



*The effective technology*

# OPERATING INSTRUCTIONS

## **MONSUN**

### **MA, MB, MC, MD, ME, MF**



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# Introduction

## ***Epilogue***

Before the first operation of linear seed drill, please read carefully all information from operating and maintaining instructions. By this you can prevent damage, moderate costs for repairing and you can heighten the quality and reliability of your machine. Keep safety directions! Farnet a.s can not accept responsibility for damage or incorrect functioning caused by the infringement of directions mentioned in this Instruction manual.

The reason of this Instruction manual is to inform you in details with work of your seed drill to be able to use fully all of its working functions. First of all, the seed drill is described in general. Then there some of the extraordinary features of concrete types are listed. Chapters „Additional equipment”, “Maintaining”, “Removal of diseases”, are common for all types of seed drills. Terms “right”, “left”, “forward”, “back” are understood from perspective of drive direction of machine to forward.

Instruction manual has to be read and all directions must be kept by all men, who will work with the machine and will probably do these acts:

- Operating (consists also of preparation, removal of diseases during operation, maintaining)
- Service works and inspections
- Transport

According to technical innovations, we reserve the right for change of technical data, which are mentioned in this Instruction manual.

## **Directions referring to guarantee.**

1. All our products are granted by 12 months guarantee period, which starts at the day of delivery of machine to customer.

Guarantee does not refer to:

- Spare parts, which use to be defeated by wear
- All cases of intended damage
- Damage caused by no professional operating with machine or infringement of The operating instructions
- Mechanical damage originated during transit

2. Rights for Guarantee repairing can be applied only in that case, when machine was not modified by user or other person.

For acceptance of guarantee, commodity card located on control unit of electronic set must not be damaged.

3. During guarantee period, contractor- producer removes diseases and breakdowns caused by infelicitous material or faulty maintaining for free, if these conditions will be fulfilled.

-user of machine has to inform conductor- producer about origin and extent of diseases and breakdowns in written form

-according to this written announcement conductor- producer assures removal of disease.

4. For assertion of guarantee, it is needful to have confirmed certificate of guarantee and production number in certificate of guarantee must correspond with production number of seed drill.

5. Guarantee period is lengthened by repair period.

# Safety precautions

These safety precautions are applied for all chapters in The Operating Instructions.

## Safety marks

On the machine

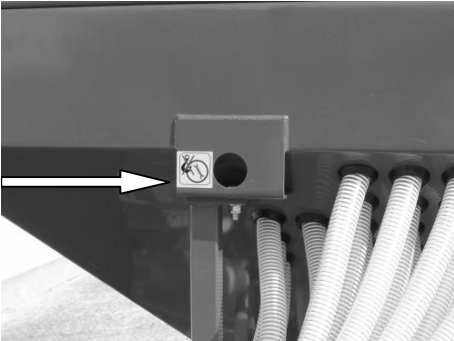
Before the first operation, please read The Operating Instructions.



Do not stand in reach of folding parts of the seed drill.



Do not use mounting holes for lifting up the seed drill.



## ***In these Operating Instructions***

There are distinguished three different safety messages. These indications are used:



for alleviation of work with the seed drill



it can happen that the seed drill could be damaged!



in case of hurt danger

Take care of safety mark to be readable and always change damaged ones. It is mostly important for interchange of parts or construction groups during repairing works. Safety marks are sold by your Deputy Manager.

Keep these instructions and you will prevent accidents. Give these instructions to the other users. Stop every activity, which does not correspond with safety.

## ***The usage according to the directions***

Seed drills are constructed according to the technical condition and accepted safety technical rules. However, it can happen that during usage of these seed drills, user or other person could be injured. Also it can happen that the machine or any part of equipment is damaged.

Take care to keep the machine always in good technical condition and use it only for purposes for which it was originally made. All diseases, which can break safe usage of seed drill, must be removing at once.

The seed drill can be operated and maintained only by people perfectly able to do these activities and works and who are familiarized with possible risks.

Original spare parts and accessories from FARMET a.s. are constructed especially for seed drills MONSUN. Spare parts and accessories– not delivered by us – are not controlled and approved. The usage of no original goods can change in negative way constructional features of your seed drill and influence safety of employees.

For damages caused by the usage of no original spare parts and accessories, there is no acceptance of whatever responsibility from side of FARMET a.s..

Seed drills MONSUN are dedicated only for sowing. For damages caused by incorrect usage FARMET a.s. takes no responsibility.

All preventive precautions from point of view of safety of work, health protection and transport safety must be always kept.

By incorrect usage is also understood the infringement of The Operating Instructions or infringement of Service requirements and requirements of producer.

### ***Service reliability***

The seed drill is possible to use only if all safety arrangements located on machine are mounted and are functional.

Screwed connections should be controlled in regular intervals and in case of need they must be driven.

Also a pressure in tires is needful to control regularly.

- 7,50x16 8PR - 2,8 bar
- 23x8,50-12 6PR - 3,1 bar
- 31x15,5-15 8PR - 3,2 bar

In case that there is a disease somewhere in the seed drill, stop work and block the machine. Disease must be removed instantly.

### ***Responsibility for damage***

Your seed drill MONSUN is manufactured with maximal care. However, even in correct usage there can appear some breakdowns, which can lead in to dropout that can be caused by:

- different structure of seed and fertilizer ( size of seed, consistence, shape, treatment, cohesion )
- clogging or clinging ( impurity, weed, wet fertilizer )
- wear of components( dozers, wedge belt)
- damage by external factors
- incorrect speed of the seed drill
- incorrect regulation of the seed drill ( incorrect maintaining, infringement of regulation charts)
- errors in mounting or operating of electric appliance or errors in electronic system of tractor

**That's why, before every single usage of machine, control correctness of functions and sufficient precision of sow of your seed drill.**

**Compensation requirements, which are not connected directly with the seed drill, can not be accepted. Producer does not take responsibility for diseases, which were caused by incorrect dosing or delivery.**

## ***Transport safety***

For transport on overland communications, take care of commonly accepted traffic instructions. Before ride, the seed drill must be in the condition which is acceptable for transport conditions.

Take care of transport width, mount lights, warning and protective identification. The electronic system for making field - track lines dismount it from the electric power.

Block folding parts by both sides, over arm, etc., in position dedicated for transport.

Take care of allowed load of axle, carrying characteristics of tires and total weights to kept sufficient riding and braking ability. Riding features are influenced by mounted additional appliances. The importance must be given on wide spread and internal weight of the seed drill mostly during ride in curves.

During movement of the seed drill do not stand on stairs!

## ***Operating safety***

### *During detachment of the seed drill*

Be careful of injury while mounting and dismounting of seed drill onto the rod of 3point suspensor of tractor.

That's why keep these instructions:

- block tractor to avoid any movement
- operate with 3 point suspender slowly and carefully
- for the rod of 3 point suspender there is a danger of shut of attendance between tractor and seed drill
- detach the seed drill by the help of supporting legs to determined place

For the rod of 3 point suspender there must be correspondence between category of the seed drill and category of tractor.

### *While the usage of the gear box output shaft*

Keep instructions for using of the universal shaft with protective equipment.

Mount universal shaft only when engine of tractor and the gear box output shaft of tractor are switched off. Take care of rated tubular overlap in working and transport position.

Block protective tube on universal shaft to prevent rotation.

Switch the gear box output shaft on only when there is nobody within reach of danger.

RPM of the gear box output shaft of tractor must be in correspondence with rated number of RPM of the seed drill. Angle is regulated by type of the gear box output shaft of tractor. (See

in The operating instructions for the gear box output shaft of tractor). Switch the gear box output shaft off any time there is too big buckling or it is not used.

### *While hydraulics operating*

Mount hydraulic tubes on the hydraulics of tractor only if the hydraulic appliance of tractor is not in operation.

The hydraulic appliance is under the high pressure. All bearings, tubes and screw connections must be controlled regularly for leakage and outside damage! While looking for leakage use only determined means. Remove damage as quickly as possible! Escaping oil can caused injury and fire. When there is an injury, call the doctor at once!

### *While operating*

Before activation and putting in operation, control close area of the seed drill (children). Pay attention to sufficient outlook.

Ride on the seed drill during work is not allowed.

Any from rated and delivered protective appliances is not allowed to remove.

In reach of markers there can not be any persons.

### **Maintaining**

Keep instructions for completion of rated regular control and maintaining.

In maintaining, initiate hydraulic appliance into non- pressure state, switch universal shaft of tractor off and switch off engine of the tractor. Dismount tractor from the seed drill.

Conduct maintaining only if the machine is located on the smooth and constant surface and it is blocked against any movement or break away. Do not use parts of the seed drill during entrance.

Before cleaning of the seed drill with water or steam pressure (high-pressure cleaning) or by other depurators, cover all openings into which from safety or functional purposes, water, steam or another cleaning agent are not allowed to get. These are e.g. bearings, ventilator and electric appliances. After cleaning remove all blockages.

After cleaning control all hydraulic connections from leakage, abandonment and damage. Found defections remove at once!

Before work with electric appliances detach them from electrical power.

During an execution of electric welding works on mounted seed drill detach cables of generator and battery of tractor.

Rise screwed connections released during maintaining again.



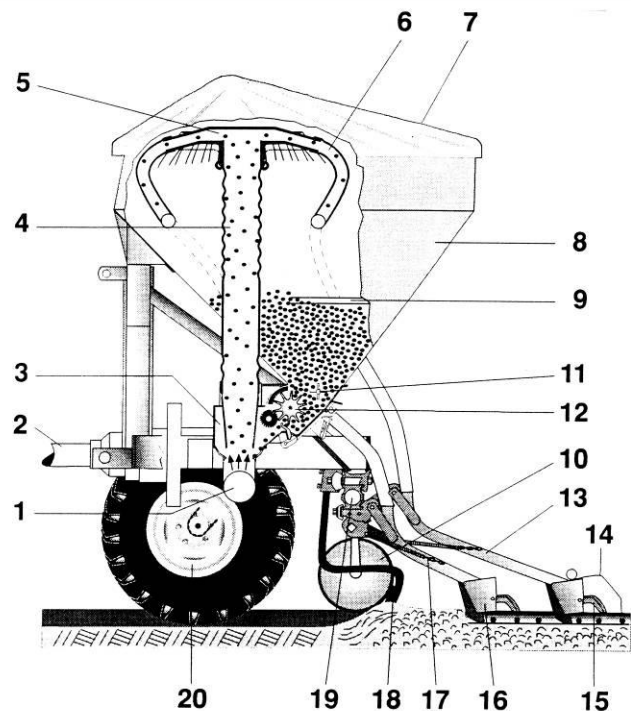
# Description and technical data

In this chapter there is general information connected with all types of seed drills. It contains description of operation mode, extent of their usage and technical data.

## Description of the seed drill

The next description of the seed drill will help you for better orientation in working usage of the seed drill.

1. bend with injector
2. gear box output shaft of tractor
3. diffuser
4. tube
5. distributor
6. sowing hose
7. cover of hopper
8. hopper
9. grain sieve
10. marker
11. filling shaft
12. dozer
13. seeding section long
14. back filler
15. spur
16. seeding section short
17. spring of seeding section
18. track tiller
19. beam of seeding sections
20. driving wheel



**Pic.1** Scheme of the seed drill

Driving wheel of the seed drill hurries out with help of chain drive chamber seeding barrel of dozer. According to adjustment of dozer and distance moved, seed is dosed from dozer to diffuser. An air flow made by ventilator carries and distributes seed through distributor and seed tubes to seeding sections.

