount the crumble roll from slide height 50
 - coordinate spreading quantities, driving speed and efficiency of the spreading unit
- For burnt lime we recommend using the spreading auger. Granulated lime (Granukal) can be spread out also till approx. 1 t/ha with the wing disc-spreading unit (up to 36m working width).

Adjustment:

Lime can have different consistencies, therefore we have only given reference values for the adjustment of the spreading unit. In certain circumstances the dropping point must be moved over the entire control range to get a good spreading result.

Lime discs:



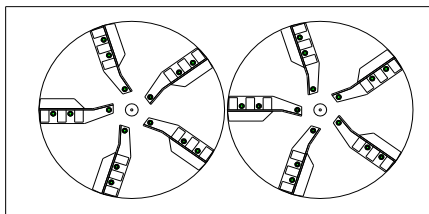
lime	Guiding plate	chute	Position of the vanes	Working width
Marl	Skt. 0...1	+50	0 and 2	up to 18 m
Converter lime	Skt. 0...1	+50	1 and 2	up to 18 m
Carbo lime	remove	+50	1 and 2	up to 14 m
Granukal	Skt. 0	+80	0 and 1	up to 24 m

Opposite vanes must be mounted always in the same position.

The steeper setting of the vanes (from position 2 to 0) throws more lime outward and increases the power requirement of the spreading unit.

The flatter setting of the vanes (from position 0 to 2) throws more lime to the middle and decreases the power requirement.

Heavy duty lime discs:



lime	Guiding plate	chute	Working width
Marl	Skt. 0...1	+50	up to 16 m
Converter lime	Skt. 0...1	+50	up to 16 m
Carbo lime	remove	+50	up to 12 m
Granukal	Skt. 0	+80	up to 18 m

5.2.2 border spreading with lime:

Lime border spreading is done exclusively by moving the dropping point. Therefore, a guiding device must be installed without section control.

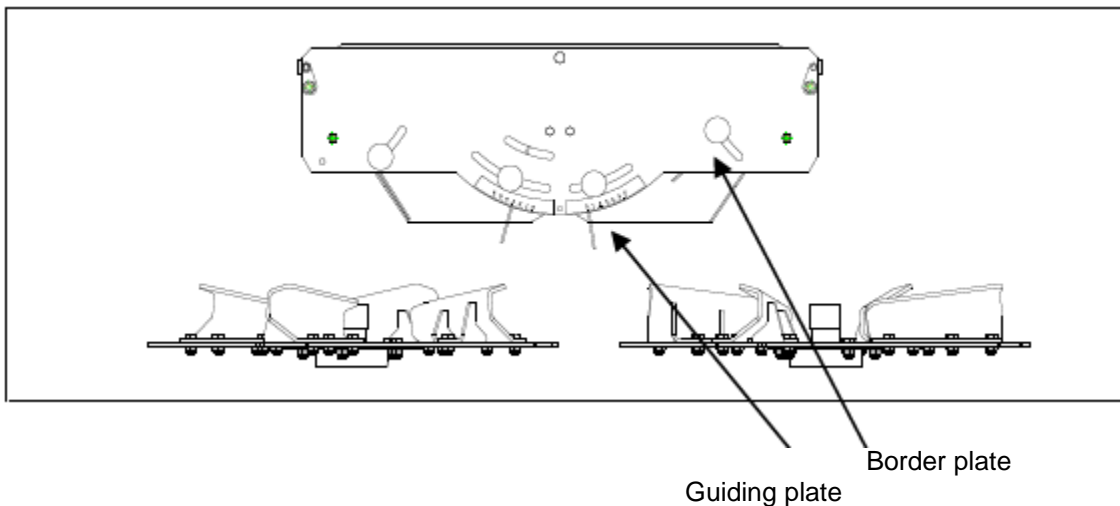
Reducing spreading width by installing border plate at right place. Lime has to be good pourable.

Place the border plate at half of the maximum (C). Border spreading is not possible without guiding device.

Border spreading on the right side:

- adjust guiding plate at right side to 0
- place the border plate at right side into the material flow
- reduce number of revolutions of the spreading discs (650 rpm)
- Reduce the spreading quantity by 10-25 %

Border spreading on the left side is analog.



Guiding device, border spreading right side is switched on.

If the spreading width is too short, please do the following:

- Close the border plate in stages
- Increase the speed of the spreading discs (up to 960 rpm)

If the spreading width is too large, please do the following:

- Decrease the speed of the spreading discs

5.2.3 Compost, dry manure and similar

The spreader must be equipped with the following:

- lime discs or heavy duty lime discs
- dismantle divider plate
- remove the guiding device completely
- adjust the rpm of the spreader discs to 880 to 960 rpm
- mount crumble roll

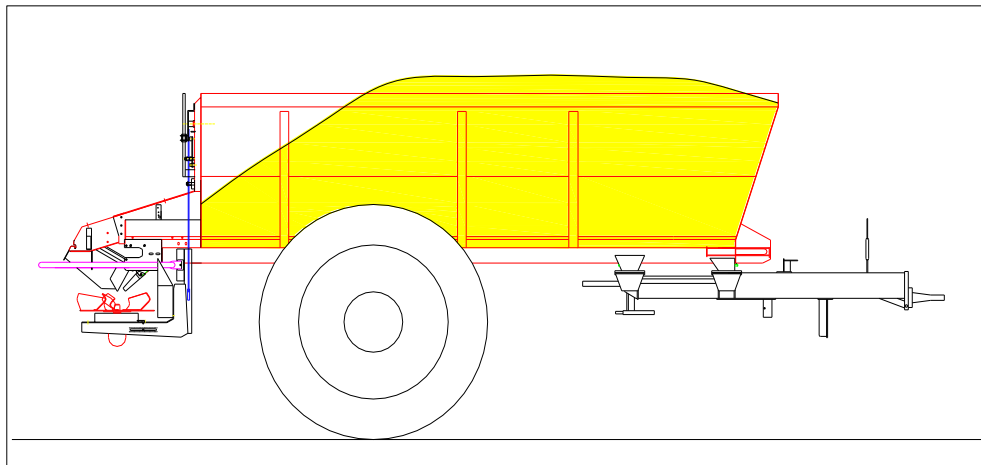
Please note the following:

- choose a sufficient height of slide (from Skt. 40)
- do not load the back third of the bin if the material tends to bridge formation
- coordinate spreading quantities, driving speed and efficiency of the spreading unit

Adjustment of the spreading device: see Carbo lime

Working width	8 km/h	12 km/h	16 km/h
8 m	20 t/ha	13 t/ha	10 t/ha
12 m	12 t/ha	8 t/ha	6 t/ha
16 m	8 t/ha	5 t/ha	4 t/ha

Do not exceed the given application rates.

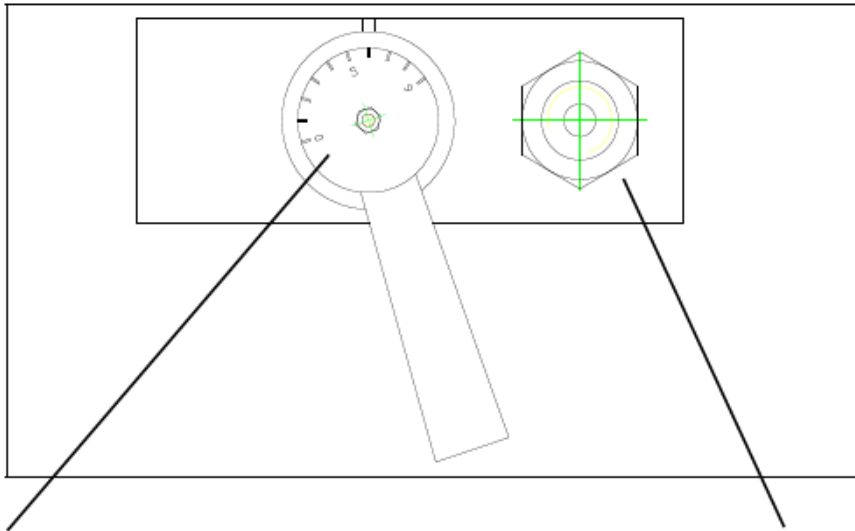


Loading with spreading materials which tend to bridge formation.

5.3 Adjusting the speed of the spreading discs

Adjust the speed of the spreading discs with the control valve on the drawbar.

- Scale part 9: approx. 1100 rpm (rated speed H-spreading unit)
- Scale part 6 approx. 960 rpm (rated speed wing disc spreading unit)
- Scale part 3 approx. 800 rpm
- Scale part 0 approx. 650 rpm



RPM setting for
spreading discs discs

Coordinate the rpm of spreading
(Skt.6 => 960...980 rpm)

For higher disc speeds (number of revolutions) the PTO speed must be 930 – 1000 rpm. For lower disc speeds, it must be reduced. The control valve keeps the disc rotation speed constant even if the PTO shaft speeds change, as long as the control range is not exited.

If there is a need for lower disc speeds in the case of border spreading, or for short distances, adjust the valve accordingly.

Adjust the scale with the second valve. Both valves are located in the same area.



The third valve is the pressure release valve. It may only be adjusted by an appropriately equipped specialist workshop (195-200 bar).

5.4 Adjustment of the dropping point

The distribution of the fertilizer is determined by the dropping point on the spreader discs. The adjustment of the dropping point in a longitudinal direction is done by moving the spreading device and in a transverse direction by twisting the guiding plates. In extensive trials in the spreading test hall, the optimum setting values have been determined for many fertilizers. If the consistence of the used fertilizer differs, the dropping point must be changed.

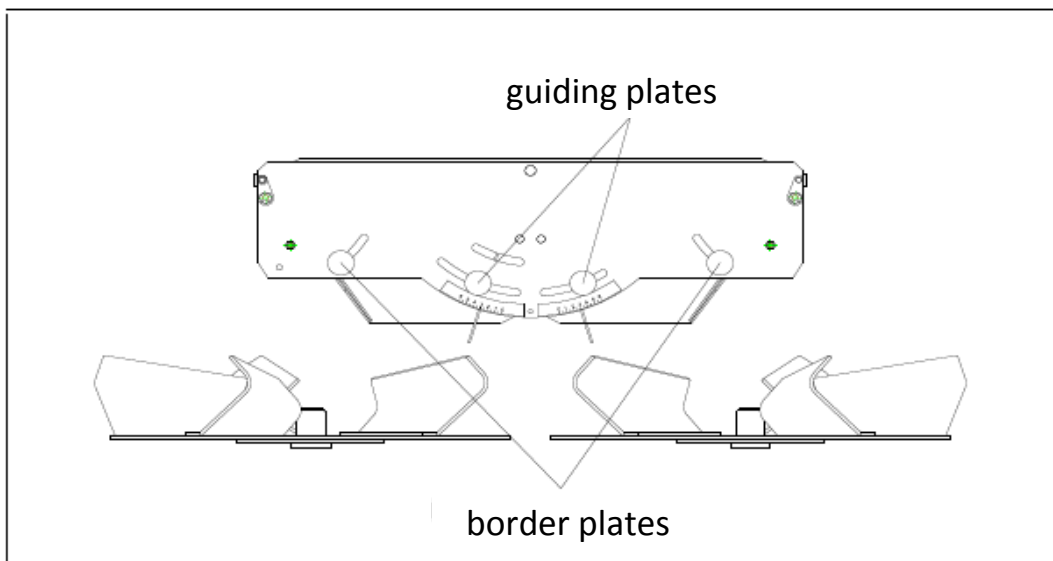
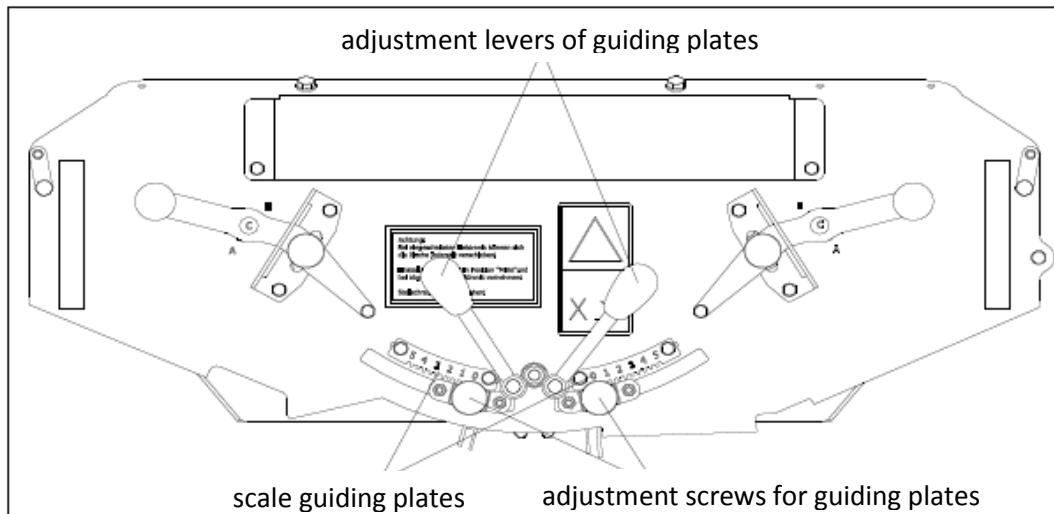
Guiding device:

Adjustment guiding plates:

- Bring the guiding plate to the middle position, turn off the section control
- Loosen the adjusting screws – the adjusting lever must be move freely
- Use the control lever for the desired setting (both sides the same)
- Tighten the adjusting screws (loosen the adjusting lever slightly)

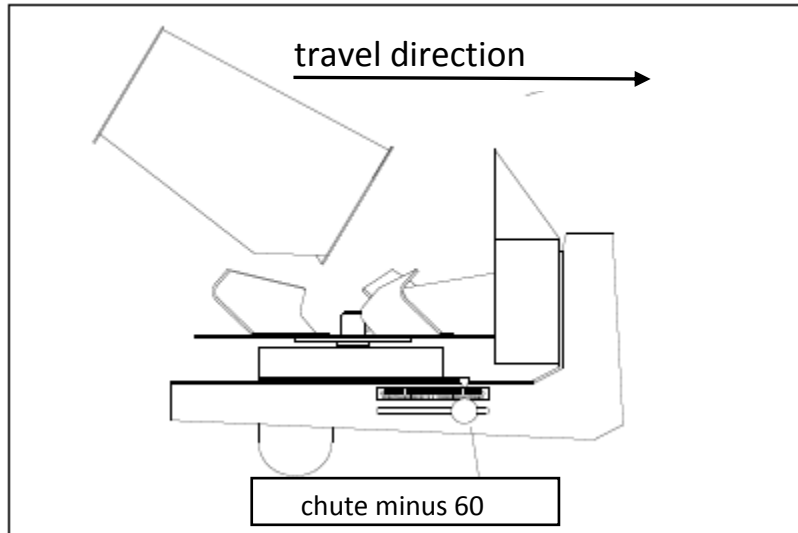
Changing the adjustment on the guiding plates effects the following:

- A decrease of the setting value (from 6 to 0) this results in a stronger distribution of the fertilizer towards the middle.
- An increase of the setting value (from 0 to 6) effects a stronger distribution outward.