Seed drills can be used in connection with all standard tractors (according to the type of seed drill from 50kW). Tractors must be equipped by rod of 3point suspender or detaching triangle. For mechanical drive of ventilator there must be protection cover of gear box output shaft 1000RPM.

Driving speed of the seed drill should be from 5-12 km per hour according to the surface, type of soil and according to rated precision of seeding amount.

By seed drills MONSUN all types of seed of sizes ranging from 1 to 10 mm can be sowed.

wheat, barley, rye, oat, corn, bean, pea, french bean, rape, poppy, lantern, grass, yellow-vetch.

When sowing poppy, it is necessary to check the tightness of the release ports and clean any impurities so that seeds are not lost. If needed, it is possible to additionally seal the ports.

Pneumatic seed drills can be equipped by these types of seeding sections:

- suffolk seeding section ( width of sow 1-2 cm) – for sowing into plough up soil with little amount of plant surpluses
- disc seeding section ( width of sow 2 cm) – for sowing into plough up soil with bigger amount of pant surpluses
- X-disc seeding section (width of sow 2 cm) – for universal usage to sowing into plant residues (sowing in mulching) as into plough up soil.

# Adjustment and usage of seed drill

In this chapter you will be informed of general information about using of your seed drill. Constructional peculiarities of particular types are described in the next chapters.

## ***Transport by public roads***



Put on warning gables with lightening and protection appliances.  
By public roads, ride there only with empty seed hopper.  
Maximal transporting speed of seed drills is 10 km per hour.

All seed drills with transport width until 3 m can be transported according to traffic instruction on public roads.

- Seed drill MD- transport in conveyer
- Seed drill MASM and MASH with working width since 3 m: fold the folding beam over and block it. Fold a harrowing frame over and block it.
- Seed drill ME: fold folding beam over and close the ball valve in connecting line.
- Fold markers over and block them.



Warning! Take care of acute edges of the seed drill during rebuilding!

## ***Preparation before sowing***

### *Mounting of seed drill onto tractor*



During mounting of seed drill onto tractor there can not be any person between tractor and the seed drill.

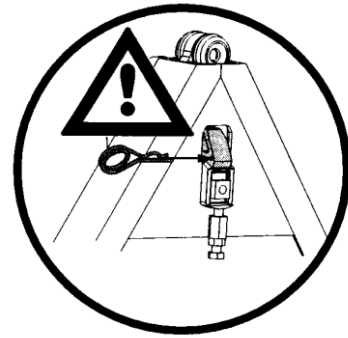
The seed drill can be mounted onto tractor in this way:

- By rod of 3 point suspender or by triangle of tractor: Seed drills MA,MASM,ME
- Only by triangle of tractor: Seed drills MB,MC,MD

For using of coupling device for mounting of seed drill, mount coupling device onto tractor.

If you use for mounting of the seed drill the coupling device, at first mount the coupling device onto tractor and then attach the coupling device onto the seed drill. Take care:

- That closing hook of the coupling device must click into blocking position.
- That closing hook of the coupling device must be blocked Pic. 2



**Pic.2** blocking of the closing hook of coupling device.

During mounting of seed drill pay attention to:

- Adjust the lower con rod that the seed drill will fluctuate into sides only limited
- Mount upper con rod as high as possible to secure parallel lift of seed drill.
- Instrument triangle of seed drill must be in working position upright. For this, arrange length of upper brace rod.



Mount the prop shaft only when the engine of tractor and gear box output shaft is switched off.



Keep the operating instructions for the universal shaft.

For some types of tractors – the prop shaft must be shortened. But it can not happen that force transmission of the prop shaft will be reduced.

### *Adjustment of markers*

Before starting of sow, it is needful to adjust the length of markers. For this adjustment keep this scheme:

$$\text{Length of markers} = \frac{\text{Working width} + \text{line pitch} - \text{track width of wheels}}{2}$$

The seed drill MONSUN 6 MD –with 48 sows has the working width  $L = 600\text{cm}$ . The basic line pitch is predetermined into  $R = 12,5\text{ cm}$ . If there is for example the front tread of tractor  $S = 150\text{ cm}$  then

$$\text{The Length of markers} = \frac{600 + 12.5 - 150}{2} = 231.25 \text{ cm}$$

Under the length of marker we understand distance of marker disc from outer seeding section in working position.

### *Adjustment of seed depth*

The depth of sow can be adjusted according to soil conditions by the pressure on the seeding section.

By the help of a crank- handle (Pic.3) you can change the pressure on the sowing dot centrally among all the bearer of seeding sections.

You can change also the pressure on the sowing section individually on the particular seeding sections. It is possible by rebuilding of springs by the help of chain elements Pic.4. Approximate charging of seeding sections for different lengths of chain is displayed on Pic.5

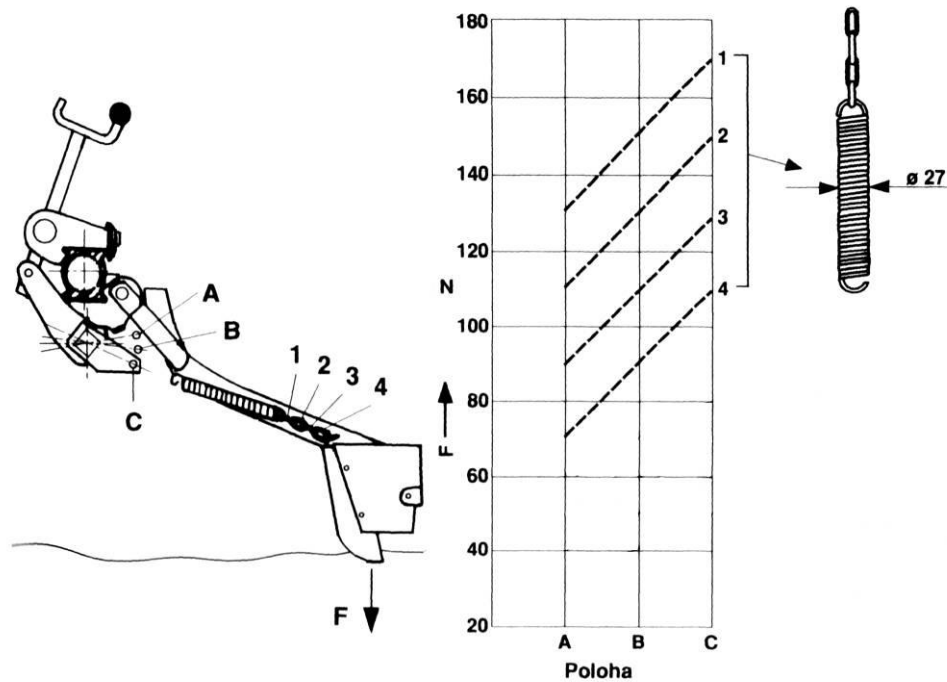
In case of sowing into the light soil, narrow separation and high speed, it is not suitable to adjust too high pressure onto the front seeding sections, because these lines will be comprised by back seeding sections.



**Pic.3**  
central adjustment of pressure onto the seeding sections



**Pic.4**  
individual change of pressure onto the seeding section



**Pic.5** diagram of pressure onto the seeding section

### *Adjustment of seed amount*

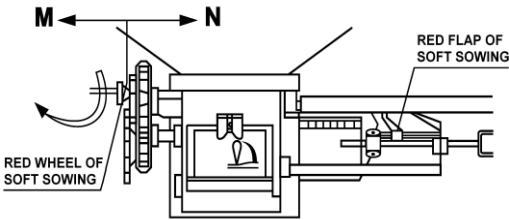
Attributes given into the regulating chart are only informative, because specific weight and size of seeds are often different. Correctly adjusted attribute can be achieved by the sowing examination. The measuring amount (for the same seed and type) will be then always constantly delivered.

! For seed drills with two dozers, every dozer must deliver the required seeding amount (kg/ha). Mechanical counter of hectares shows the half surface of the width of the machine.

For the sowing of small seeding amount, use micro dosing system, see the regulating chart 1. An activation of this micro dosing system is described on page 16.

+ Adjust seed drills only in lowered and blocked position. Tractor and gear box output shaft of tractor must be dismantled.

Chart 1 Regulating chart

Regulating chart MONSUN																						
Type of seed:	Wheat	Rye	Barley	Oats	Beans	Peas	Lupines	Vetches	Corn	Grass	Type of seed:	Rape	Red clover	Poppy	Grass							
kg/dm <sup>3</sup>	0,77	0,74	0,68	0,5	0,85	0,81	0,76	0,83	0,79	0,36	kg/dm <sup>3</sup>	0,65	0,77	0,59	0,39							
Fan „A“ Normal sow kg/ha											Fan „Z“ Soft sow kg/ha											
Normal sow Scale	10	34	33	32	24	23	21	28	32	8	Scale Soft sow	2,50	1,80	0,90	2,30	1,15	1,76	0,88				
	15	51	49	48	35	42	40	45	51	24		18	5,00	4,60	2,30	5,30	2,65	3,82	1,91			
	20	69	66	64	47	61	59	62	70	47		26	7,50	6,80	3,40	8,60	4,30	6,16	3,08	2,80	1,40	
	25	86	83	79	59	79	78	79	89	70		34	10,00	9,10	4,55	12,00	6,00	8,21	4,10	5,20	2,60	
	30	104	100	95	71	98	97	96	108	92		42	12,50	11,40	5,70	15,30	7,65	10,38	5,19	7,20	3,60	
	35	122	117	111	82	116	117	113	127	115		50	15,00	13,70	6,85	18,00	9,00	12,53	6,26	9,20	4,60	
	40	140	134	127	94	135	136	130	146	137			17,50	15,90	7,95	21,30	10,65	14,67	7,34	11,20	5,60	
	45	157	151	143	106	154	155	147	165	156			20,00	18,20	9,10	24,00	12,00	16,89	8,45	13,20	6,60	
	50	174	168	159	118	172	174	164	184	175			22,50	20,50	10,25	26,60	13,30	19,04	9,52	15,00	7,50	
	55	192	184	174	130	191	194	181	203	194			25,00	22,80	11,40	27,50	13,75	21,25	10,63	16,20	8,10	
	60	210	200	190	141	209	213	198	222	212				N	M	N	M	N	M	N	M	
	65	228	217	206	153	228	232	216	241	231												
	70	246	235	222	165	246	251	234	260	249			M- Clapper of dozer in the position” F”									
	75	264	252	238	177	265	270	251	279	267			85 ot = 1/10 ha					N - NORMAL				
	80	281	269	253	189	283	289	268	298	285			M - MIKRO									
	85	298	286	268	200	302	309	285	317	304												
	90	316	302	284	212	320	328	302	336	323												
95	335	319	300	224	338	347	320	355	342													
100	352	337	316	236	356	366	337	374	361													
105	370	354	332	248	374	385	354	393	380													
110	387	371	348	260	393	404	371	412	398													

Adjustment of required amount:

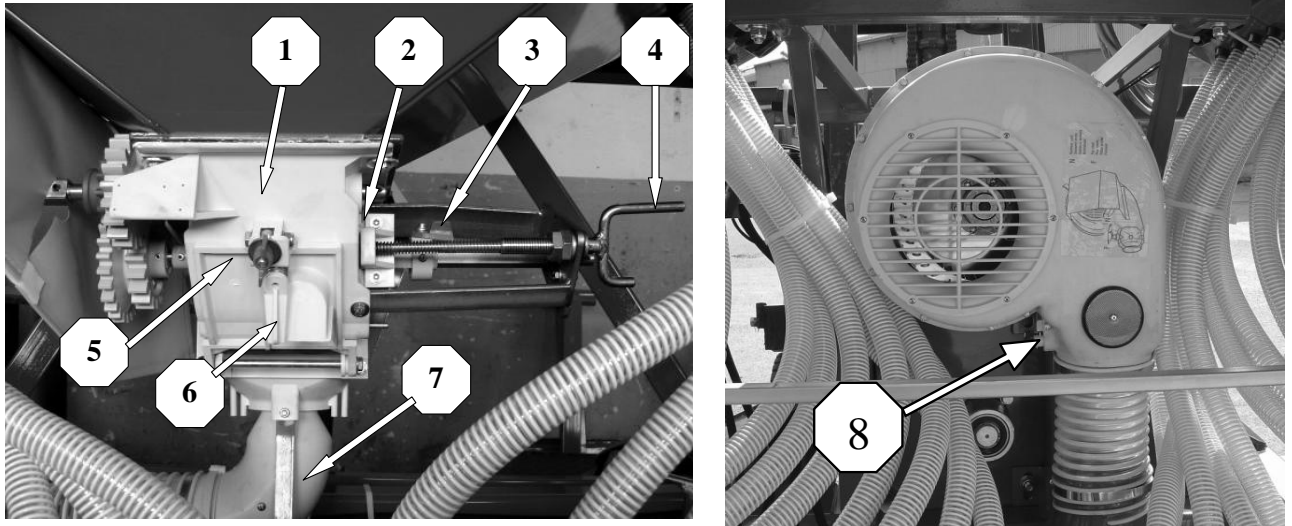
1. Needful data for adjustment, you can find in chart on page 14.
2. a/ Adjustment in normal sow:
  - set up the red switch point on the doser/3;Pic.6/into the position” N”
  - set up throttle valve /8/ into position “N”
2. b/ Adjustment for soft sow:
  - Turn spindle/4/ into position 0 on the regulation scale/2/
  - Turn the red switch point/3/ into right, until it clicks into groove of 6-borders shaft, letter “F” on the red switch point is visible
  - Set up the throttle valve/8/ into the position “F”

! Change into the smaller seeding amount only when dozer rotates or if the hooper is empty. The break of this warning can mean the damage of the dozer.

3. Look up the value of seed amount in Regulating Chart.

4. Regulating Scale/2/ shows adjusted values from 1- 110/in soft seed it is only 25/; in effort to get bigger opening than 25 on scale it can happen that the switch point will be snapped./ Turn the handle/4/ until you can see required value on the edge of cover and regulating scale.

**Pic.6** Dozer and ventilator



1. Cover
2. Regulating Scale
3. Red switch point “N”- normal seed; “F” – soft seed
4. Handle
5. Discharging doors
6. Power harrow valve
7. Bend
8. Throttle valve “N” – normal seed; “F” – soft seed



While closing discharging doors, take care weather in dozer is any foreign object.

5. Fill the hopper with seed
6. Dismount the bend/7/ by abandonment of wing nut Pic.6
7. Under the new opening on dozer put the tank for capturing of seed
8. Detach the spring –trip release on the gear box output shaft and dismount it. Onto gear box output shaft of dozer- mount calibration handle for regulation of seed Pic.7
9. Turn the calibration handle 85 times facing arrow with speed 1 RPM. Mechanical computer of hectares shows you number 100. Seed inside tank fits to sow for 1/10 Ha. For seed drill with two dozers there must be for every dozer counted amount of seed 1/10 Ha.
10. Weigh the captured seed in tank.
11. If weigh amount does not correspond with your required amount, set up dozer according to presented example.
12. Mount bend/7/ onto diffuser again.
13. At the end join rear drive shaft and block it by spring- trip release.



The seed drill is adjusted now.

**Example for sowing of wheat:**

- Required sowing rate 210 kg/ ha
- Adjustment according to sowing chart = 60
- The sowing exam shows 19 kg
- i.e. approx. 10 % less than requirement / 21 kg /
- Rise adjustment by 10 % more into 66
- The second sowing exam =21 kg



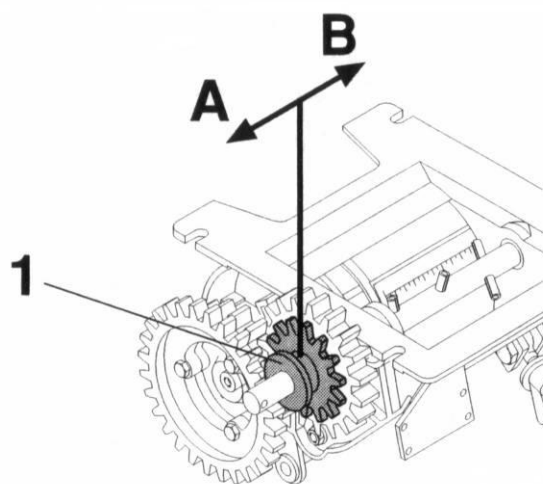
**Pic.7** Calibration of the seed drill

*Adjustment of micro – dosing system*

By micro – dosing system the soft seed and small amounts for hectare can be sowed. The advantage of micro – dosing system against the normal system for the soft seed is that for the same sow amount the width of cells is double. By this, self-cleaning effect of cells is increasing.

Pull the red gear wheel out to click into the position A, Pic. 8. Micro – dosing system is working. Adjustment value must be counted down from the regulating chart for the soft seed with **micro – dosing system M.**

- 1. red gear wheel
- A: micro – dosing system
- B: normal rotation speed (RPM)

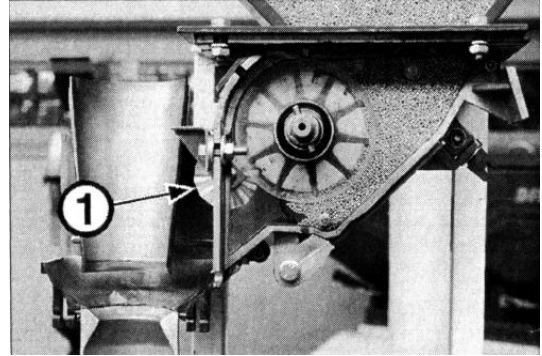


**Pic. 8** Micro- dosing system

Inside of the cover of dozer, there is mounted cleaning disk for cells of the soft seed. It keeps from congestion of cells when there is a mordant seed. It is situated under the cover of diffuser behind gear wheels. /1 Pic.9/



Before sowing of the soft seed check the function of cleaning disk.



Pic.9 cleaning disk



Mechanical counter of hectares for micro – dosing system shows overall area, which was sowed; for seed drills with two dozers it shows half sowed area.

### *Control of the seed drill*

Before you take your seed drill to the field, you should control these things:

- rated (standard) transport position and identification of the seed drill by warning boards and lightening
- mounting of the seed drill onto the tractor
- mounting of bend to the diffuser
- adjustment of field - tracked lines
- opening and closing of by – passing clappers
- seeding amount of all seeding sections:
  1. fill the hopper by small amount of seed when tractor is switched off
  2. when seed drills with mechanical dosing are dismantled, because of safety precautions, act according to this way:
    - lift the seed combination up when drive of ventilator is switched off until the riding wheel won't touch the ground
    - turn the driving wheel approx. per 1/2 rotation more, trough which you get little amount of seed into the bend
    - turn ventilator on, let it run for a while and then turn it off
    - check weather every seeding section blew seed out
- required adjustment of red switch point of dozer and throttle valve of fan
- turning on and off of micro – dosing system
- divider cover of distributor
- mounting of drive shaft
- closing of discharging clapper
- sieve in hopper



Reach the machine only when the engine and the ignition are switched off, the brake is turbid and when all moving parts are at rest. It is forbidden to descend from tractor when motor runs.

## Operating during sowing

### Setting of the seed drill according to field conditions

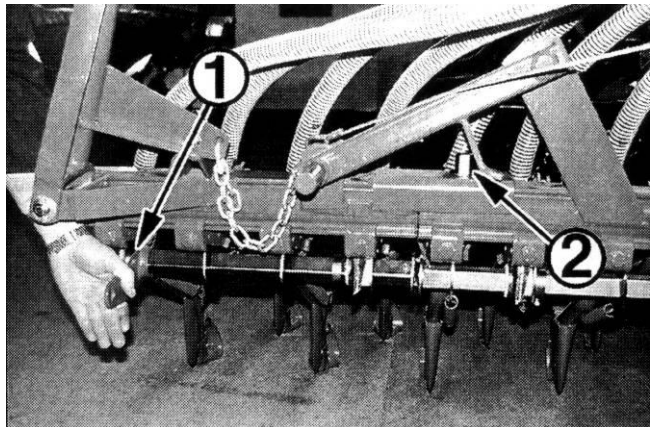
The seed drill required for sowing must be rebuilt from transport position into the working position.

If the seed drill is not mounted onto the tractor yet, mount it.

Before dismounting of the seed drill do this:

- The seed drill MD see page 23
- The seed drill with hydraulic folding beam: fold the beam up to the working position
- The seed drill MA with manually folding beam:
  - fold and screw lateral parts again
  - pull the lever under the beam of seeding sections up until clutch click into two sectional tubes, see Pic.10

- 1 lever
- 2 blocking screw



**Pic.10** manually folding beam

Dismount the seed drill and do these operations:

1. Dismount lightning boards and detach them from electrical power
2. Mount gear box output shaft
3. Lock – off the markers

! Do not stand under the raised markers.

4. Fill by the seed.

! For entrance to the hopper use only appropriate stairs



Practical advices:

Is there any foreign material in the hopper?

Is the discharging valve closed? Is there any water in bend?

5. Adjust the track tillers.
6. Bring the driving wheel for type MB into the working position.
7. Adjust the mechanical counter of hectares into 0.
8. On harrowing frame - adjust an inclination and depth of harrowing.
9. Connect an electric circuit.
10. Connect the electronic system.

### *Operating with markers*

#### **Markers with simple operating**

In transport position markers are secured by pins, which are before work locked-off and markers must be manually tipped into lower position. Markers are controlled from cabin of tractor by the help of lever of hydraulics, by which the pressure of oil is controlled. This oil is carried into direct fluid motor in tipping mechanism. Rising of the oil pressure causes an erection of both markers and falling of the oil pressure causes that one marker drops into working position. If you want to get the same with the second marker, repeat the previous steps (rising of the oil pressure – rising of both markers, falling of the oil pressure – falling of the second marker).

#### **Markers with hydraulic switching by the help of distributive air hose valve**



**During transport on public roads it is always needful to have markers fixed in the transport position.**

Markers are controlled from cabin of the tractor. In the transport position are blocked by pins, which lock – off before work on field. Control of markers is realized by the electric button located on the cable that leads to the distributive air hose valve/ pre – set for right or left marker/ and by lever of hydraulics. By it you drop the chosen marker into the working position or lift it up into the transport position.

#### **Markers controlled by AK valve.**

In the transport position are the markers mechanically blocked, whereby before putting into working position is necessary to lock-off them.

**Control of type ME, MASM, MASH** – lift of markers is provided by oil inlet to hydraulic circle of seed drill, the direction of flow is from the tractor to seed drill. By activation of one marker is necessary to loosen the oil inlet from the tractor and after that the tension spring provides the folding of marker.

**Control of type MA, MB, MD** – lift of markers is provided by oil inlet to hydraulic circle of seed drill, the direction of flow is from the tractor to branch of seed drill, where is placed the AK valve. By activation of one marker is necessary to change the direction of oil flow.