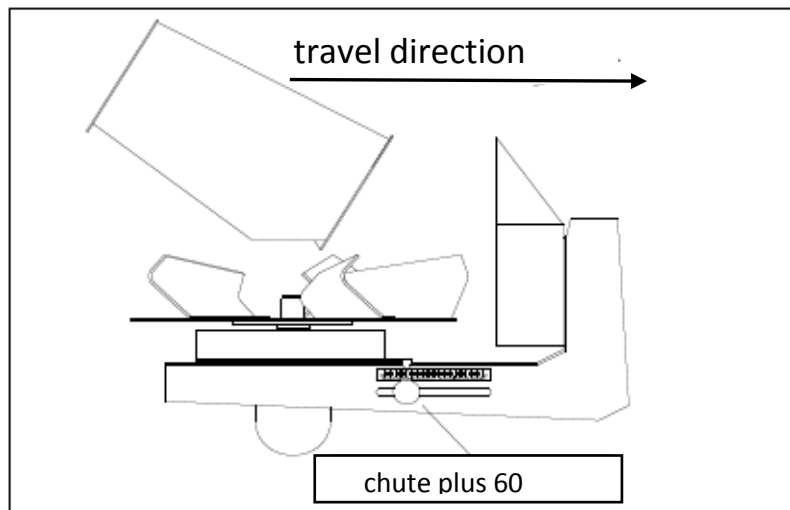


Spreading table (chute):

The signs (settings) at chute have the following meaning:



Minus: means spreader becomes shorter



Plus: means spreader becomes longer

Changing the setting of spreading table effects the following:

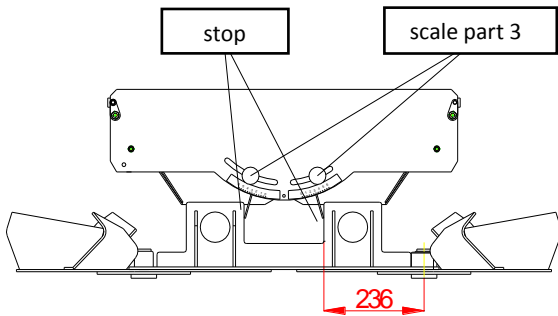
- Moving the spreading table into the plus area effects a stronger distribution of the fertilizer in the middle
- Moving the spreading table into the minus area effects a stronger distribution of the fertilizer outward

If there is congestion of material (lime or similar) in the guiding device, the border plates must be extended. If, however, functional faults occur, the guiding device has to be removed. The spreading pattern will adjust by moving the spreading table exclusively.

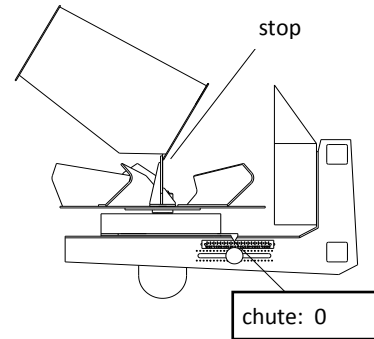
5.5 basic setting

Adjustment values are coherent if the scales are aligned exactly. We recommend checking them before any activity and after repairs/maintenance. The setting aid is placed on the disc hubs and the plates are set against the stop.

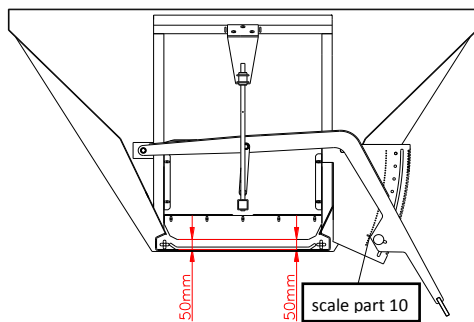
Then loosen the scales. To reach the desired scale value, adjust the scales in elongated holes.



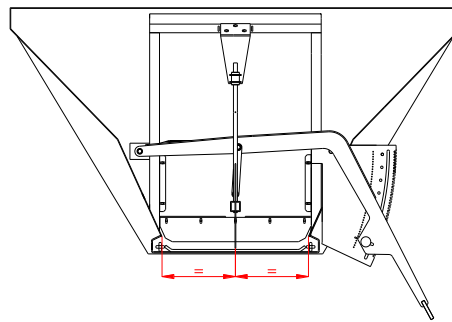
Allocation guiding plate / spreading disc



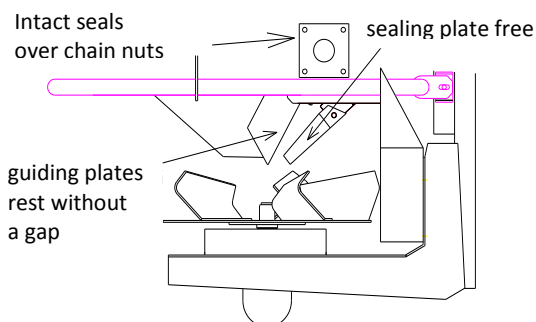
Allocation chute / spreading disc



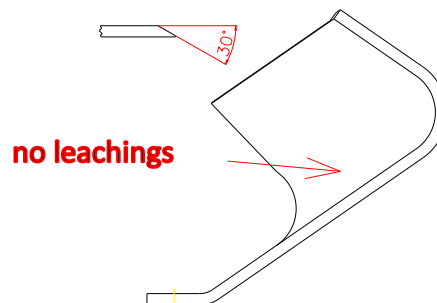
Allocation slider / scale



Alignment of the divider plate



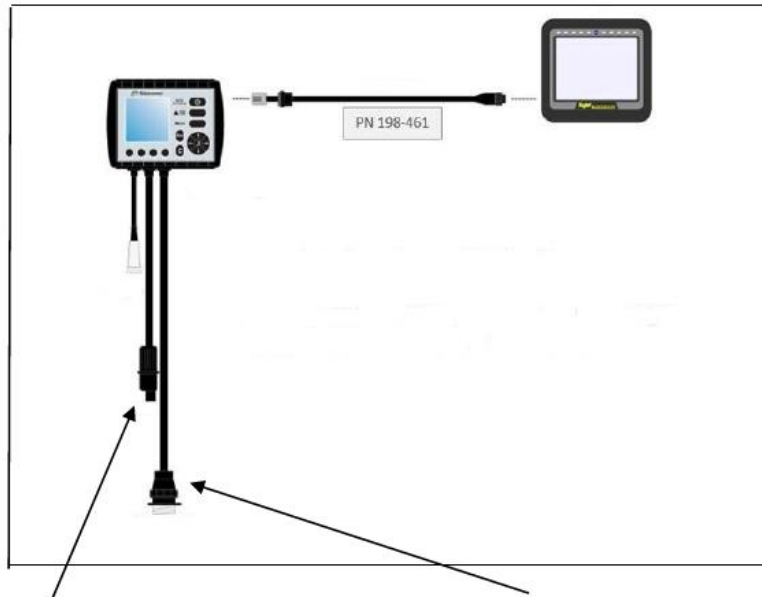
Seals for scraper floor



Wear and tear of vanes

6. Electronics

Mount the TJ 500 and the matrix in the driver's cab (in the view and handle area) then connect the cable.



power supply (12V/6A)

connecting cable to the spreader

Power supply

The TJ 500 is connected to a COBO socket onboard the tractor. (12V/6A).

For connecting with a 24 V a voltage transformer must be used.

For the power supply of the section control and the border spreading device the supplied battery cable **must be routed** inside the tractor (12 V/ 30 A). Mount the socket at the rear of the tractor.

Only this cable will secure trouble-free transmission for the required streams.



Attention! By using a battery cable other than the one supplied, for the section control is not permitted. Fire hazard!

Adjustment without battery cable:

System / servo motors: motor section control => off; section control virtual => on



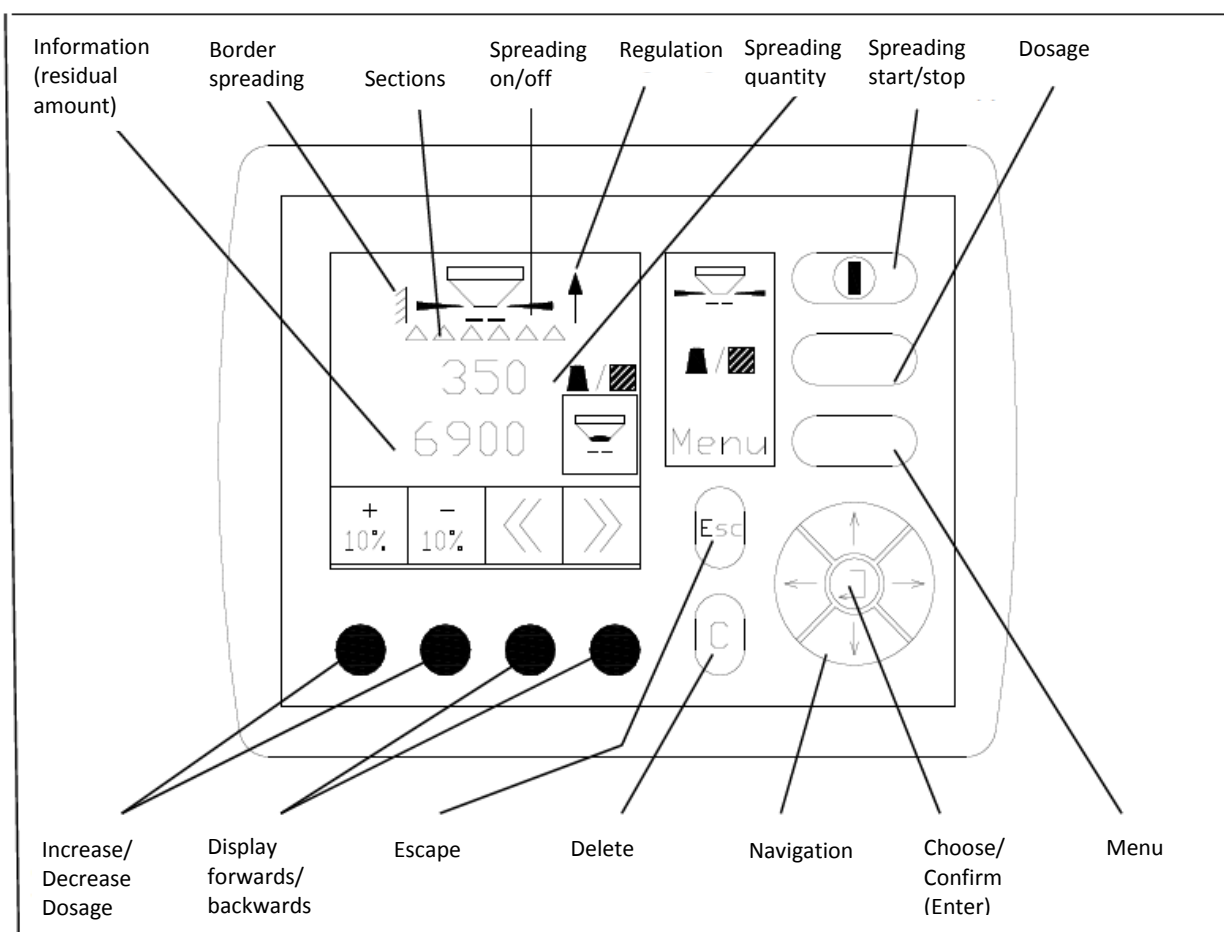
Attention! The connection to 24V or extreme voltage peaks will destroy the electronics instantly. All cables must be protected against clipping and kinking.

After switching on the TJ 500 the servo motors are driven to the end position. A warning message is displayed.



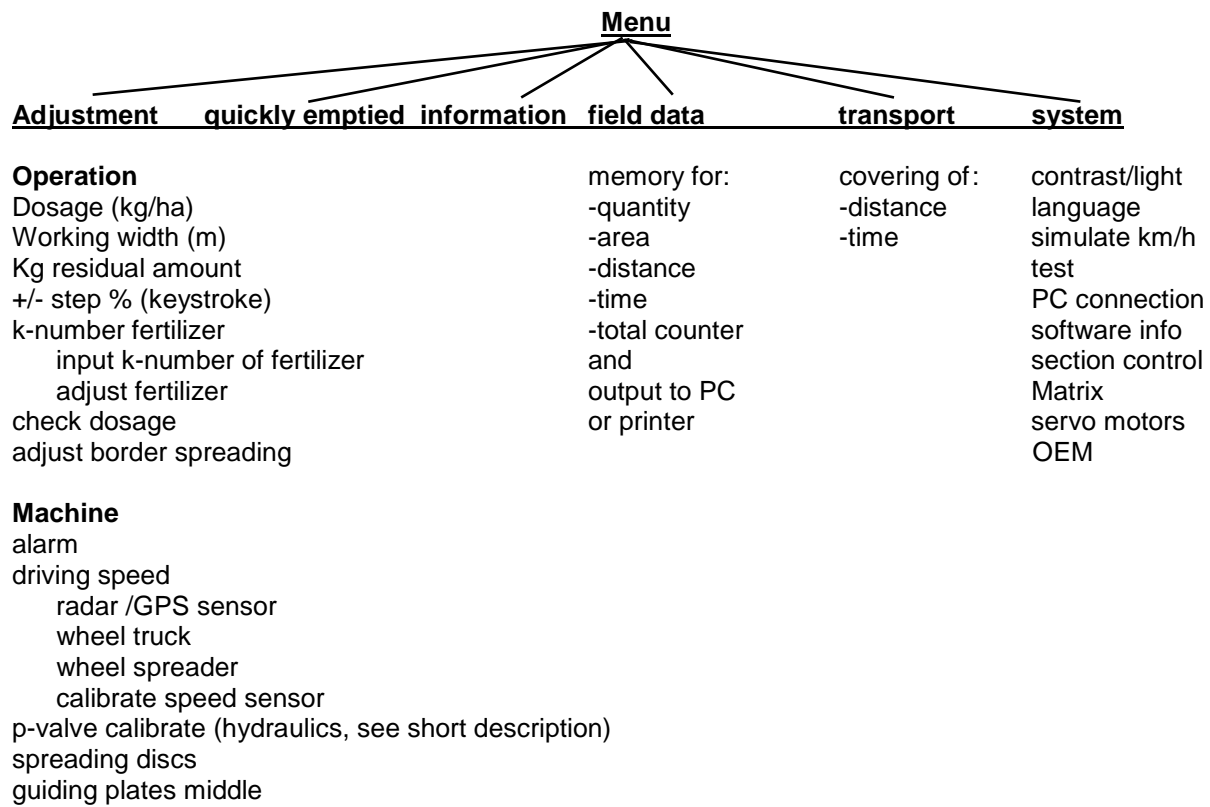
Attention! After starting the TJ 500 the motors can move at any time. Please use caution: There is a clear danger of being entrapped! The operator must ensure that there are no people in a perimeter of 2 m to the guiding device.

6.1 electronic controls TJ 500



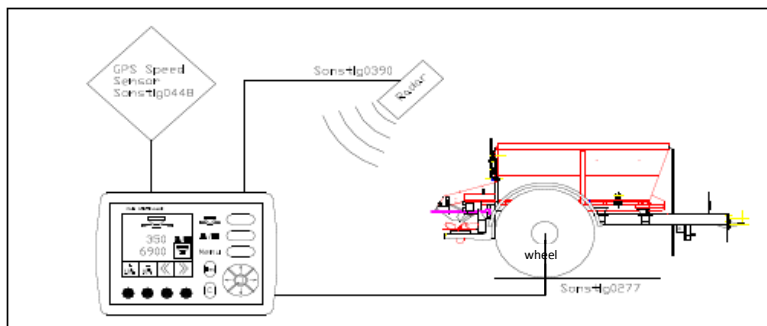
Display Information:

driving speed (km/h)	spreading time/transportation time (h/min)
spreaded area (ha)	throughout (kg/min)
spreaded amount (kg)	speed conveyor shaft
residual amount in the bin (kg)	adjustment working width
spreaded area (ha) with residual amount	speed spreading discs (rpm)
spreading distance (km) with residual amount	sections left
area performance (ha/h)	sections right
Spreading- and transportation distance (m/km)	



Speed Sensor

The driving speed controls the dosage. The calibration of the sensors must be done very carefully. The following sensors are possible:



If the Matrix is connected, it normally provides the speed signal. (TJ 500: system / Matrix / km/h from Matrix)

6.1.1 Setting of the electronic controls unit TJ500

Carry out the following adjustments before commissioning.

1. Calibrate proportional-valve

- Menu/ adjustments/ machine/ chose calibration hydraulics
- Switch on hydraulics installation (ca 60l/min)
- Set motor speed of the tractor, oil should be fully warmed up
- Start calibration
- Keep motor speed constant – the scraper chain must be moving
- Menu returns after calibration is completed
- Switch off hydraulics

Please repeat calibration after changing the tractor

2. Calibrate fertilizer

- Determine fertilizer density with the measuring aid
- Determine k-number from the slider height and fertilizer density (formula or table)
- Menu/ adjustment/ operation/ calibration fertilizer/ enter k-number

K-number must be entered or calculated after every change of fertilizer or changing of slider height.

3. Enter working width (in m)

- Menu/ adjustment/ operation/ choose working width
- Enter working width in m and confirm with “ENTER”

4. Enter dosage (in kg/ha)

Additional

- Set speed of sensor/discs to 3
- Set +/- step to 10 %

5. Operation

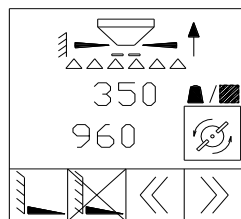
- Switch on spreading discs and hydraulics
- Begin spreading, switch spreading with start/stop key

Adjustment of electronic controls TJ500 with Matrix

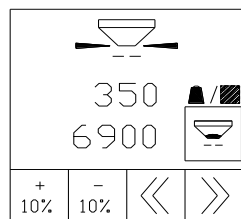
- All adjustments as above
- Connect Matrix (cable 198-461)
- In system/Matrix: activate “Matrix switch on” and “km/h of Matrix”
- In system/ servomotor: activate “servomotor on”
- Under adjustment/ operation/ border spreading: set the values of border spreading

The Matrix may only be switched on after the above procedure.

Operation menu: (examples)



Speed spreading discs/
Border spreading



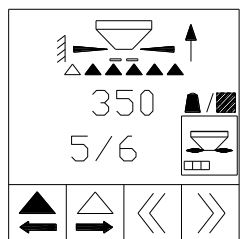
Residual amount/
Manual changing of spreading quantity

Speed spreading discs / border spreading:

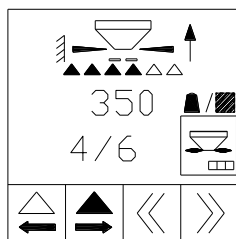
Display for disc speed and for circuit of border spreading. Go with border spreading device to the desired position and decrease the dosage by the desired value. If "border spreading" is displayed, the servomotor is switched off.

Residual amount / manual changing of spreading quantity:

Display of the residual amount and change spreading quantity by preset % - value.



Sections manual
left



Sections manual
right

Section left/right (manually):

It's possible to switch off the outer sections (from total 6 sections). The throw distance will be shortened on only one side and the dosage will adapt.

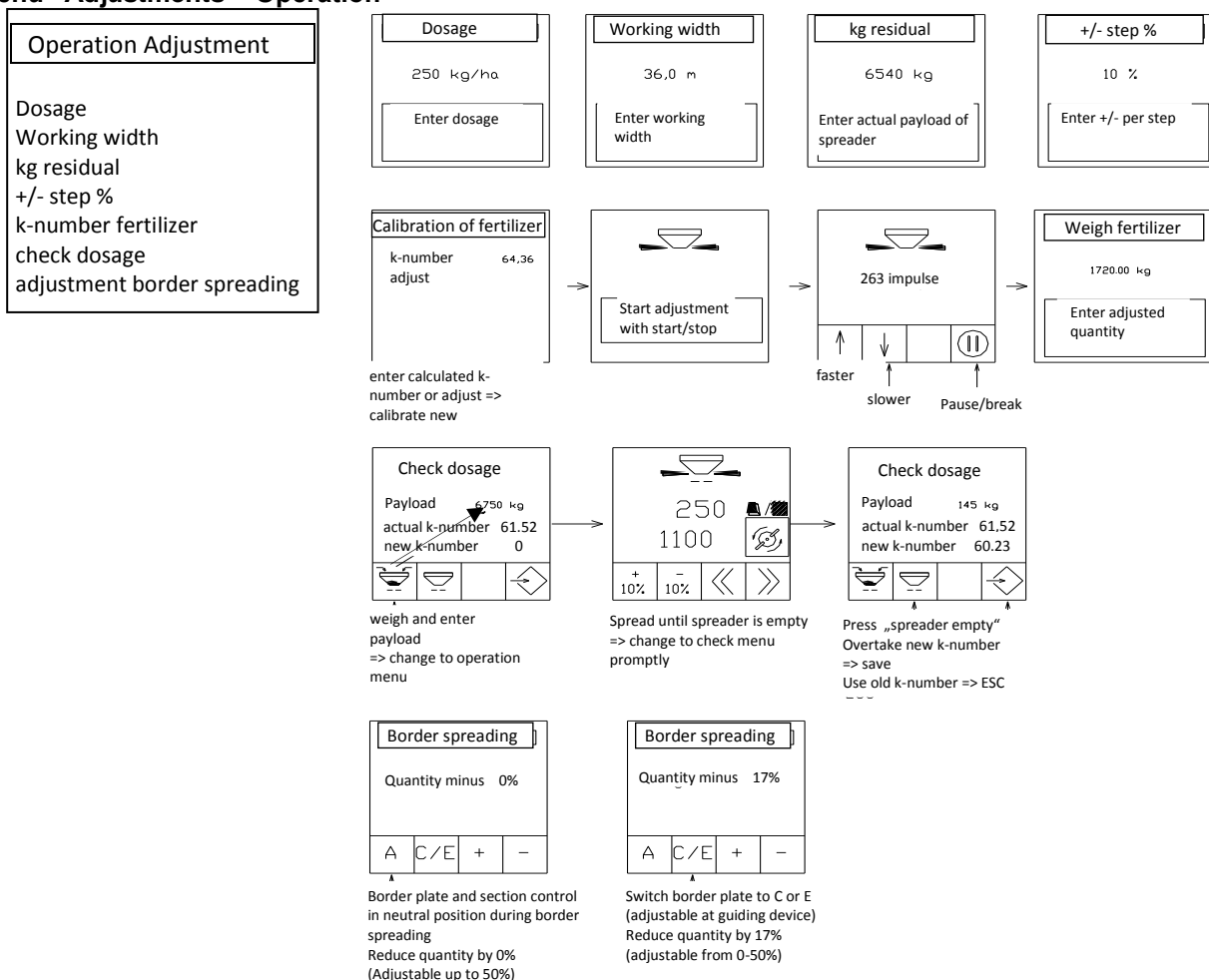
The manual circuit of section has priority over the Matrix. Then please restart the automatic of Matrix.

Adjustment of border spreading: see page 18.