**By activation of both markers into working position is necessary to open the ball valve placed by AK valve, put the marker into working position and again close the ball valve.**

For the adjusting of marker working speed serves the throttle valve of oil flow. By type ME, MA, MB, MD is the throttle valve bi-directional, it means, that by this valve is adjusted as lift

so also down of markeres. By type MASM and MASH is the throttle valve one-way, it means, that by this valve is regulated the speed of markers lifting. The speed of markers lowering is adjusted by brass screen with a hole  $\varnothing$  1mm, which is placed before AK valve.



Hydraulic control of markers is tested by producer on hydraulic aggregate. Hydraulic circle is filled with the oil SHELL DONAX TD.

### *Control of seeding amount*

Errorless seeding amount is based mostly on your control. Control the seed after several meters of ride, for bigger areas and also during work.

1. Aren't the seeding hoses deflected?
2. Are the depth of sow and the comprehension of seed sufficient enough? Adjust the front and back array of seeding sections.
3. Do the seeding sections sow regulated amount?
4. Does the seed run through by – passing clappers without difficulties?
5. Aren't the seeding sections blocked?
6. Do the plant residues not limit the seeding sections?
7. Are the markers and the grubbers of feet adjusted correctly?
8. Do all by – passing clappers switch correctly?
9. Are the rotations of shaft during sowing constant?
10. Does the driving wheel rotate composedly and regularly?



If you stop on field because of congestion or disease:

- \* Block the creating of field tracked lines by the button : Start/ Stop
- \* Lift the seed drill up
- \* Go approx. 1 m back

### *Adaptation of working speed – keeping of shaft rotations*

Possible working speed is from 5 to 12 km per hour and depends on a type of soil and on preparation before sowing. For heavy soil conditions ride more slowly. For light soils and in high working speed the front seeding lines are too lapped by back seeding sections. Loosen chains up in the front array of seeding sections and lessen the working speed.

Keep rotation of gear box output shaft of tractor. Precision of seed distribution can change, if the rotation falls under minimal limit. For bigger seeding amounts there can happen that tubes will be plugged.

! Seed drills equipped by centrifugal clutch must be used only with 1000RPM mechanical drive. Rotations of gear box output shaft must reach at least 650 RPM to secure that rotating moment will be transmitted correctly.

! Seed drills with 540RPM mechanical drive can not be used with gear box output shaft of tractor 1000RPM. It can caused damage of the ventilator.

### *Rotating of seed drill – provision to no sowed areas*

A little while before edge of field or before turning back lessen rotation of engine and during ride lift the seed drill up



After turn activate the seed drill when the engine RPM and RPM of the gear box output shaft are suitable before required beginning of sowing on value per 1 m less.

You avoid origin of unsowed areas, because seed needs short period to get from dozer to seeding sections.

### ***Operating after seeding***

#### *Detachment of hopper and dozer*



Put tractor on constant and flat surface. Let the seed drill down; block the tractor to avoid any movements. Switch the tractor and the gear box output shaft off.

After sowing, the hopper and dozer must be totally empty:

1. Detach bigger amount of seed waste by parts through power harrow valve located on detaching doors. Pic.6. If the hopper is mostly empty, put under the detaching doors box and open the doors.
2. By the help of handle turn with dozer until the seed waste is detached.
3. Eventually remove impurities and sediments by the help of brush.



To avoid the damage by rodents, let the detaching doors open. Pic.11



**Pic.11** Detachment of the hooper

### *Detachment of the seed drill*

The seed drill must stand on flat and constant surface.

- Before dismounting detach the seed drill on supports. Eventually lift track tillers up.
- Type MD – you detach it best into the transport position.
- Detach the seed drill with tipping suspenders only in folding position because of saving of seeding hoses and because of safety. Block them by blocking supports.
- Detach hydraulic and electric outlets and the gear box output shaft of tractor. Pay attention to avoid damage or pollution of contacts within bolt.

### *Arranging of seed*



In work with arranged seed keep safety precautions of producer of arranged seed.

Never arrange the seed in hopper mechanically – by hand, it can not have sufficient impression and it can cause the threat of health. For soft seed / e.g. rape / do not use clammy bate, because it can influence precision of dosing.

## Differences of the seed drill MA



- control and tighten screwed connections more often
- because of safety precautions on the seed drill there must be entrance stairs

### *Adjustment of track tillers*

Four springs are bolted down to the bearer of the seeding sections. After fitting of track tillers you should adjust the springs, so they cultivate feet of tractor on outer side. When possible, adjust the depth of cultivation on max.5 cm.

### *Control of beam folding by type MASM*

Before putting the machine into working position is necessary to lock-off the folding parts pic. 12a. After folding of beam into working position lock the folding arms with the screw M 16 pic. 12b. By folding into transport position repeat this way in contrary order.



By transport on public roads must be locked the folding parts of beam pic. 12a.

### *Control of beam folding by type MASH*

Before putting the machine into working position is necessary to lock-off the folding parts pic. 12a and to connect the hydraulic hoses to hydraulic circle of tractor. Through control of tractor hydraulic circle you reach the folding of beam into working position. After folding of beam into working position lock the folding arms with the screw M16 pic. 12b. By folding into transport position repeat this way in contrary order.



**Necessary operating pressure for folding is 180 bar.**



By transport on public roads must be locked the folding parts of beam pic. 12a. Lock the operating valve of hydraulic folding in tractor, whereby you avoid unwanted folding. Further close also the ball valve in connecting line.





**Pic. 12a** Locking of folding parts in transport position



**Pic. 12b** Locking of folding parts in working position

## Differences of the seed drill MD

The seed drill MD is dedicated for big working widths. It is equipped by two hoppers and by transport mechanism.

- ! - control and tighten screw connections more often
- ! - because of safety precautions on the seed drill there must be entrance stairs



**Pic.13** The seed drill MD with working width 6 m

*Rebuild from the transport into the working position*



- ! The seed drill MD can not be transported in bigger speed than 10 km per hour and only with empty hoppers.

1. Fall the helping leg down and dismount the machine.



2. Mount the machine into working position and lift it up.



3. Lock drawbar off and draw it.



4. Lock the right wheel off, draw it, and turn it per 90°, put into opening and block it.



5. Lock the left wheel with head race off, draw it, and adjust the wheel on side of drawbar.



6. Put the wheel with head race on.



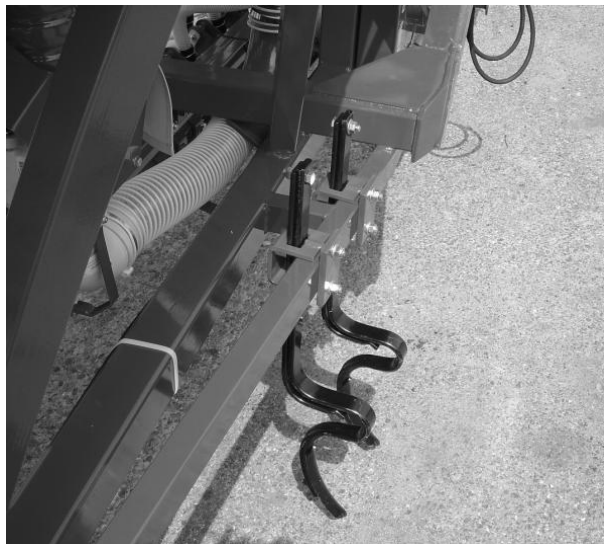
7. Put the drive shaft and block by spring clutch.



8. Lock an axle off and draw it.

### *Adjustment of track tillers*

Four springs are bolted down to the frame for cultivations of feet of tractor and springs for cultivation of feet of seed drill on suspender of the seeding sections.



**Pic.14** track tillers

### Adjustment of track tillers Pic.14

- Working depth – max.5 cm
- Location in feet of wheels:
  - On the outside of wheel track of the tractor
  - In the centre of feet of the seed drill

### *Adjustment of two dozers*

For the soft seed /e.g. rape/ you must adjust both dozers apart. Otherwise, there can be inaccuracies. Act according to manual on page 14.



Mechanical counter of hectares shows half sowed area.

### Detachment of the seed drill



The seed drill must stand on flat surface. Detach the seed drill only in transport position.



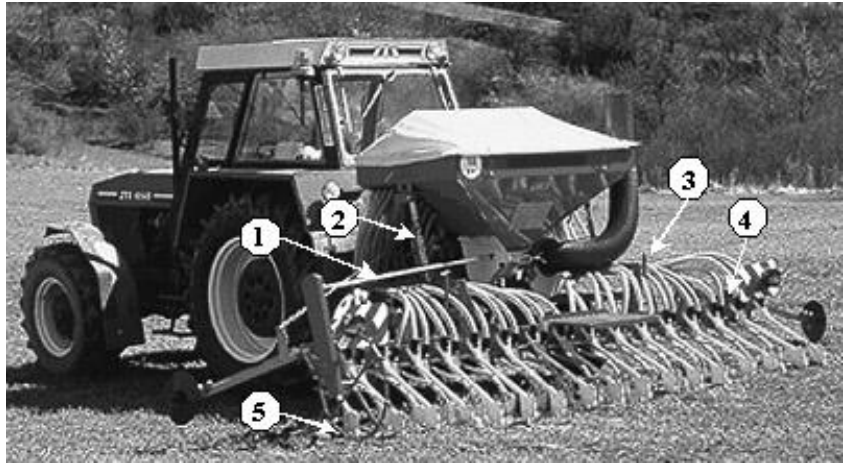
**Pic.15** Detachment of the seed drill 6 MD

## Differences of the seed drills MB

### *Scheme of the seed drill*

The seed drill MB is the machine, which can be engaged with the most of the soil- cultivating machines or with the carriage for solo sow by A-frame.

1. head raced shaft
2. tensor
3. parallelogram
4. beam of coulter
5. tail wheel



**Pic. 16** The seed drill MB



- control and tighten screw connection more often
- because of safety purposes there must be the entrance stairs on the seed drill

### ***Load of the seed drill onto the soil – cultivating machine***

By the help of A-frame the seed drills MB are able to be mounting onto the most of the power harrows and grubbers. If the seed drill should be driven mechanically, the soil – cultivating machine must have outlet for mounting of the gear box output shaft.



Keep the instructions of the manufacturer of your soil- cultivating machine.

Number of revolution of the gear box output shaft of the seed drill and the soil – cultivating machine must be the same. The seed drill MB is equipped for number of revolutions 1000RPM. The maximum acceptable deflection of the universal shaft can't be exceeded when the seed drill is attached, see the operating instructions for the prop shaft.

### *Loading onto the power harrows*

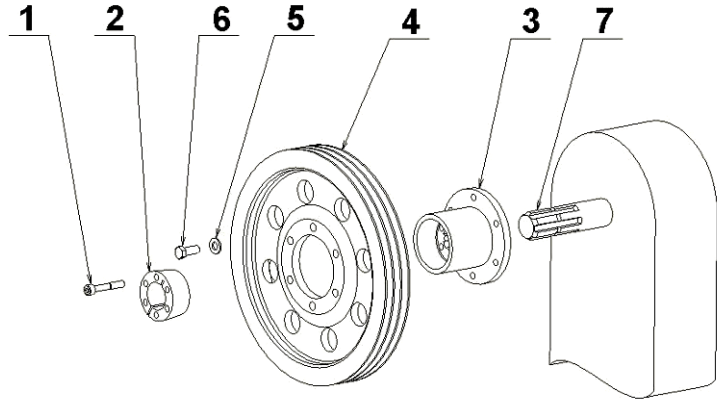
While you load the seed drill onto the power harrow, your seller of the agricultural machines must load A-frame onto the power harrows. Then mount delivered bent- wheel for V- belts onto the gear box output shaft according to the next description.