Main menu:

<div style="border: 1px solid black; padding: 2px; text-align: center;">Main menu</div> Adjustments Quick discharge Information Field file Transport System

Menu “Adjustments – Operation”



Dosage:

Working width:

Kg residual:

+/- Step %:

Calibration fertilizer:

Check dosage:

Adjustment border spreading:

enter desired spreading quantity

enter working width in m (can be changed in the working menu)

enter actual fertilizer quantity (counted back during spreading)

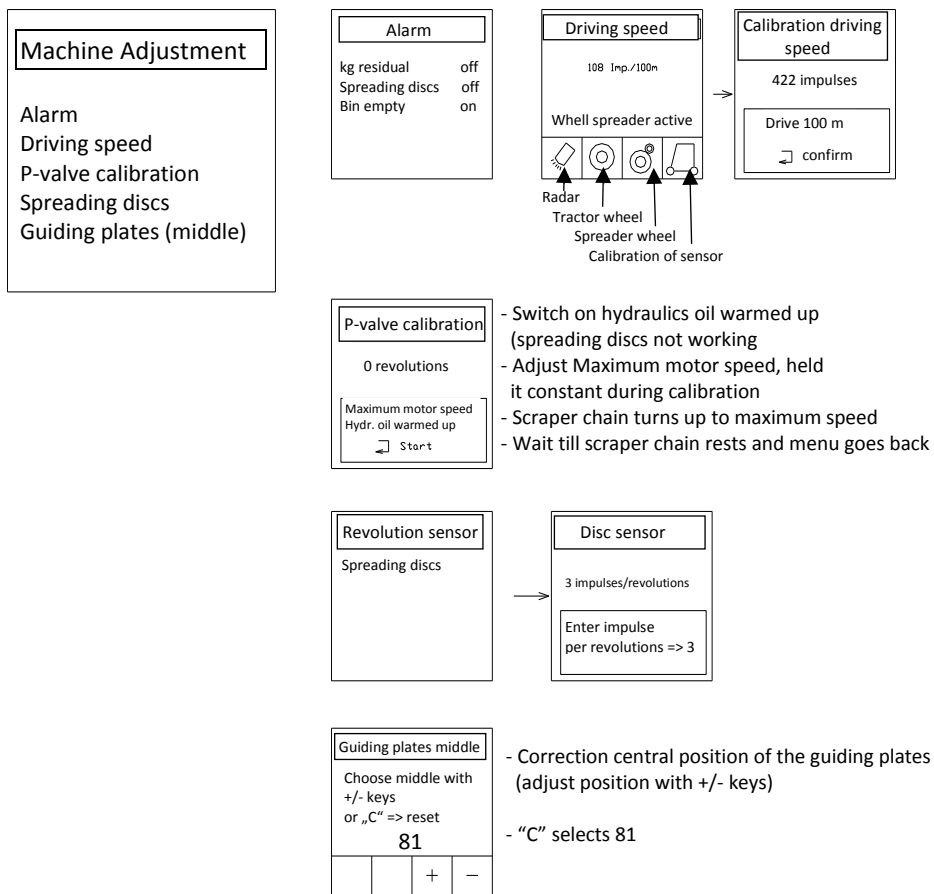
adjust the change of spreading quantity per each key press

enter calculated k-number or call up adjustment/turning menu

call up the semi-automatic dosage control

adjustment of quantity reduction and border plate for border spreading

Menu “Adjustments - Machine”:



Alarm: selection of alarm messages

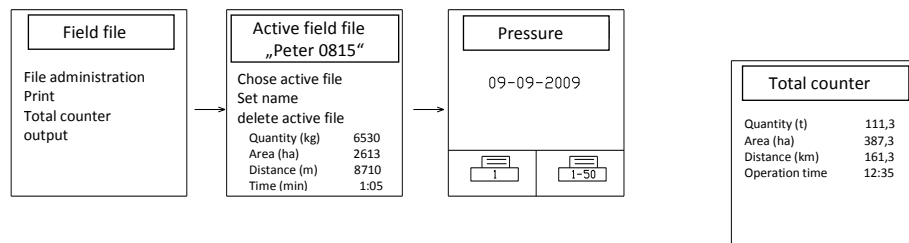
Driving speed: sensor selection and calibration for driving speed

Calibrate p-valve: adapt characteristic curve according to hydraulics of tractor in use

Spreading discs: enter number of measure impulses per revolution of spreading discs (3)

Guiding plate middle: adjustment of middle position of guiding plates

Menu Field file:



The field file can be output by printing or transferred over menu “PC connection” to a device with serial interface (cable 198-405)

The program “Teejet File loader” must be installed on the PC.

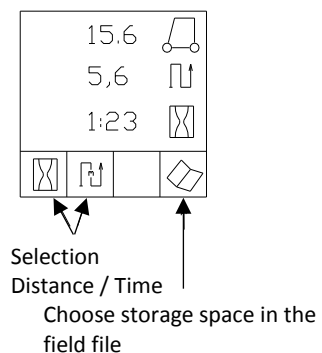
The total counter can also be called up in this menu.

Example (print in HTML form)

Field file					
Field file number	name	quantity [kg]	area [ha]	distance [m]	time
01	ANDREAS 007	0	0.00	0	0:00
02	HANSEL 0088	0	0.00	0	0:00
04	field_21	5892	19.77	8400	0:37
06	field_11	5543	18.55	7728	0:36
07	field_12	7464	25.09	10448	0:44
08	field_23	18923	63.28	26374	1:58
09	field_25	3241	10.83	4508	0:21

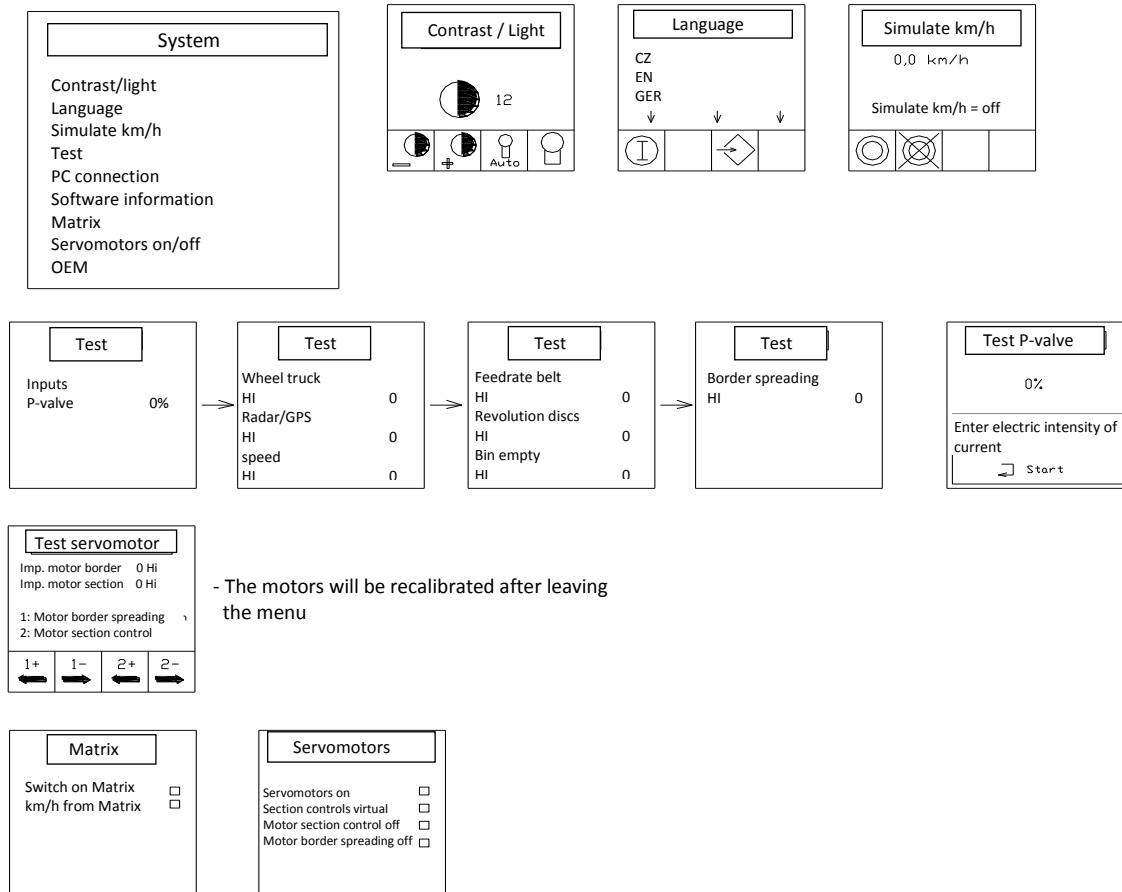
Total counter			
quantity [t]	area [ha]	distance [km]	time
111.8	387.27	161.3	12:35

“Transport” Menu



The transport performance is only recorded when this menu is open.

Menu “System”



Contrast / Light:

Language:

Simulate km/h:

Test:

Inputs:

P-valve:

Test servomotors:

Switch on Matrix:

Km/h from Matrix:

Servomotors:

Attention! If extreme values are set the screen will be blank

select language and confirm with save key

for testing the functionality of the spreader, maximum 19km/h simulated

all sensors are in ‘test’ mode

activates the control valve with electric current (approx. 40%)

the engines can be activated

set connection to Matrix

the automatic on/off of the spreader and the automatic section control circuit are usable

Please refer to the user manual of the Matrix.

the driving speed is transferred by the Matrix.

servomotors can be switched off one at a time, or together.

“section controls virtual on” shows the spreading pattern symmetric.

6.2. Spreading with section control

Spreading of granules:



Attention!

It is only safe to use the section control with granulated, prilled or compacted fertilizer under dry conditions up to a application rate of 600kg/ha.

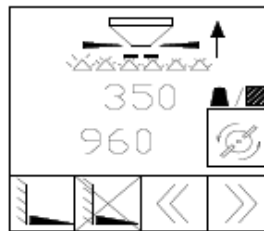
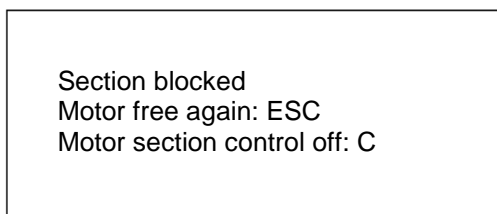
There should be no foreign objects in the spreadable material.

The guiding device must be cleaned regularly. Do not allow fertilizer to accumulate and harden.

You can choose between manual by hand and automatic by Matrix switching for different sections. For adjustments the section control has to be driven allways to the middle position. The adjusting screws must be tight.

The working width is divided into six sections always. The two outer ones can be switched off.

If there are functional troubles (servomotor does not run or does not reach its position) an error message comes up. If it is not possible to eliminate the problem immediately, the drives can be switched off individually. Corresponding symbols will continue to flash.



If the motor needs to be switched off for the section control (e.g. because above mentioned conditions can't be kept), only the spreading quantity in the wedge must be adjusted. The spreading pattern stays symmetrically. If "section controls virtual on" is activated, then the display of the spreading pattern is symmetrically too. The automatic switch-on and switch-off at the headlands will continue.

The guiding plate must be in the middle position.

Spreading of Lime:

It is not suitable to use the section control unit for spreading quantities over 600kg/ha. The section control motor and the border spreading motor must be switched off. (system / servomotor/ activate motor section control off and motor border spreading off). The automatic switching on/off and the adjustment of the quantity in the wedge are controlled by the Matrix. If "Section controls virtual" is activated the indication in the display of the TJ500 is realistic.

If loading is carried out at the edge of the field or if large quantities are spreaded, we recommend dismantling the guiding and border spreading device to protect the components and parts.

Adjustments of the function “Section control”

Switch on Matrix	Adjustment of the spreading quantity	Adjustment of the spreading pattern	Adjustment of menu		Display presentation	
On	On	On	<div><div>-----Servomotors</div><div>Servomotors-on<input checked="" type="checkbox"/> Section-controls-virtual<input checked="" type="checkbox"/> Motor-section-control-off<input checked="" type="checkbox"/> Motor-border-spreading-off<input checked="" type="checkbox"/></div></div>	+	<div><div>-----Matrix</div><div>Switch-on-Matrix<input checked="" type="checkbox"/> <u>km/h</u> from-Matrix<input checked="" type="checkbox"/></div></div>	
On	On	Off	<div><div>-----Servomotors</div><div>Servomotors-on<input checked="" type="checkbox"/> Section-controls-virtual<input checked="" type="checkbox"/> Motor-section-control-off<input checked="" type="checkbox"/> Motor-border-spreading-off<input checked="" type="checkbox"/></div></div>	+	<div><div>-----Matrix</div><div>Switch-on-Matrix<input checked="" type="checkbox"/> <u>km/h</u> from-Matrix<input checked="" type="checkbox"/></div></div>	
On	On	Off	<div><div>-----Servomotors</div><div>Servomotors-on<input checked="" type="checkbox"/> Section-controls-virtual<input checked="" type="checkbox"/> Motor-section-control-off<input checked="" type="checkbox"/> Motor-border-spreading-off<input checked="" type="checkbox"/></div></div>	+	<div><div>-----Matrix</div><div>Switch-on-Matrix<input checked="" type="checkbox"/> <u>km/h</u> from-Matrix<input checked="" type="checkbox"/></div></div>	
On	On	Off	<div><div>-----Servomotors</div><div>Servomotors-on<input type="checkbox"/></div></div>	+	<div><div>-----Matrix</div><div>Switch-on-Matrix<input checked="" type="checkbox"/> <u>km/h</u> from-Matrix<input checked="" type="checkbox"/></div></div>	
Off	On(manual)	On(manual)	<div><div>-----Servomotors</div><div>Servomotors-on<input checked="" type="checkbox"/> Section-controls-virtual<input type="checkbox"/> Motor-section-control-off<input type="checkbox"/> Motor-border-spreading-off<input type="checkbox"/></div></div>	+	<div><div>-----Matrix</div><div>Switch-on-Matrix<input type="checkbox"/> <u>km/h</u> from-Matrix<input type="checkbox"/></div></div>	
Off	On (manual)	Off	<div><div>-----Servomotors</div><div>Servomotors-on<input checked="" type="checkbox"/> Section-controls-virtual<input type="checkbox"/> Motor-section-control-off<input checked="" type="checkbox"/> Motor-border-spreading-off<input type="checkbox"/></div></div>	+	<div><div>-----Matrix</div><div>Switch-on-Matrix<input type="checkbox"/> <u>km/h</u> from-Matrix<input type="checkbox"/></div></div>	
Off	Off	Off	<div><div>-----Servomotors</div><div>Servomotors-on<input checked="" type="checkbox"/> Section-controls-virtual<input checked="" type="checkbox"/> Motor-section-control-off<input checked="" type="checkbox"/> Motor-border-spreading-off<input type="checkbox"/></div></div>	+	<div><div>-----Matrix</div><div>Switch-on-Matrix<input type="checkbox"/> <u>km/h</u> from-Matrix<input type="checkbox"/></div></div>	
Off	Off	Off	<div><div>-----Servomotors</div><div>Servomotors-on<input type="checkbox"/></div></div>	+	<div><div>-----Matrix</div><div>Switch-on-Matrix<input type="checkbox"/> <u>km/h</u> from-Matrix<input type="checkbox"/></div></div>	

6.3 Matrix Pro GS

Detailed information about adjustment and operation are written in the instruction "MATRIX PRO GS". The following notes are a brief guide and supplement to the software 4.21.