Tractor and the seed drill must stand on constant and flat surface. The seed drill must stand on supporting legs. For work with this combination, use tractor with sufficient force of uplift.

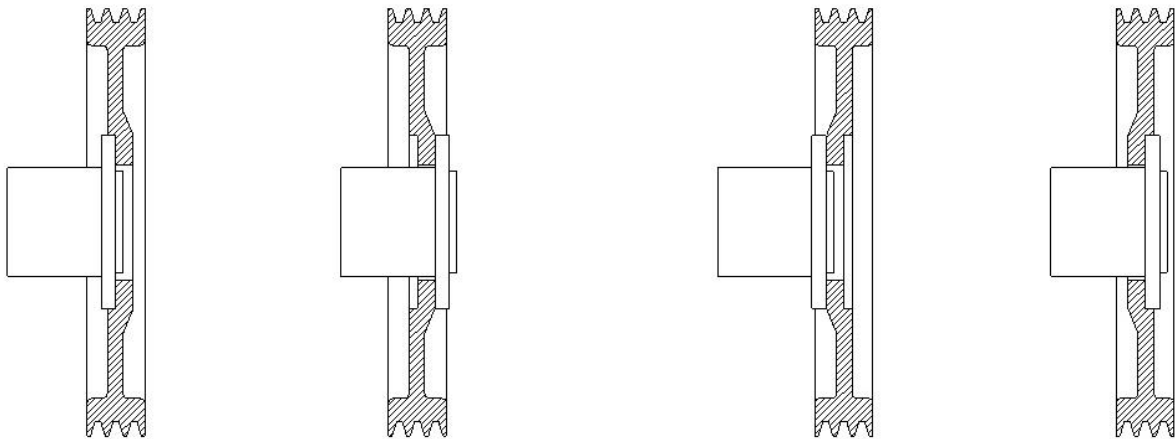
### Installation of the bent – wheel flange

1. screw
2. cone
3. bent – wheel flange
4. bent – wheel
5. base
6. screw
7. the gear box output shaft



**Pic.17** arrangement of the bent- wheel

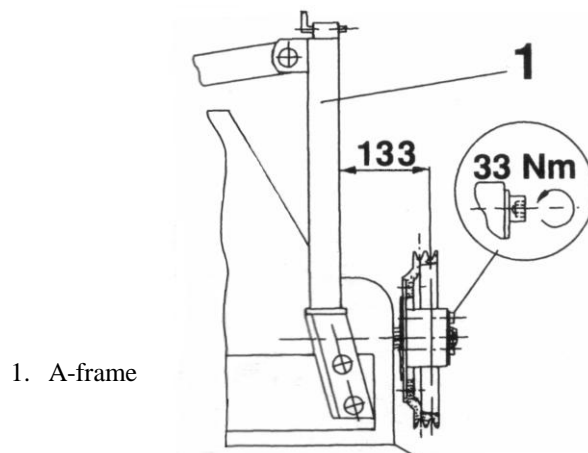
1. Screw down the bent – wheel onto the bent – wheel flange. On the pic.18 there are described 4 possibilities of mounting.



**Pic.18** 4 possibilities for mounting of the bent – wheel and the bent – wheel flange

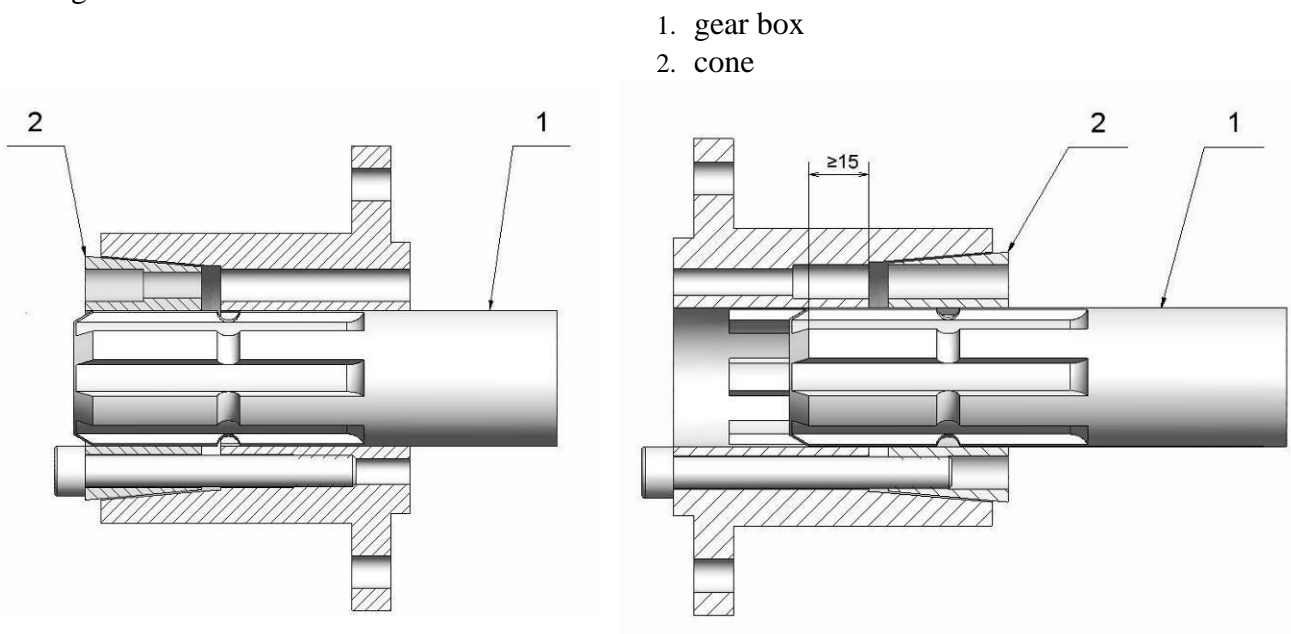
By rotation of the bent – wheel flange per 180 ° 4 possibilities of mounting spring up.

Between the back groove of the V- belt pulley and the back edge of A-frame must be distance at least 133 mm.



**Pic.19** distance between bent- wheel and A-frame

Profiles of the flange and the gear box output shaft must be overlapped at least by 15 mm / see Pic.20/. The cone /2/ must lay on the profile of the gear box output shaft with all of its length.



**Pic. 20** Two possibilities for tightening of the cone

2. Mark the position of mounting on the gear box output shaft of the tractor.
3. Load the complete bent- wheel flange with the bent – wheel and the cove on the marked gear box output shaft.
4. Draw 3 little screws close, gently.
5. Load the V – belts and fit it./pic.22/.After fitting draw 3 long screws close with twisting moment 33 Nm.

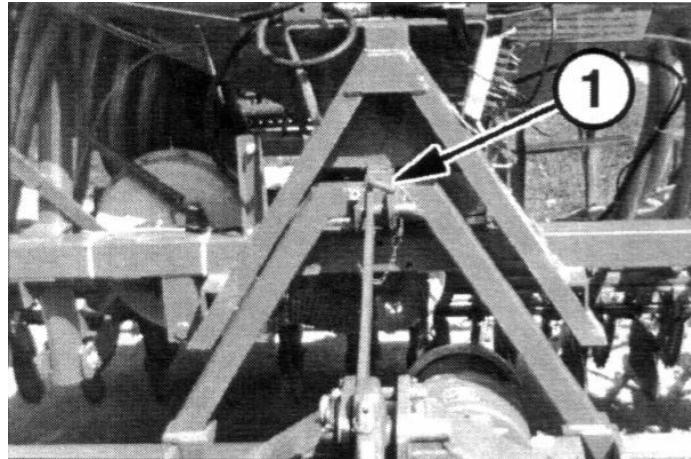
! After passing several hours of operation, control the screws and draw the slack ones close.



### **Linking of the power harrow with the seed drill**

- +** During driving rearward and mounting of the power harrows and the seed drill with tractor, there can not be any person between tractor and the power harrow.
- 6. Drive rearward slowly with mounted power harrows into the center under the landed seed drill.
- 7. Lift the power harrow up carefully and mount the A-frame into triangle hanger of the seed drill. The safety handle / 1.pic.21/ of the A-frame must click into. Control the correct lock-on of the safety handle.
- 8. Remove the supporting legs of the seed drill.

1. Safety pin



Pic.21 Mounting of the seed drill

### **Load of the V-belts and matching.**

- +** Do not force with your hands in space between V-belt pulley and belts. There is a danger of possible injury.
- 9. Incline the ventilator and put the V – belts down. The ventilator can not touch by its handle the frame of the machine. In that case when ventilator touches the frame / V – belts are not tightening enough/, V- belts must be exchange by the shorter ones.

Pic.22 loading of the V- belts, MB



Buy and exchange the V – belts only by series.

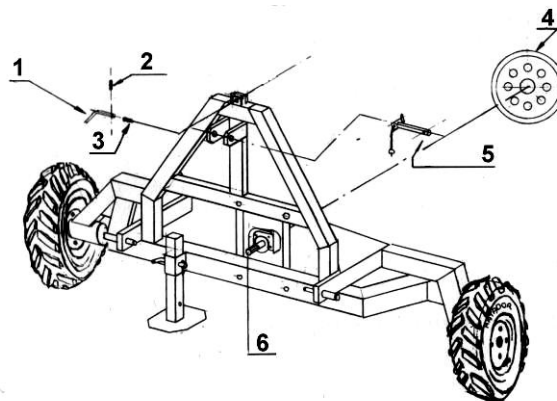
10. Check the fitting of the bent- wheels. The maximal offset/ no angle offset/ can be 0,5 mm for 100mm of the distance of bent- wheel axles. The V – belts can not run obliquely more than 2.5 mm/ for distance of the axle 500mm/. The more better is precision of alignment of grooves, the running is more clam and the currency of the V – belts and bent – wheel is longer.

### ***Linking of the carriage for the solo sow with the seed drill***

In that case when we want to sow with the seed drill of type MB without using of the soil – cultivating machine, we must mount the carriage onto the seed drill (see pic.23). You must dismount the drive pulley 4, which was mounted onto the gear box output shaft of the gear box of the power harrows. You must dismount it also with flange and screw down on the grooved shaft of the carriage 6. It allows a drive of the ventilator from tractor through the prop shaft. Then slip the lower draw rods over the carriage gudgeons and catch up the frame by the third point, block by gudgeon 5. Then slip the prop shaft over and drive rearward under the seed drill, which stands on the supporting legs.

By the help of hydraulics lift up the frame of the carriage and slip it over the holder of the seed drill. Block it by the help of the pin 1 on the frame of the seed drill. Load and draw out the V- belts, whose final position block by the tensor. Put the supporting legs off and let the seed drill down with the carriage on the ground.

1. safety pin
2. spring pin
3. spring
4. bent- wheel
5. gudgeon
6. grooved shaft



**Pic.23** Carriage for the solo sow

### ***Shortening of the sowing hoses***

The length of a parallelogram is possible to change to get better adapting for soil- cultivating machine by different positions. Shorten the sowing hoses not to be overhanging. Take a care that the lower edge of the bearer of the sowing dots is min. 30 – 35 cm over the surface, see page 32.

1. Enlarge the upper buckle of the hose by the help of tongs and then pull it out from the collar.
2. Shorten the hose for sufficient length by the help of knife.



Be careful while shortening of the hose by knife. Hoses are strengthening by twists from the hard material.

3. Stick the hose in the collar and block it by buckle, see pic.24.



Stick the hose in the collar until the notable backstop! Hoses must be stretched, when the seeding sections lay in lower position.

**Pic. 24** Mounting of the seed tubes



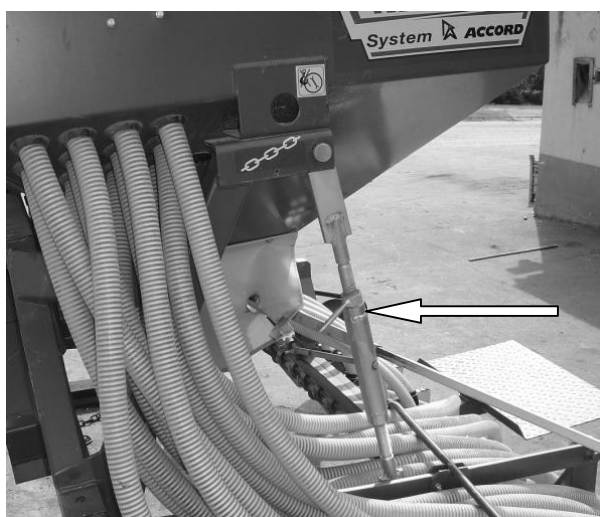
### ***Adjustment of the beam of the sowing coulters***

- ! Beam of the sowing coulters and draw rods with parallelogram must be distant from the pressure roll barrel

For pressure roller with average bigger than 0.5m, or for beams of croppers mounted over the pressure roller, there is a special elevated holder for beam of the sowing coulters./ it exists for the seed drill MB/. This secures enough free space between parallelogram and pressure roller even if the adjusted high is correct.

Adjust the beam of the sowing coulters up by the help of the stretching screws pic.25 to get the height of the lower edge of the beam from the surface 30-35cm.

- ✚ For new adjustment of soil – cultivating machine, the position of the beam of the sowing coulters is changed. It is needful to adjust the beam up again.



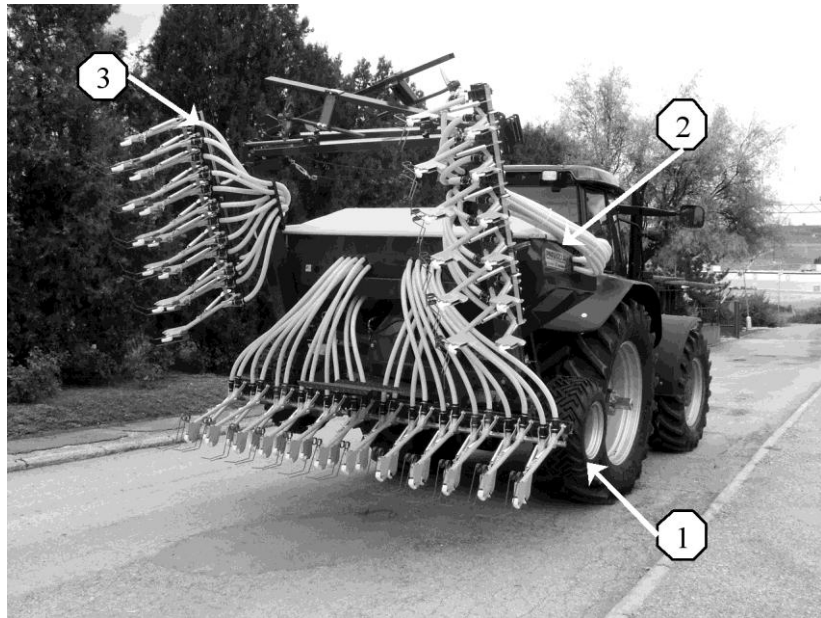
**Pic.25** stretching screws of parallelogram

# Differences of the seed drills ME

## Scheme of the seed drill

The seed drill ME is dedicated for big working weights with hydraulically folding beam of the sowing coulters.

1. drive wheel
2. hopper with two outputs, dozers, tubes with distributing heads
3. hydraulically folding frame



**Pic.26** The seed drill ME



- Control the screw connections more often and tighten them regularly
- Take care that while folding and tipping can not happen that the sowing hoses can brake through
- Because of the safety purposes, the seed drill is equipped with entrance stairs



Tractor and the seed drill must stand on constant and flat surface. While mounting there can not be anyone between tractor and the seed drill.

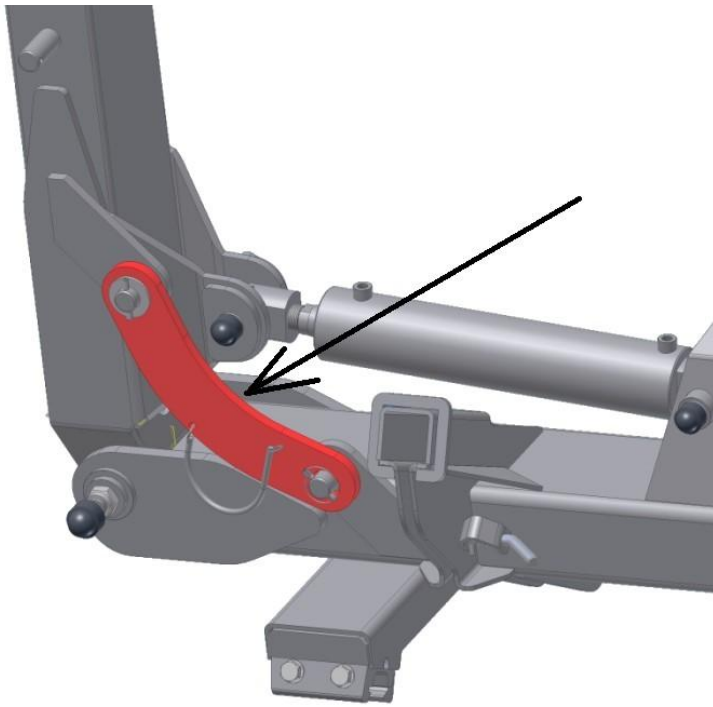
1. Attach the seed drill on the tractor by draw rods of the 3 – point hanger or by the help of fast suspender.
2. Attach hydraulic outputs:
  - a. For operating of markers onto the single- acting operating valve of the tractor
  - b. For the hydraulic folding of the beam of the sowing coulters onto the double – acting operating valve of the tractor.



Needful operating pressure for folding is 120 bar. In that case when the operating valve for folding is not pushed, the beam of the sowing coulters is automatically blocked in a given position.



While transport, block the operating valve of the hydraulic folding in tractor. You avoid the unwanted folding. Except of it, close the ball valve in connecting line. When transporting the ME 8 sowing machine, secure the folding parts with the component as shown in Picture 26b.



**Picture 26b** Securing the folding parts of ME 8m

### ***Side tracking of the seed drill***



The seed drill must stand on the flat and constant surface

Before dismounting, wean the seed drill onto supports.



The seed drill ME must be weaned for longer period of time only in tipping position; otherwise the sowing hoses can be damaged.

### **Turning with attached seed drill**

1. While turning on the edge of the fields lessen the working speed and lift the seed combination up.
2. In a half height of lift turn the gear box output shaft of the tractor off.
3. For repeated load of the seed combination, turn the gear box output shaft on, when engine RPM are lessened. Only then rise the working speed up.

By this you avoid the high thrusts while turning on and you protect the drive of the ventilator. During work drive always with constant operating speed of the gear box output shaft to get an optimal charging.



Seed drills, which are equipped with a centrifugal clutch, can be used only with drive 1000RPM. The operating speed of the gear box output shaft must reach min. 650 RPM, so the moment of turning would be transferred correctly.

# Hydraulic Drive of ventilator

## **Safety precautions**

Hydraulic Drive of the ventilator can be used, according to instructions, only for seed drills of type MA, MB, MD, ME. Every other usage is inaccessible. For consequent damages, FARMET a.s. does not take a responsibility. Guarantee for damage of tractor in consequence of incorrect mounting is out – of the question.

Hydraulic drive of the ventilator can be manipulated and repaired only by persons, who are perfectly familiar with this work and are informed with possible risks.

Dismount hydraulic quick-acting couplers without pressure!

Read and keep the instructions in chapter 2 – Safety Precautions.

## **Product data**

**Chart 2** Product data of hydraulic drive of the ventilator

Type	Working weight	Fluid motor		Stream of oil (l/min)	RPM of the ventilator (ot/min)
		absorbing capacity (cm <sup>3</sup> )	RPM (ot/min)		
MA	3 - 4,5	8	4150	40	4150
MB	3 - 4	8	4200	40	4200
MB	4,5	8	4400	43,5	4400
MD	6	8	4150	40	4150
MD	8	8	4600	43,5	4600
ME	5-8	8	4500	43,5	4500

## *Installation of the hydraulic hoses*



Oil escaping under the high pressure can come trough skin and causes serious injuries. In that case, call the first aid. Never install hydraulic components inside the cabin of tractor!

Install the hydraulic hoses, so that they won't be damaged or exposed to chafing while lifting the seed drill up.

## Connection to the tractor

### Description of the function

The oil flows into the three-way regulation valve, where required oil overflow is being adjusted according to the hydraulic engine revolution number. The resulting number of the ventilator revolutions must be checked by the electronic system of the machine. The ventilator revolution number of different seeding machines can be found in the table no. 2.

### Non-pressure back branch

The non-pressure back branch prevents the hydraulic engine damage.



Maximum permissible pressure in the back branch is 10 bar.  
The shaft seal will be displaced by overpressure.

Following points must be taken into account when selecting the position of the back branch connection to the tractor hydraulic system:

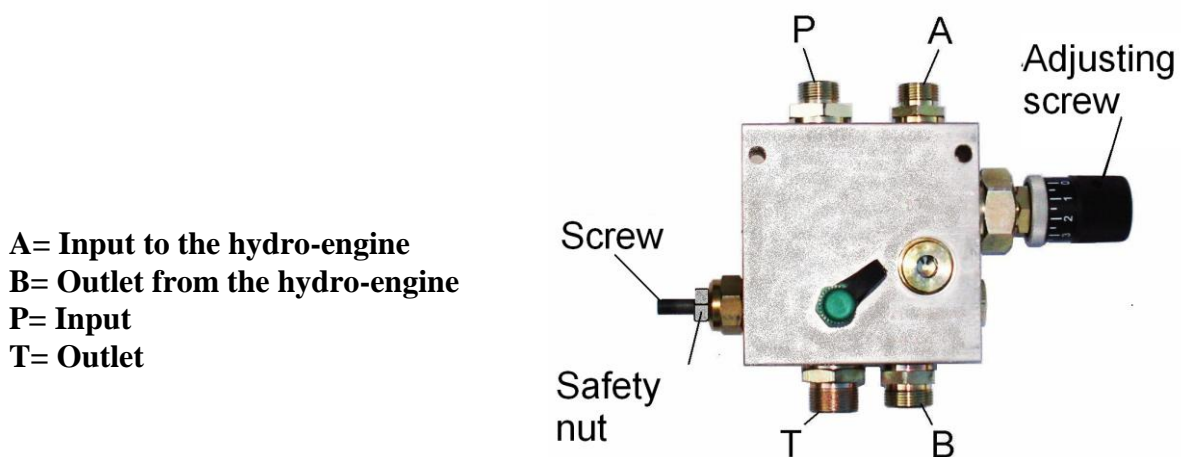
- Returning oil must flow through the hydraulic filter.
- Returning oil must not flow through the regulation valves because the back branch pressure would increase too much.

### Operation



Maximum permissible ventilator revolution number is 5000 rpm!  
Mind the hydraulic joint quality!