Connect the Matrix as described under pt 6. Fix the delivered antennal in the middle of the tractor roof. Avoid 'shading' the antenna with other objects. A more powerful antenna (RXA – 30) with a longer cable or a Matrix for the GLONASS system maybe ordered as an additional option.

Matrix Pro 570 GS and Matrix Pro 840 GS are distinguished by the display size. The software is the same.

Settings on the Matrix:

In some instances, it is only possible to change values when no job has been started. We recommend the following settings:

Device:

- Device type: moved
- Symmetrical device layout: activated
- Number of sections: 6
- Tracking width: working width (e.g. 24 m)
- Application width : width of sections (e.g. 4 m => 6 x 4 m => 24 m)
- Droplet size monitor: deactivated
- Selecting of nozzle: --
- Boom pilot start mode: automatic

GNSS Receiver- configuration:

- GNSS – type: GPS / SBAS
- GNSS – port: internally
- GNSS status information: show status
- PRN: automatic

Culture:

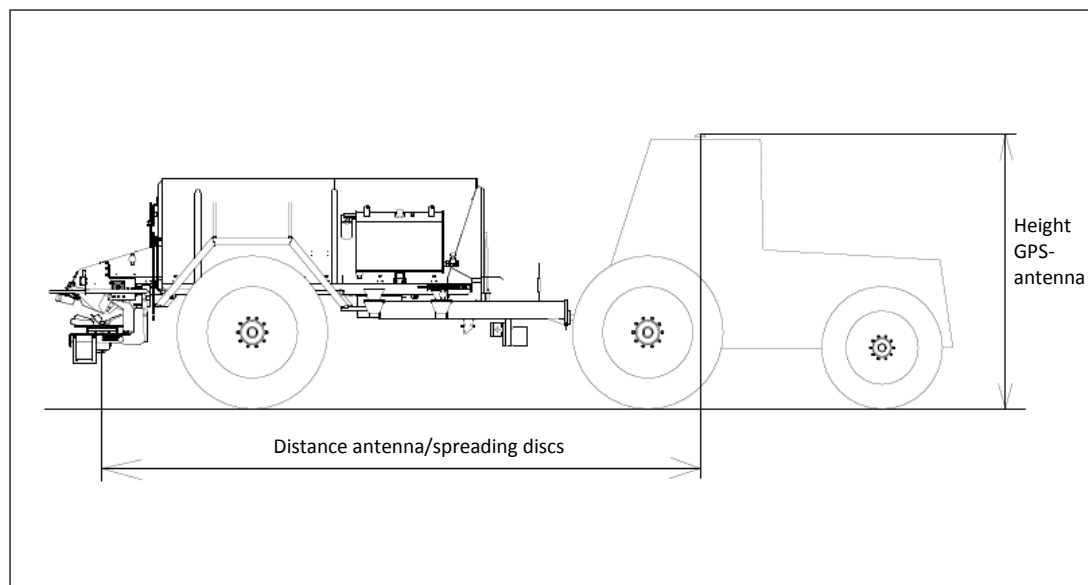
- Measurements units: metric
- language: German
- time zone: Europe – Copenhagen

Note:

You have the possibility to calibrate the display under menu "presentation" under the touch screen calibration. If the shown points are not chosen correctly, the touch screen display is with not function. By using the USB Stick the program 'data killer' can restore the factory default settings.

Device type: moved

- In-line section 1 offset direction: behind
- In-line section 1 offset distance: distance antenna/ spreading discs (is to measure) +a



	Standard wing discs	H – spreading disc unit
Working width	a	a
18 m	4,6 m	/
24 m	4,7 m	2,8 m
28 m	7,2 m	4,2 m
32 m	7,6 m	3,2 m
36 m	5,3 m	1,4 m
40 m	/	1,1 m

Values for distance a

Example:

Distance antenna / spreading discs (measured) $\Rightarrow 8,4\text{m}$
 H-spreading disc unit/working width 32 m \Rightarrow value a from table $\Rightarrow 3,2\text{m}$
 Distance antenna/section 1: $8,4\text{ m} + 3,2\text{m} \Rightarrow 11,6\text{m}$

- lateral device offset direction: right (if antenna is mounted in the middle)
- lateral distance of the device is offset: 0,00 m (if antenna is mounted in the middle)
- overlap: 50 %
- delay time "on": 0 s
- delay time "off": 0 s
- sections – offset value: see table

	Standard wing discs						H-spreading disc unit					
working	Section						Section					
width	1	2	3	4	5	6	1	2	3	4	5	6
18 m	0,0 m	-1,9 m	-4,0 m	-4,0 m	-1,9 m	0,0 m	/	/	/	/	/	/
24 m	0,0 m	-2,5 m	-4,1 m	-4,1 m	-2,5 m	0,0 m	0,0 m	-1,5 m	-2,3 m	-2,3 m	-1,5 m	0,0 m
28 m	0,0 m	-3,5 m	-5,9 m	-5,9 m	-3,5 m	0,0 m	0,0 m	-2,5 m	-3,7 m	-3,7 m	-2,5 m	0,0 m
32 m	0,0 m	-4,3 m	-6,6 m	-6,6 m	-4,3 m	0,0 m	0,0 m	-1,0 m	-2,7 m	-2,7 m	-1,0 m	0,0 m
36 m	0,0 m	-2,2 m	-4,7 m	-4,7 m	-2,2 m	0,0 m	0,0 m	2,7 m	-0,9 m	-0,9 m	2,7 m	0,0 m
40 m	/	/	/	/	/	/	0,0 m	3,5 m	-0,5 m	-0,5 m	3,5 m	0,0 m

Offset section (device type moved)

Create a task:

Before creating a task a valid GPS signal must be established. The antenna must be unobstructed.

- Simple mode: no evaluation desired
- Expanded mode: data saving and utilization are intended

Border spreading:

- Switch on the Matrix and wait for a valid GPS signal
- Create a new task or start a saved task
- When beginning border spreading start menu "drive around field"
- Just before the end of border spreading choose "complete drive around field"

Display GPS signal - Status: DGPS

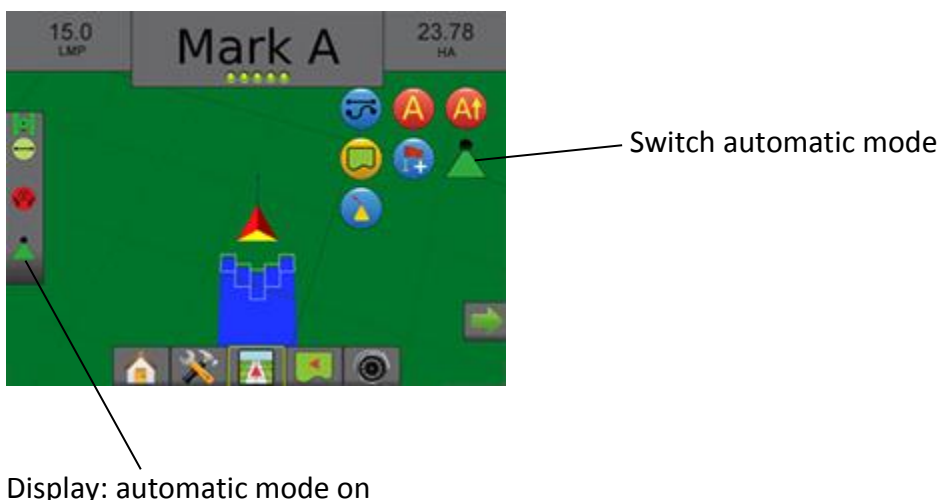


This procedure will record the outer field border and will show up on the display. Please proceed with border spreading around internal field spaces as well. Up to 5 fields may be recorded.

It is not possible to interrupt the recording of the field contour. Please check if there is enough fertilizer loaded for the drive around field. Nevertheless it is possible to spread automatically if no field border is created. Please note that the spreader will also spread outside the field border.

Normal spreading:

Before starting automatic mode switch off the border spreading of TJ 500 and activate spreading.



The work of the operator is limited to driving on the guidelines. Switching on and off the spreader at the headlands and changing of application rate and – spreading pattern takes place automatically.

End /interrupting spreading:

For loading stop spreading on TJ500. In the case of longer distances end the task. It is possible to restart the TJ 500 after loading.

The read out of the saved files will be done with an USB stick.



Important:

After finishing job first switch off the Matrix and then TJ 500.

Note:

It is possible to choose “spreading device” under device type (ABSC). The sections will be presented as surfaces.

Activation of this mode is not allowed in Germany due to patent law. If required please contact the company TeeJet.

The adjustment values for this mode can be requested from us.

Spreading with the use of application cards

The application card must be read by the "Fieldware Link" program and converted into a TeeJet format. It is then transferred to the Matrix with the USB stick.

Two additional cables must be connected. (197-896 and 45-05898)



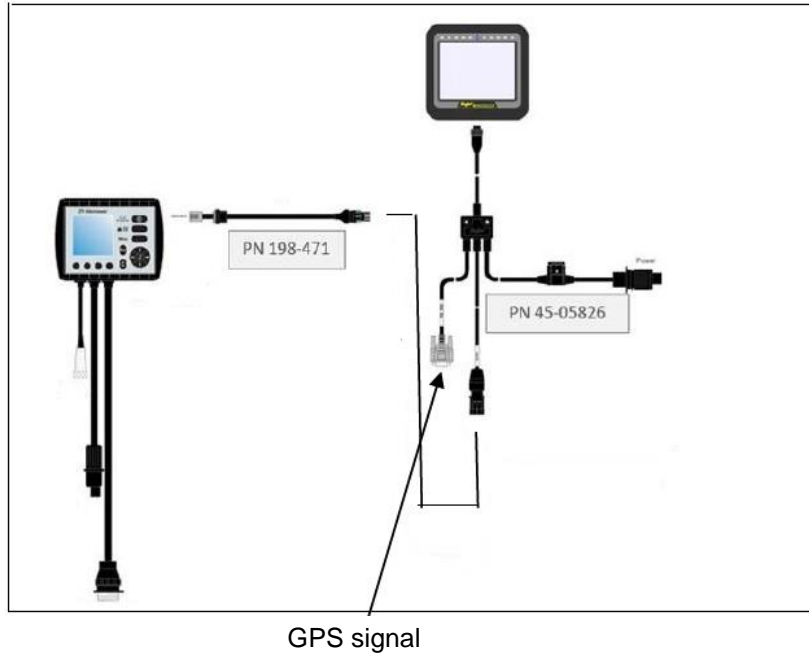
The Matrix must be activated once, chargeable.

The necessary adjustments of the Matrix are described in the operation manual Matrix PRO GS. We recommend using antenna RXA-30 for stable reception.

6.4 Connection Options:

External GPS signal

If you choose to operate with Omnistar HP / XP or RTK GPS signals, you must use different cables between the TJ500 and Matrix. (198-471 and 45-05826 instead of 198-461).



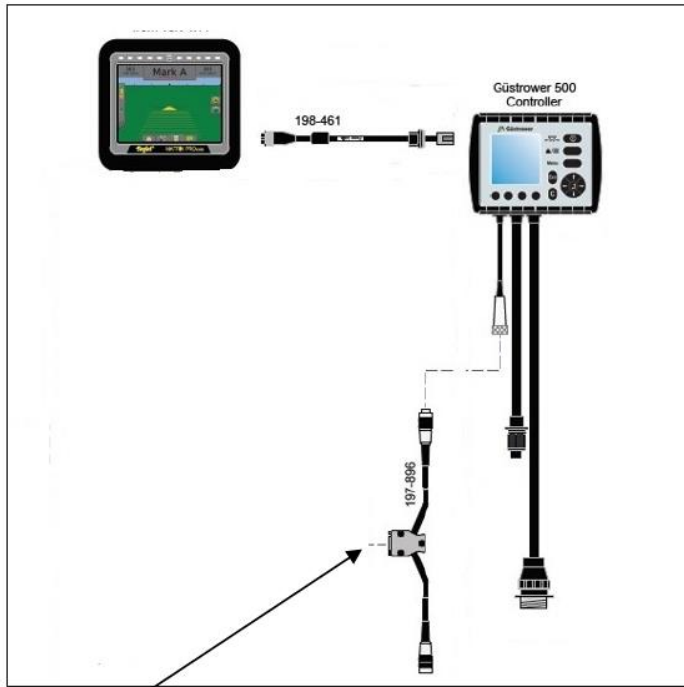
The power supply of the Matrix is conducted by the COBO plug in the cable and not by the TJ 500. An additional socket is necessary. The necessary settings of the Matrix are described in the operating instructions Matrix PRO GS

External Electronics:

Cable 189-286 (without Matrix) or 197-896 (with Matrix) must be connected between TJ 500 and external electronics (if external electronics like N-Sensor, Trimble etc. are used for reading and rewriting of spreading quantities). Please choose the LH5000 protocol in the external electronics.