Adjust the revolutions only while the ventilator is off. The adjustment by the ventilator's operation can cause the machine damage. Appropriate revolutions of the ventilator must be kept for the seeding machine correct function according to the seeding machine type and operational width (see p.38/table no.2).



Picture no. 27 The three-way regulation valve

## *Connection to the tractor*

Joints and connectors can differ by particular tractor manufacturers. Perform the connections on the tractor in following order:

1. Outlet (**T**)
2. Input (**P**)

### *First putting in operation*

With first putting in operation the revolutions have to be adjusted until the hydraulic oil reaches the operational temperature and the ventilator revolutions are stable.

In case of putting in operation with cold oil and unmodified position of the three-way regulating valve (Picture no. 27) the ventilator's speed is a bit higher in the warming phase. The revolutions reach originally adjusted rate after reaching the oil operational temperature.

### **Application on various tractors**

#### *On tractors with the flow regulating valve*

- Open the flow regulating valve utterly (Picture no. 27). The flow regulating valve is exactly open when the *regulation screw* is completely driven.
- Activate the operating valve on the tractor.
- Adjust required revolutions by amount of oil in the tractor.

#### *On tractors without the flow regulating valve, without the regulating pump*

- Adjust required revolutions by the *regulation screw* (Picture no. 27) on the three-way flow regulating valve.

#### *On tractors without the flow regulating valve, with the regulating pump*

The three-way flow regulating valve must be switched to two-way flow regulating valve. The adjustment has to be done according to the following points:

- Release the safety nut (Picture no. 27)
- Drive the screw utterly. The valve is switched to the two-way flow regulating valve by the driving the screw.
- Re-tighten the safety nut.
- Adjust required revolutions by the adjusting screw on the flow regulating two-way valve.



The switch from the three-way to two-way flow regulating valve, or in the opposite direction, must be done when the ventilator is off. The adjustment by the ventilator's operation can cause the machine damage.



The hydraulic drive of the ventilator has been tested on the hydraulic unit. The hydraulic circuit of the ventilator drive is filled up with the oil SHELL DONAX TD.

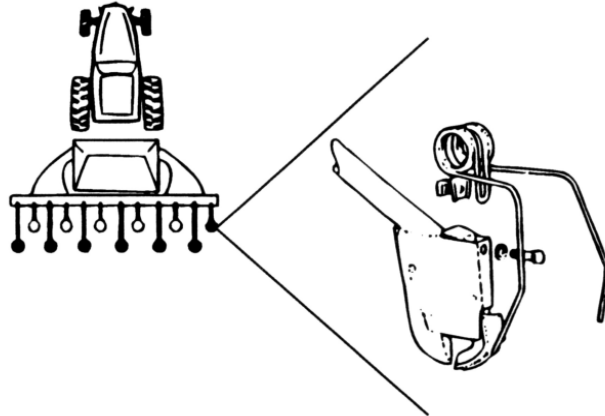
For tractors with regulation pump and with integral flow valve (closed hydraulic system), there is needful to adjust the sufficient volume of oil and totally open three – way regulating flow valve, pic.27.



## Other accessories

### *Simple harrows*

Simple harrows are determined for mounting onto suffolk sowing coulters. While using disc sowing coulters or X-disc sowing coulters it is needful to use harrows – S. Simple harrows must be screwed to all long sowing coulters and to outside short coulters.



**Pic. 28** Simple harrows

### *Harrows – S*



While driving on the road it is necessary to fold the harrow frame!

Harrow S is suitable for steady comprising of seed in that case when the soil, into which seed is sowing, contains from greater part the plant residues.

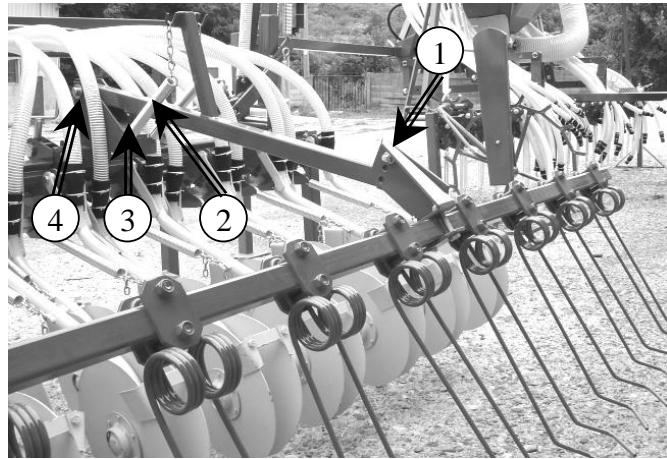
### *Mounting*

Screw carriers of the harrow frame onto the beam of the sowing coulters. Choose the position of carriers on the beam of the sowing coulters according to distance between sowing coulters and according to the mounting space. The harrow frame can not touch other parts of the seed drill. For the seed drill MD, you get the space for a wheel in the transport position by the folding part of the harrow frame.

### *Adjustment*

- Pressure of the harrow frame : by the help of a draw spring /2,pic.29/
- Depth of the splitting: by the help of a bumper/3,pic.29/
- Inclination of splitting : by the help of the hanging outlet/1,pic.29/

1. hanging outlet
2. draw springs
3. bumper
4. hanging outlet



**Pic. 29** harrowing frame

### ***Stairs up to the hopper***



It is forbidden to transport persons while standing on the stairs. While climbing and descent from the seed drill, the other part of the seed drill can not be used.

Departure stairs make easier to fill the hopper.

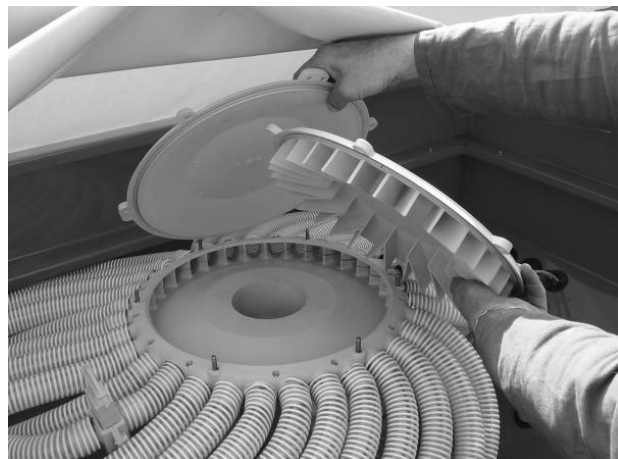
### ***Extension of the hopper***

Extension of the hopper is delivered for seed drills MF. In the case of additional mounting, do all according to these steps:

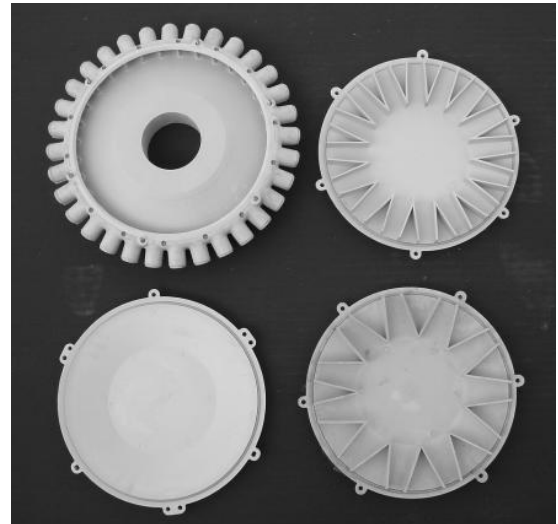
1. Dismount a tarp of the hopper and helping framework.
2. Load the extension on the hopper.
3. Pierce the extension and the hopper and screw them down.
4. Screw down the helping framework of the tarp and the tarp onto the extension of the hopper.

### ***Cover of distributor***

Sowing of the seed for bigger width of lines is possible by exchange of soft cover of distributor by reducing cover. You can find types of reducing covers in your sellers or directly in FARMET a.s..



**Pic.30** mounting of reducing head



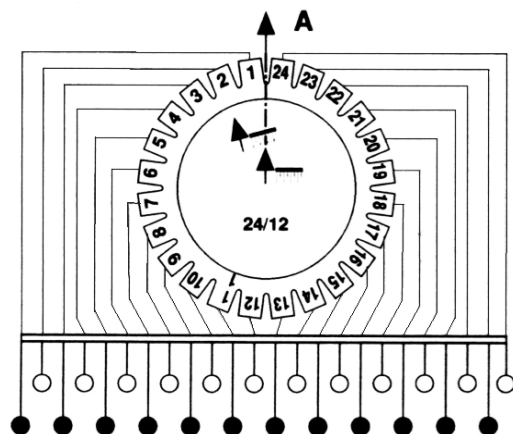
**Pic. 31** Distributor 32, soft cover of distributor 32, reducing cover 32/16 and 32/11

Screw the reducing cover, so that arrow on the reducing cover will show a driving direction. For reducing covers 24/12 you have two possibilities of mounting:

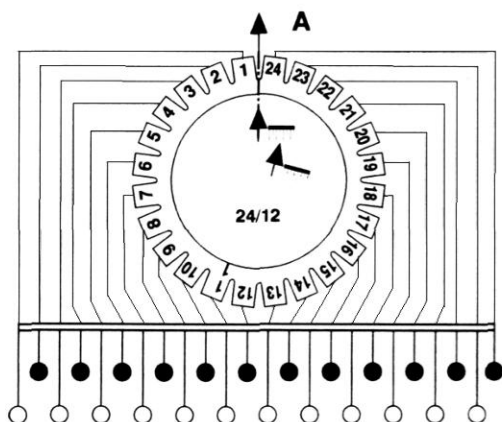
- An arrow of the reducing cover is facing in direction – only long seeding sections are sowing, Pic. 32
- An arrow of the reducing cover overrides off a driving direction – only short seeding sections are sowing,

A driving direction

- The seeding section are sowing
- ◇ The seeding sections are closed



**Pic.32** sowing through long seeding sections



**Pic.33** sowing through short seeding sections



If you mount the reducing cover of distributor, revise the adjustment of markers.

## ***Mechanical flaps, closing flaps and el. motoric flaps***

### ***Mechanical flaps***

You can use the mechanical flaps for blocking of the seeding section or for reducing of the working width. In up position the seed flows back to the hopper, see pic.34. While using of mechanical flaps, do not fill the hopper till the top to get non – problem backward stream of seed.

1. Mechanical flap in up position, the seed flows back to the hopper.

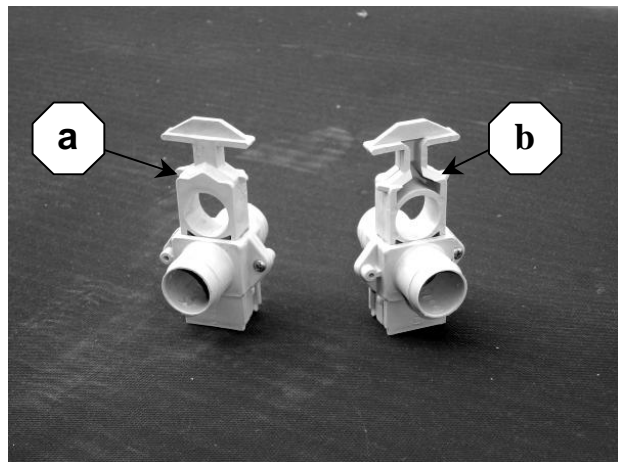
**Pic.34** Mechanical flap mounted on distributor



Attach the mechanical flap on the hose of seeding section, which needs to be blocked, see pic.33.