The application rate is then set manually or via the automatic functions available on the terminal or the actual quantity is written back. All other settings will continue to be made on the TJ500.

When the connection is established the dosage quantity 0kg/ha is displayed on the TJ500 (if no value is specified by external electronics).



Serial connection for external electronics.

ISOBUS Terminal:

For ISOBUS terminals without a serial interface an interface device (serial/ISOBUS) can be delivered (Sonstig0468).

With this option, a user interface will be uploaded to the terminal, where the spreading quantity can be adjusted manually, or via the automatic functions available in the terminal.

All other settings are still done on the TJ 500.



TJ500 with interface device serial / ISOBUS

Parallel operation:

Parallel operations (e. g. spreading quantity with sensor and ISOBUS and section control with Matrix) are possible. The cable 197-896 should be connected between the TJ 500 and external electronics.

6.5 Troubleshooting (Electronics)

problem	reason	resolution
TJ 500 cannot be switched on	incorrect polarity of the power supply short circuit in cable harness	change clamp of power supply or clamp directly on battery pull plug on draw bar => TJ500 can switch on -disconnect sensor single successively + switch on TJ500 -change sensor with the short circuit
No display on Display	contrast adjusted	press and hold the C key Adjust contrast
Error message: NMI	magnet has winding termination error in power supply of tractor	ohmic resistance of magnet of p-valve 3,5 Ohm => measure Other value => change valve clamp power supply directly to battery
Spreader is not spreading fertilizer	faulty hydraulics travel speed is not measured dosage value is missing spreading width is missing calibration value is missing electric faulty	check and repair hydraulics with manual emergency stop (see page 48) see below enter dosage value enter spreading width calibrate spreader check connection -switch on hydraulics + menu/system/test/valve to100%, => if scraper chain doesn't run: -check <u>all</u> fuses in the tractor (or clamp power supply directly on battery) -measure ohmic resistance of valve magnet => should have = 3,5 Ohm -disconnect valve from plug and measure voltage to100% / 50% / 0% =>voltage equal: change TJ 500 =>voltage changes: change valve
Scraper chain is running always	manual emergency stop on adjust to zero point of proportional valve	unscrew manual wheel execute „calibrate hydraulics“ menu

problem	reason	solution
Error message: „Feed level to low“	not enough oil from tractor	increase hydraulics
Spreader is spreading fertilizer, but reports spreading error	travel speed is too high or slider too low (regulator arrow up)	decrease speed or increase slider height (new k-number fertilizer)
	scraper chain feed is to low (regulator arrow down)	decrease slider height (new k-number fertilizer)
	zero- point of proportional valve needs adjustment	repeat „calibrate p-valve“ Menu
	k-number fertilizer wrong	check k-number with formula
	feed rate sensor defective (fauitry)	check sensor: manual handling + check initial feed rate => no impulses: change sensor
	distance of magnets at brake drum uneven	replace lost magnets
Display of spreading discs wrong	menu adjusted	set rotational speed sensor „disc“ to 3
	sensor faulty	-check distance advance (0,5 mm to tooth tip) -change sensor
Incorrect function of tank alarm	sensor adjusted	set as opener: arrow on turning switch must show to the right towards „opener“ empty adjustment: use the rotary knob to set the light bar to the left of center (only use the supplied cable!)
	position of sensor is wrong	sensor should be approx. 1 cm into the bin
Speed is not being registered	menu adjusted	choose new and calibrate speed sensor
	no impulse	menu „test inputs“ and drive: check sensor switch distance (10 mm) -check sensor with magnet => cable break or change sensor

problem	reason	solution
Alarm: „Motor section control blocked“	guiding plate is jammed or foreign objects block guiding device	clean guiding device or remove foreign objects (in case of unsuitable fertilizer switch off section control motor)
	zero point adjusted	reactivate motor
	power supply too weak	check battery cable, fasten contacts
	motor faulty booster faulty	change motor change booster
Alarm: „Motor border spreading blocked“	deflector jammed	clean deflector
	zero point adjusted	reactivate motor
	motor faulty	change motor
	circuit board faulty	change circuit board
No valid GPS signal	antenna is obstructed	choose a location with a free view use better antenna in case of frequent shading => RXA - 30
	wrong settings	adjust GPS port internally
	antenna faulty	change antenna
Matrix: Display blocked	touchscreen calibration faulty	unlock display with software „datakiller“ (load on a USB stick, connect USB stick and switch on Matrix)
Only one section selectable	on the TJ500 „Matrix switch on“ is not activated	switch off Matrix and activate “switch on Matrix” on TJ500, then switch on Matrix



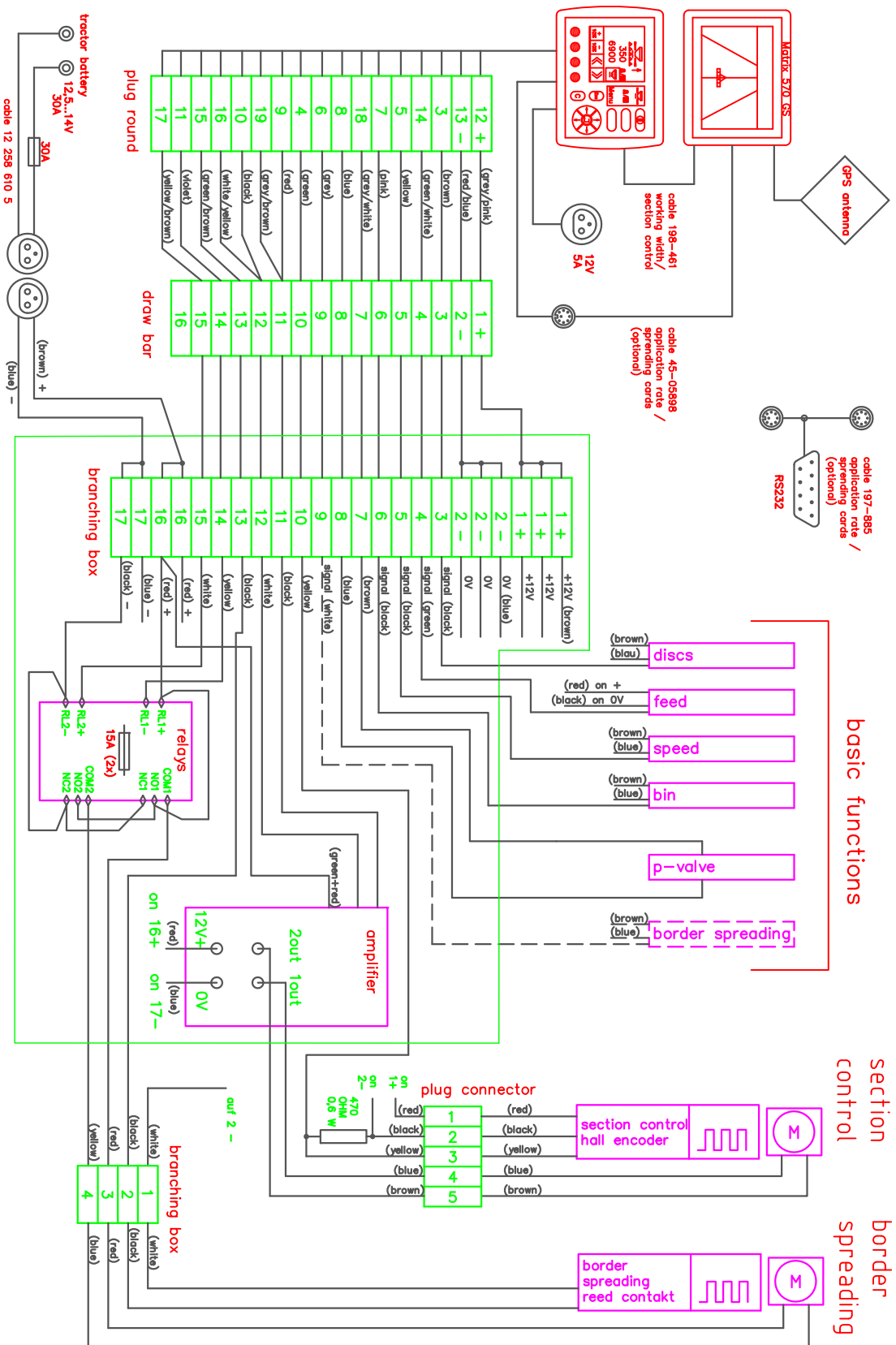
Note:

The TJ500 and Matrix Pro GS work maintenance-free. However, care must be taken to ensure that fertilizers reach not the electrical contacts in the plug, the distribution box or the sensors. When TJ500 is disconnected, please close the connection box. When washing the spreader do not point the water jet directly on electronic parts.

TJ500 and matrix are not protected against wetness. Please use and store them in dry environments only.

Please keep yourself current with software updates regularly.

www.gmb-guestrower.de
www.teejet.de



spreader with section control (01 / 2017)

7. Care and Maintenance

The most important care measure of the spreader is regular cleaning, followed by greasing. Please do not use high-pressure cleaners in the **first six weeks** because the varnish on new units need time to harden.

daily measures:

- clean guiding devices, sealing plates and spreading discs
- check if the spreading units is clogged, especially the silent blocks , spreading discs and spreading vanes
- check and clean all lights

weekly measures:

- clean spreader, remove fertilizer lumps
- check if all screw connections are fastened, especially wheel nuts and towing eye
- check the scraper chain for bent bars and chain tensioning (spring length 130 mm)
- check the function of the seals of the scraper floor (trickle losses)
- greasing according to plan

measures after close up campaign (season):

- all daily and weekly activities
- check seal function on scraper floor
- clean all sliding surfaces as well as re-adjust the fixing screws of the spreading unit console (the console must be displaceable without play)
- check basic setting of the spreading unit
- soiling on hydraulics – check oil filter and if necessary change it
- repair varnish damages
- adjust wheel bearing and brake (by a certified dealer)
- check wear and tear of towing eye (new bushing roll or change towing eye)

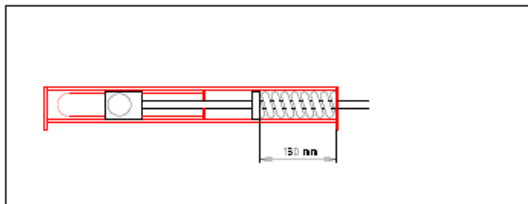
Shorten the scraper chain by 2 links if it cannot be retensioned – this is done by disassembling the guiding device over the chain nuts. To weld the chain, chain elements with a weld pool are available, which are welded with MAG (2.3 V and 21.8 A).

If the chain is stretched to an extent that the chain nut cannot be inserted the scraper chain must be replaced.

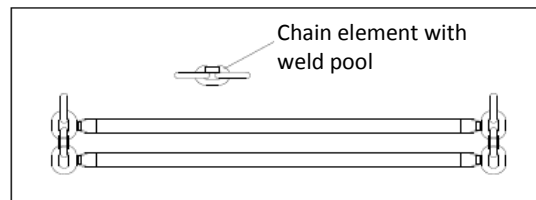
When new chain nuts are installed, the markings must be aligned with each other.

The chain nuts are kept clean by 'Profile' cleaners. The cleaning element has a distance of 1 mm from the profile base.

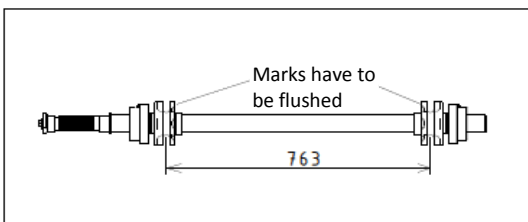
Pay attention to the correct seating of all seals. Before disassembling the conveyor shaft, the feed gear is pulled from the shaft with the M24 screw. (Internal thread in the bushing).



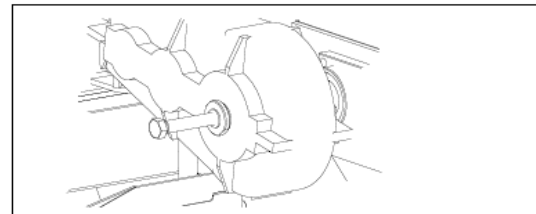
Chain preload 130mm



Weld scraper chain



Assembly of chain nuts



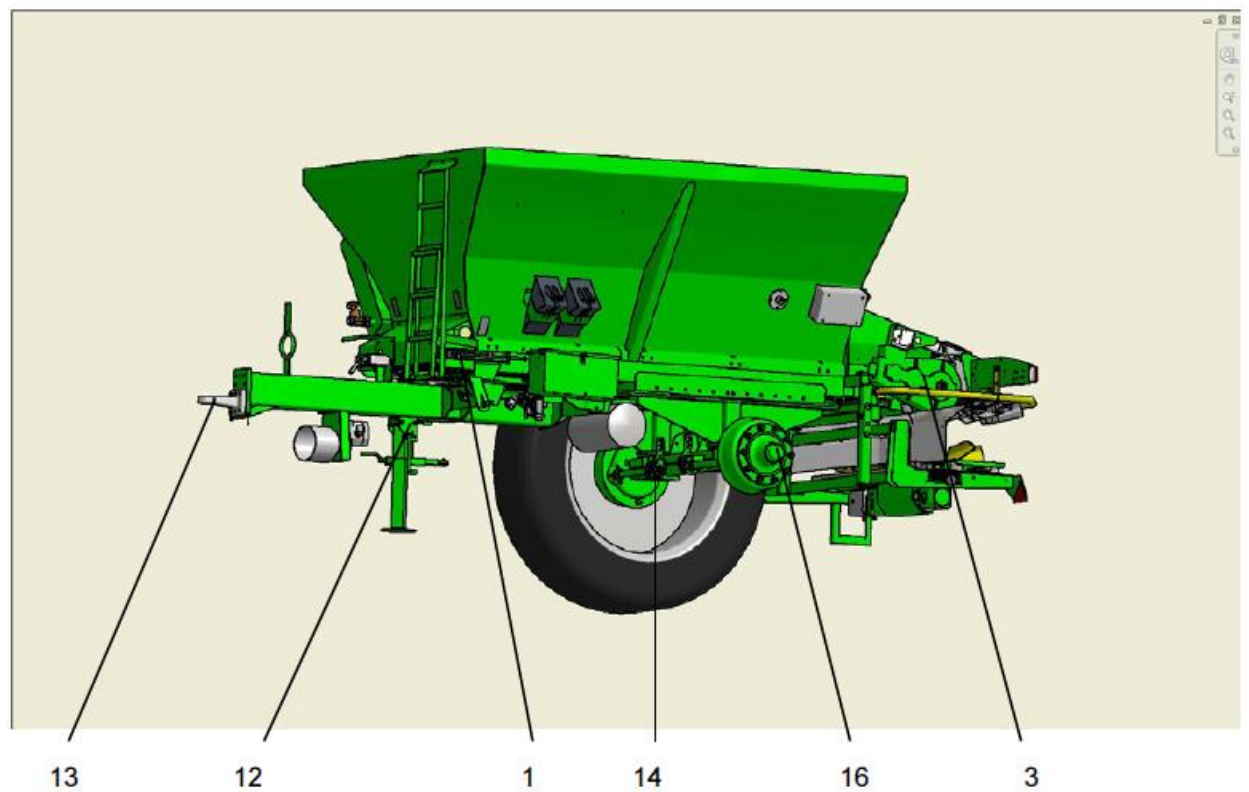
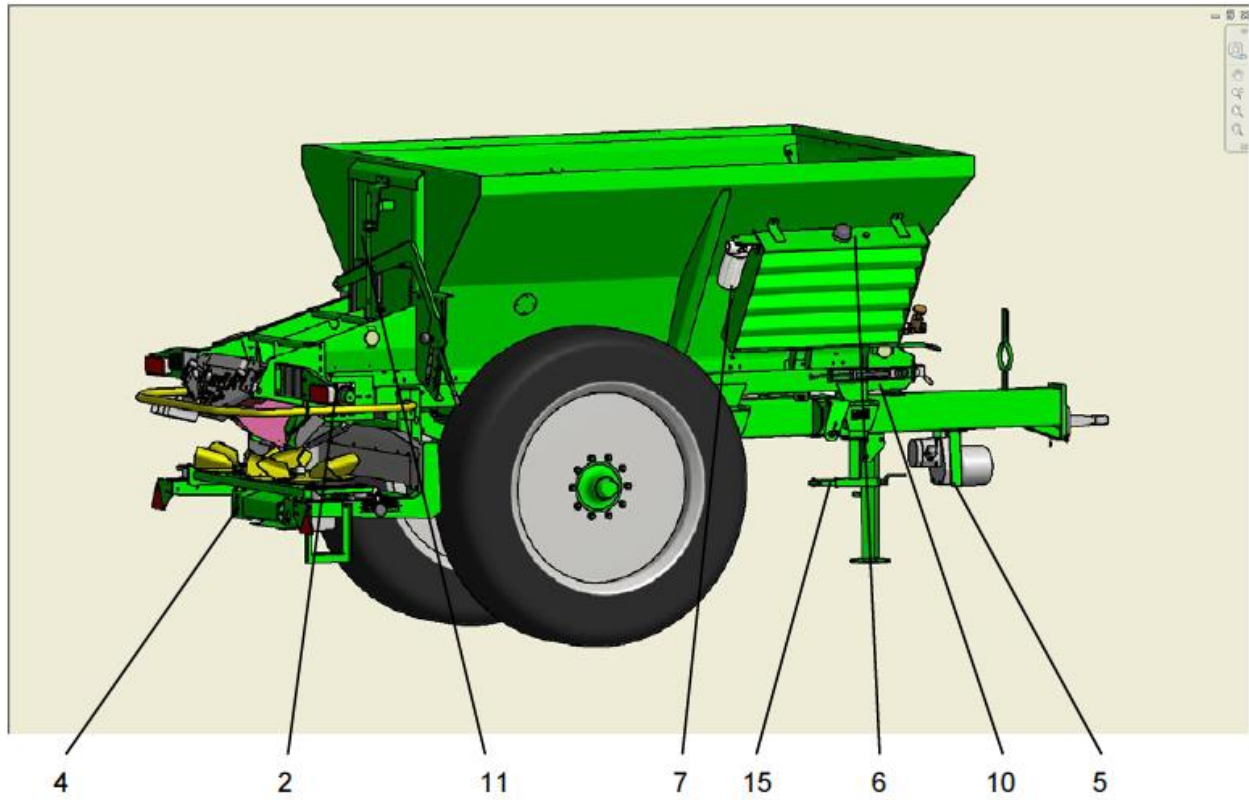
Disassemble advanced gear

Greasing plan

No.	Greasing point/device	lubricant / activity / quantity	How often
1	Guide roller	Roller bearing grease/ greasing / upon need	weekly
2	Conveyor shaft	Roller bearing grease/ greasing / upon need	monthly
3	Advanced gears	Gear oil CLP 220 / level control Gear oil CLP 220 / change / 3,5 l	monthly after first 100 h, then every two years
4	Bevel gears	Gear oil CLP 220 / level control Gear oil CLP 220 / change / 0,5 l	monthly after first 100 h, then every two years
5	PTO shaft gears	Gear oil CLP 150 / level control Gear oil CLP 150 / change / 0,52 l	monthly after first 100 h, then every two years
6	Oil tank	Hydraulics oil HLP 46 / level control Hydraulics oil HLP 46 / change / 70 l	monthly every 4 years
7	Oil filter	Filtering cartridge / change	after first 100 h, then follow display instruction
8	PTO shaft	Roller bearing grease / greasing	weekly
10	Clamping device	Roller bearing grease/ brushing / upon need	monthly
11	Dosage slider	Roller bearing grease/ brushing / upon need	yearly
12	Supporting foot (jack)	Roller bearing grease/ brushing / upon need	monthly
13	Towing eye	Roller bearing grease/ brushing / upon need	weekly
14	Brake linkage	Roller bearing grease/ greasing / upon need	weekly
15	handbrake	Roller bearing grease/ brushing / upon need	weekly
16	Wheel hub	Roller bearing grease/ brushing / upon need	yearly
17	Tandem axle, pendulum	Roller bearing grease/ greasing / upon need	weekly
	Crumble roller		
32	pin / shaft	Roller bearing grease/ greasing / upon need	daily
33	Rolling chain	Roller bearing grease/ greasing / upon need	weekly
34	carrier	Roller bearing grease/ greasing / upon need	weekly
35	Coupling cage	Roller bearing grease/ greasing / upon need	monthly
36	Chain tensioner	Roller bearing grease/ greasing / upon need	monthly
37	Pedestal bearing, left	Roller bearing grease/ greasing / upon need	monthly

Gear oils CLP 220 and/or 150 match ISO VG 220 and/or 150 (ISO 311 and/or DIN 51519 (industrial greasing oil). For both the motor vehicle gearing oil SAE 90 is comparable. Use high grade oils only

Greasing plan



7.1 Troubleshooting (Mechanics)

Problem	Reason	Solution
Scraper chain is not moveable with manual controls	<ul style="list-style-type: none"> - tractor hydraulics is not delivering oil - quick coupling doesn't open - scraper chain is blocked - hydraulic pressure too low 	<ul style="list-style-type: none"> - check oil level - check settings - engage coupling - change quick coupling - open slider and remove blockage - adjust pressure relief valve in spreader and tractor (200 bar)
Spreading disc speed too low	<ul style="list-style-type: none"> - wrong PTO shaft speed - adjust valve - pump is worn - motor is worn 	<ul style="list-style-type: none"> - PTO shaft speed 1000 rpm - adjust control valve new - check and change pump - change motor
Hydraulic oil becomes too hot	<ul style="list-style-type: none"> - oil tank is not full - spreading discs drag - spreading unit overload - pump is worn 	<ul style="list-style-type: none"> - refill oil - unlock spreading discs - reduce speed - check and change pump
Bars on conveyor chain are bent	<ul style="list-style-type: none"> - foreign object obstruction 	<ul style="list-style-type: none"> - remove foreign objects, fix bars - adjust slider higher - use sieves
Scraper chain jumps off	<ul style="list-style-type: none"> - preload too light - adjust profile cleaner - chain nuts are worn - scraper chain is worn 	<ul style="list-style-type: none"> - retensioning of chain (130mm) - adjust profile cleaner (gap 1 mm) - change chain nuts and scraper chain - change scraper chain
Chain tensioner is bent	<ul style="list-style-type: none"> - wrong running direction of scraper chain 	<ul style="list-style-type: none"> - connect return hose in free return of the tractor
Section control is blocked often	<ul style="list-style-type: none"> - guiding device has foreign objects - fertilizer for spreading with section control is unsuitable 	<ul style="list-style-type: none"> - clean guiding device (sector gear front and back, if necessary swap out guiding device) - switch off section control

8. Technical data

All data in reference to basic equipment. (25 km/h, pneumatic brake)

	GDK5.000	GDK6.000	GDK7.000	GDK8.000	GDK9.000	GDK10.000
Data for wheel: 18.4 R38	18.4 R38	18.4 R38	18.4 R38	18.4 R38	570/70 R38	570/70 R38
Length (mm)	5670	6320	6820	7320	8030	8800
Width (mm)	2380	2380	2380	2380	2530	2530
Height (mm)	2600	2600	2600	2600	2650	2650
Track (mm)	1800	1800	1800	1800	1950	1950
Total weight						
- empty (kg)	3200	3400	3720	3950	5900	7600
- permitted on public roads (kg)	11700	11400	11500	11950	21200	22100
- technical (kg)	14300	13900	14000	14650	25100	25900
Axle load						
- empty (kg)	3060	3200	3500	3690	5600	7140
- permitted on public roads (kg)	10000	10000	10000	10000	20000	20000
- technical (kg)	12300	12300	12300	12300	24000	24000
Saddle load						
- empty (kg)	140	200	220	260	300	460
- allowable (kg)	2500	2500	2500	2500	3000	3000
Payload						
- permitted on public roads (kg)	8500	8000	7800	8000	15300	14500
- technical (kg)	11100	10500	10300	10700	19200	18300
Bin size	5m ³	6m ³	7m ³	8m ³	9m ³	10m ³
with extension 0.3m	7m ³	8.5m ³	10m ³	11m ³	12.5 m ³	14m ³
extension 0.45m	8m ³	10m ³	11m ³	12.5m ³	14.5 m ³	16m ³
Tractor power (kW)	from 60	from 66	from 80	from 95	from 120	from 130



Additional equipment will increase the weight and reduce the payload.

Hydraulics:

	scraper chain drive	spreading disc drive
Nominal volume flow	60 l/min	90 l/min (60 l/min)
Maximum pressure	200 bar	200 bar
Required filtering	10 um	10 um
Maximum oil temperature	80° C	80° C

Torque values:

Wheel nut:	M 22 x 1.5	475 Nm	towing eye:	M16:	210 Nm
	M 22 x 2	430 Nm		M20:	420 Nm

Technical payload and tyre pressure

(Selection)



For the transport/using on public roads the information from the DEKRA regulations are binding

	GDK5.000	GDK6.000	GDK7.000	GDK8.000
wheel (Alliance)	payload (adjust tyre pressure accordingly)			
23.1-26 HD 16PR	2.3 bar	2.3 bar	2.3 bar	2.3 bar
• 25 km/h	11300 kg	10600 kg	10500 kg	10700 kg
• 40 km/h	8500 kg	7900 kg	7700 kg	7800 kg
18.4-38 / 14PR	3 bar	3 bar	3 bar	
• 25 km/h	9400 kg	8800 kg	8700 kg	
• 40 km/h	7700 kg	7200 kg	7000 kg	
18.4 R38 170 A8	3 bar	3 bar	3 bar	3 bar
• 25 km/h	11100 kg	10500 kg	10300 kg	10700 kg
• 40 km/h	8500 kg	8000 kg	7800 kg	8000 kg
20.8-38 / 14PR		2.8 bar	2.8 bar	2.8 bar
• 25 km/h		10400 kg	10300 kg	10600 kg
• 40 km/h		8000 kg	7800 kg	8000 kg
520/85 R46		2.4 bar	2.4 bar	2.4 bar
• 25 km/h		9900 kg	9700 kg	9900 kg
• 40 km/h		5600 kg	5300 kg	5300 kg
650/60-30.5 / 16PR	1.5 bar	1.5 bar	1.5 bar	1.5 bar
• 25 km/h	11200 kg	11500 kg	11400 kg	10700 kg
• 40 km/h	8400 kg	7800 kg	7600 kg	7700 kg
800/65 R32 170A8		2.2 bar	2.2 bar	2.2 bar
• 25 km/h		10500 kg	10300 kg	10600 kg
• 40 km/h		7200 kg	6900 kg	7100 kg
380/90 R46		4.9 bar	4.9 bar	
• 25 km/h		9700 kg	9500 kg	
• 40 km/h		7400 kg	7200 kg	



Attention!

Exceeding of technical payload limits will lead to dangerous driving situations and damage to the unit.

Technical payload and tyre pressure

(Selection)



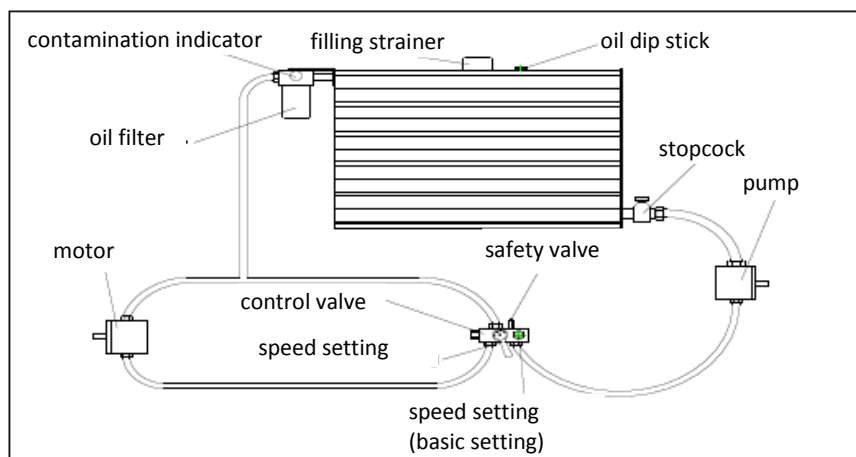
For the transport/using on public roads the information from the DEKRA regulations are binding.

	GDK9.000	GDK10.000
wheel (Alliance)	payload (adjust tyre pressure accordingly)	
18.4 R38 170 A8	3 bar	3 bar
• 25 km/h	18900 kg	18300 kg
• 40 km/h	14900 kg	14600 kg
580/70 R38	2.8 bar	2.8 bar
• 25 km/h	19200 kg	18300 kg
• 40 km/h	15300 kg	14500 kg
600/65 R38 IND	3.2 bar	3.2 bar
• 25 km/h	19200 kg	18300 kg
• 40 km/h	15300 kg	14500 kg
650/75 R32	3.2 bar	3.2 bar
• 25 km/h	19200 kg	18300 kg
• 40 km/h	15300 kg	14500 kg
650/65 R30.5 Cargo XBIB	1.8 bar	1.8 bar
• 25 km/h	19200 kg	18300 kg
• 40 km/h	15300 kg	14500 kg
650/60 – 30.5 16PR	1.5 bar	1.5 bar
• 25 km/h	19200 kg	18300 kg
• 40 km/h	15300 kg	14500 kg

More informations for tyres are available on www.atgtire.com or from web sides of other manufacturers of tyres.

9. Hydraulics

Spreading discs – circuit



If the discs speed in valve position "6" is not 960 rpm or "9" is not 1100 rpm this can be corrected with the speed valve from the basic setting.

(Turn out => increase speed, turn in => decrease speed)

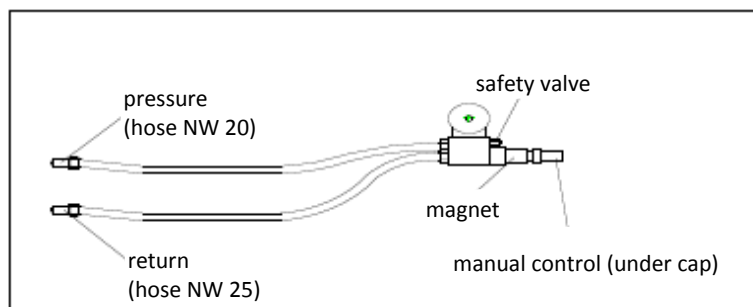


The adjustment of the safety valve (200 bar, PTO shaft 1000rpm) may only be checked and corrected by a specialist dealer.

All adjustments should be done with oil that is approximately 40°C

The stopcock must always be open, except in cases of repair.

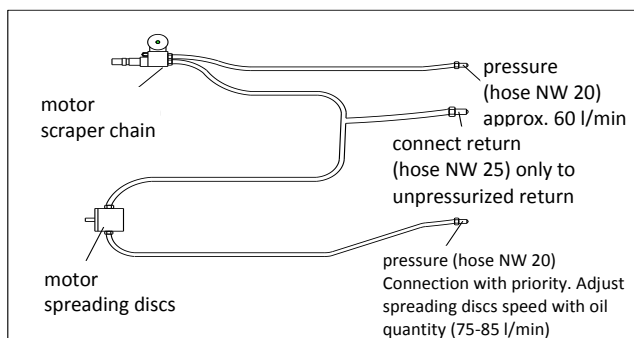
Scraper chain – circuit



Connect the return hose with the free return of the tractor. If attached to a trailed spreader the safety valve will not function as it is connected to the tractor hydraulics. (200 bar)

The optimum oil flow is 60 to 70 l/min. Higher oil flow (maximum 100 l/min) leads to oil warming. Less oil flow will decrease maximum spreading quantities per slide height as specified on page 7.

Fully hydraulic drive (without PTO shaft)



The tractor should have a hydraulic system with approx. 140 l/min. The return flow must be suitable for this oil flow. Even during shutdown, there must be no throttling of the oil flow.

10. Additional equipment

Hopper extensions

Hopper extensions are available in the height of 300 mm and 450 mm for all types.



Use caution when driving on a slope. There is a clear danger of tipping over.

Body screens

Body screens are used to separate foreign objects during loading. Parts which are able to pass through the sieve (Mesh width 80 x 80) do not usually cause any damage.

Sleewable tarpaulin, manually

While mounting, make sure that the lock is installed towards the front of the spreader. To open, first unlock the plane with using the rope supplied, then pull the tarpaulin.



Do not open tarpaulin during strong winds. While traveling, the tarpaulin must be closed always.

Sleewable tarpaulin, hydraulically

The hydraulic hoses must be connected to hydraulic couplings which can be switched on alternating sides.



Do not open tarpaulin during strong winds. While traveling, the tarpaulin must be closed always.

Rolling tarpaulin

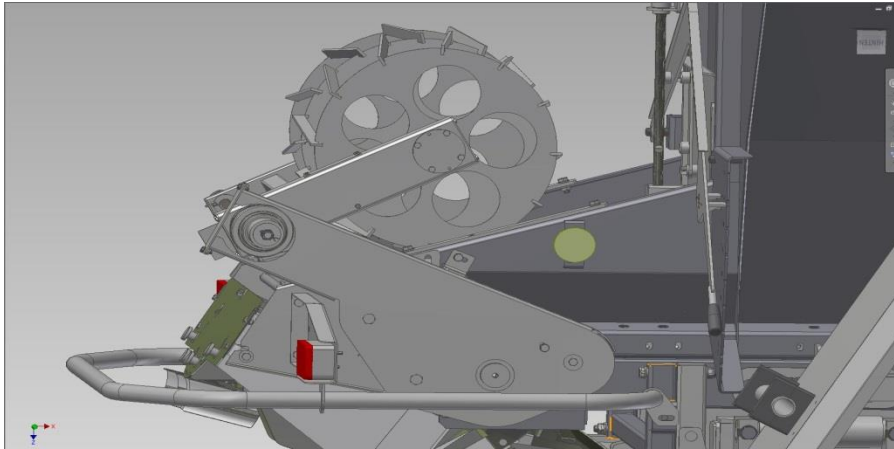
We recommend closing the tarpaulin only when required. The tarpaulin is tightly turned into the end positions; the crank is placed into the lock and fixed.

Crumble roller

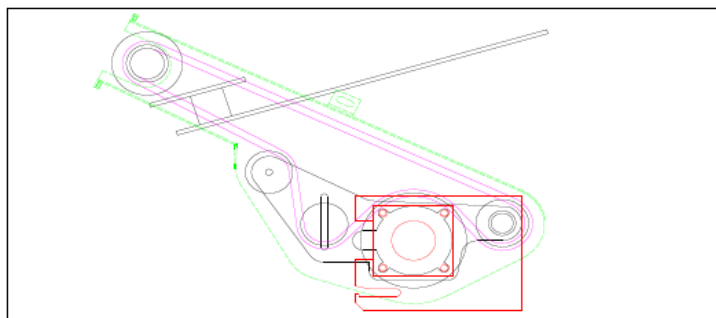
The crumble roller ensures a uniform longitudinal distribution even at high slider heights and with poorly flowing materials.

If the safety coupling is constantly on, during operation, the bearing point of the roller must be raised higher.

When spreading well-granulated fertilizer, the crumble roller should be removed in order to protect it against unnecessary corrosion.



Crumble roller



Chain guide of the drive

Steering drawbar / steering axle

Please refer to the operator's manual for information on the steering drawbar.



Because of the changing center of gravity, the spreader tends to tilt more quickly with latched drawbar when spreader has steering drawbar. The driving speed must be adjusted accordingly.

When replacing the wheels, the steering axle must ensure sufficient clearance. The steering stop may have to be adjusted.

Spreading units

The spreader is equipped with an pickup device, where different spreading units may be connected.

When a change is required follow the instructions below:

- Separate hydraulic connections. Remove speed sensor cable from the spreading unit
- Change and align spreading unit



Attention:
The disc spreading unit weighs approx. 130kg. Use appropriate lifting methods.

Single disc system for winter road services (gritter)

The spreading unit is suitable for all spreading de-icing and thawing agents during the winter months.

The bottom edge of the spreading disc must be about 400 to 450 mm above the road surface.

The working width is adjusted by the scale on the control valve, one scale part corresponding to one meter. In position 5, the spreader disc must rotate at 400 rpm. In the case of deviations, the rotary knob must be removed and re-fastened in the corresponding position.

The PTO speed is 540 rpm. Please refer to § 30 StVZO. (Marking of road service vehicles)

The throw distance in the direction of travel is about 2 to 2.5 m on the right side. The working width is increased on the left side. It is possible to spread both lanes with one passage.

A bin insert is available for spreading salt. This reduces the outflow width of the scraper chain. In this case, it is possible to achieve a flow rate of less than 5 g/m².

Note: 100 kg/ha corresponds to 10g/m²



Winter road service spreading unit (gritter)

Spreading auger (screw) boom

Spreading auger booms are suitable for low-dust application of mealy spreading products (burnt lime). The products must be free of foreign objects. It is recommended to load from the silo. (Use cover made from metal sheet)

All protective devices supplied must be installed. All adjustment work may only be carried out if screw helix is not running.



To prevent the spreader from tipping to the rear, it is essential to install the supplied drawbar weight.

(see extra addendum “spreading auger boom”)



Spreading screw 12 m

Spreading screw for road construction

The screw is able to suitably for low dust application of mealy materials such as lime or cement. It is recommended to use the cover made from metal sheet. If there is no electronic control mounted, the spreading quantity must be determined by re-weighing in dependence of slider height and drive gear.



All protective devices supplied must be installed. All adjustment Work may only be carried out if screw helix is not running.



Screw for soil stabilization

11. Truck - spreader

Attachment

The spreader must be mounted on the truck frame with all the attachment components supplied. The installation guidelines of the truck manufacturer must be observed.

Parking legs:

With the help of the parking legs a fast change of truck superstructures (spreaders) is possible.



Parking legs may only be used on flat, secure and protected areas. Do not enter on parking legs parked spreaders and it's not allowed to stay under these units.

Before starting, all electrical- and hydraulical connections, as well as mechanical fastenings must be disconnected. Insert the four parking legs as far as they will go into the sleeves and evenly lift the spreader until the truck can move away.

Hydraulic connection:

The following oil flows are necessary:

- Scraper chain: ca. 60 l/min
- Spreading discs ca. 95 l/min (or ca. 60 l/min)
- Spreading screws: ca. 40 l/min
- Winter road service (gritter): ca. 40 l/min



The return of the spreading disc circuit must not be throttled or disabled during switch-off, since damage may occur through the trailing spreading discs.



Notes

Fertilizer Calibration

date	Fertilizer type	manufacturer	Slider height	Calibrate number (K-number)

Speed Calibration

date	Wheel size	manufacturer	Calibrate number
Factory defaults (12 magnets on wheel)	18.4-38	Alliance	226
	20.8-38	Alliance	218
	800/65 R32	Alliance	214
	650/65 R30.5	Alliance	234
	Speed – Sensor	TeeJet	13000
	Centerline 220	TeeJet	10000