Take care of correct direction of mounting, see pic.35:

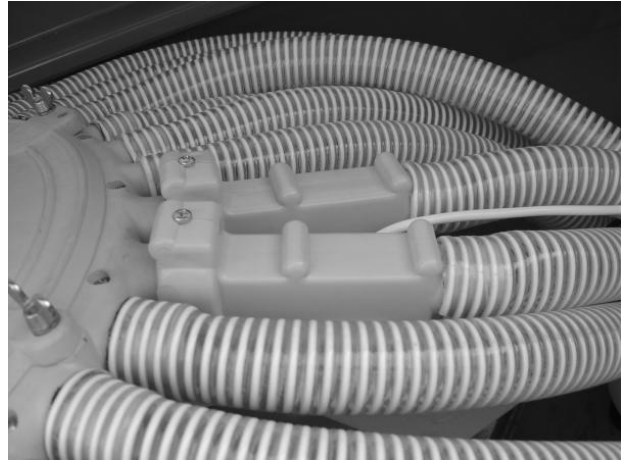
- a./ mount the soft side toward the seeding dot
- b./ mount the deepen side toward the distributor



**Pic.35** direction of mounting of the mechanical flap

## Closing flaps

Closing flaps are needful for ground of tracked lines. When the flap is closed, the seed is sowing into the neighboring lines.



**Pic.36** closing flaps mounted on distributor

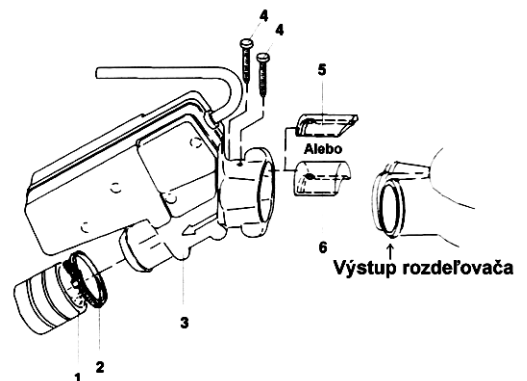


Seed must flow through the closing flap without any obstacles.

Mount the closing flap on distributor according to these steps: /see pic.37/

1. If you decided, with which seeding section you want to ground tracked line, dismount seed tube from distributor.
2. Screw down the screw into the appropriate outlet of the closing flap.
3. According to type of distributor, choose the correct attachment connector and load it on the output of distributor, which needs to be closed. Put the groove precisely on the edge of the distributor output. Load the both closing flaps as possible as it gets.
4. Draw the screw close, but in that way that it will be possible to move with flap.
5. Control the correct arrangement of closing flap on distributor output.
6. Put the seed tube on the outlet of closing flap and attach by fixing connector.
7. Attach the closing flap into the installation box
8. Control correctness of the closing flap function. Eventually shorten hoses/ see pic.31/
9. After first hours of work, control stable arrangement of closing flaps. Check the track width of wheels.

1. Hose
2. Attachment connector
3. Closing flap
4. Screw
5. Attachment connector for distributor with 32 or 40 outlets
6. Attachment connector for distributor with 24 outlets

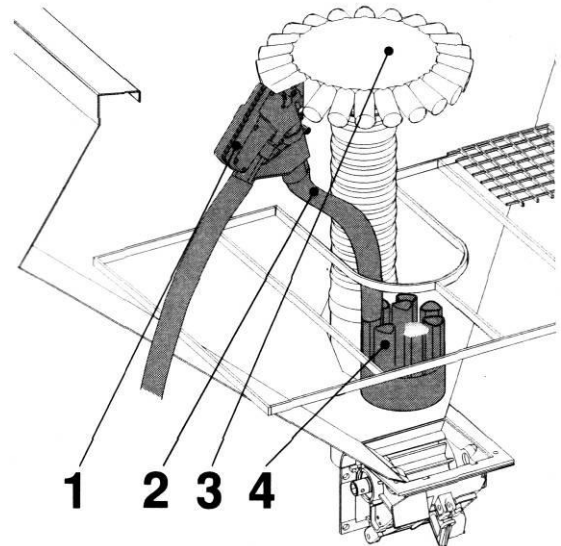


**Pic.37** Attachment connectors for mounting of closing flap

### *El. motoric flaps*

With el. motoric flaps (1, pic.38) you can make tracked lines in the same way as with closing flaps. While using el. motoric flaps the seed flows back to the hopper. The seed come back through hose output into the collecting bell of the hopper.

1. by – passing flap
2. backward hose
3. distributor
4. collecting bell



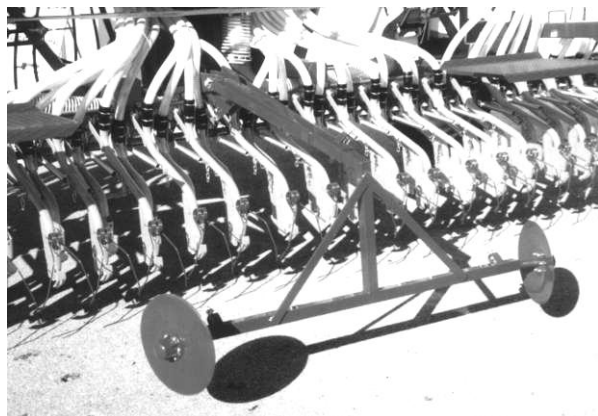
**Pic.38** Mounting of the el.motoric flap onto the distributor

### *Pre-emergency marker*



While driving on the road it needs to tip and block the marker.

Pre-emergency marker makes tracked lines for sprinkler. Hydraulic valve is manipulated according to tracked lines electronics. An over arm is dropped on, whenever the seeding sections are blocked by flaps.



**Pic.39** Pre-emergency marker

Marker with two discs /see pic.39/ is dedicated for movements, in which both tracked lines are formed during one ride.

Marker with one disc is dedicated for movements, in which both tracked lines are formed during one ride backwards.

Marker is screwed down on the beam of the seeding sections.

! If the seed drill is equipped by divided beam of the seeding sections (MD), do not attach the pre-emergency marker on the place of connection of two beams.

Discs of pre-emergency marker must be adjusted directly behind closed seeding sections. They can not obstruct hopper springs in their activity. Length of marker can be changed by putting in of iron blow sticks into each other.

## Care and maintenance



Keep Safety precautions for care and maintenance on page 7.

### Maintenance

#### Cleaning

By regular cleaning you get working reliability and optimal performance of your machine.



While cleaning the covers of electronic parts and ventilator, there can not be used high pressure cleaning equipment, or direct stream of water. Covers, screw connections and ball bearings are not water – proof.

- Clean the line seed drill from outside. Dismount a bend from injector to let water run away.
- Remove impurities and rust from V-belt pulley.
- Clean the wheel of dozer by tight brush.
- Clean the seeding sections, hoses, hopper, dozer and ventilator by pressed air.
- Remove the cover from head raced box and clean a chain drive.

#### Conserving of the seed drill

If you want to put the seed drill out of an action for a longer period of time, except of mentioned points keep these instructions:

- Wean the see drill into the covered platform and put it on supporting legs.
- Empty the hopper and cover it by tarp
- Let the emptying doors open/ a protection from possible damage by rodents/.
- Dismount the control unit of the electronics and lay it down in a wet place. Predetermined values stay as before.
- Dismount V-belts.
- Protect the machine from corrosion. When you use the oil in spray, use only that kind, which is easily biologically dismantled.



## **Periodic controls**

Regular maintenance and usage of spare parts from a company FARMET a.s., these are presumptions for failure – free running of the seed drill and they lengthen its currency.

### *1. Before the first seeding*

Control of:

- Air pressure in tires
  - 7,50x16 8PR - 2,8 bar
  - 23x8,50-12 6PR - 3,1 bar
  - 31x15,5-15 8PR - 3,0 bar
- Tightening of V – belts
- Electrical installation
- Hydraulic distribution – pressure limiters
- Hoses of seed tubes
- Dozer
- Track width of the sowing dots
- Drawing close of all screw connections
- Race – way shaft and drive of dozer
- Purity in hopper
- Signalization of level of seed
- Functioning of tracked lines
- Mounting of the seed drill onto 3 – points fast suspender and then suspender onto clamping device of tractor

## **Attention!**

**Control permeability of seed tubes and the seeding sections daily.**

**After finishing of season clean the machine carefully and dry it by a flow of air.**

### *2. After 50 Ha*

Control of:

- Air pressure in tires
  - 7,50x16 8PR - 2,8 bar
  - 23x8,50-12 6PR - 3,1 bar
  - 31x15,5-15 8PR - 3,0 bar
- Tightening of V – belts/ acceptable deflection of tighten V – belts is 5 – 8 mm when endurance power is approx. 70 N/
- Purity in hopper
- Deflection of seed tubes/ keep the declining conduct of hoses-
- Screws on the holders of the seeding sections
- Pressure in tires
- Locking of fast suspender
- Tightening of chain of the head race
- Insurance pins of marker

3. *After every 50 Ha control*

Control of:

- Tightening of V- belts
- Purity in hopper
- Screws on the holders of the seeding sections
- Deflection of seed tube and purity of all dots

4. *After 150 ha control*

Control of:

- Screw connections on the seed drill
- Lubrication of chain head race
- Purity in hopper
- Hydraulic distribution
- Track width of the sowing dots
- Air distribution
- Remove all impurities fell behind the protective fabric top

5. *After 300Ha*

Control:

- Screw connections on the seed drill
- Lubrication of chain head race
- Purity in hopper
- Hydraulic distribution
- Track width of the sowing dots
- Air distribution
- Bearings of ventilator
- Tightening of V – belts
- Functioning of tracked lines
- Construction of cases PVC on the tilting bearing
- Dozer/ scraper gum, brush – tightness/

6. *After 600 Ha*

Control:

- Visual control of the seed drill
- Pressure in tires
- Purity in hopper
- Tightening of chain of the head race
- Tightening of V – belts
- Drive of dozer
- Dozer/ scraper gum, brush – tightness/

## 7. After 1000 Ha

*Special control by service technician*

*Control of:*

- Parts of electrical distribution
- Hydraulic distribution
- Cutting and skids
- Dozer/ scraper gum, corrugated roller, bearings, clapper, sleeve, jacket, prickles, cog wheels/
- All bearing of the seed drill
- Discs of markers
- Insurance pins and spring of carriage
- V- belts
- Wear of tires
- Distribution of air and seed tubes
- Conditions of springs
- Holders of the sowing dots
- Condition of cases PVC on mechanical pressure

**Control after 1000 Ha – every 150 ha according to instructions**

## **Conclusion**

Operating and maintaining instructions of additional equipment are delivered in form of complement only to machines, which have this additional equipment mounted on their machines at user's pleasure.

Producer reserves the right of additional development and modernization of the machine when its main features and utility value do not change. This is the reason why your machine can differ in some details from standard type.

In conclusion, we want to wish you comfortable and effective work with our machine and in future we will invite all your constructive comments and matter connected with its next improvement.

## **Removal of some diseases**

By the help of this outline you can remove possible disease very quickly.

### **Mechanical parts**

<b>Disease</b>	<b>Possible cause</b>	<b>Removal</b>	<b>Page</b>
Snappy noise in dozer	Too big amount of seed. Alien object	Dismount flexible pins from filling shaft	-
Value of seed is changed arbitrarily	The seed is wet		-
	Spindle rotates too freely	Tighten matrix on dozer crank	15
	Chamber seeding barrel is blocked	Clean the barrel, check the cleaning wheel	17
	When soft sow the red tooth wheel is not pushed in.	Push the red wheel in	16
For soft seed: by using of micro – dosing system it is not possible to reach less than 4 – 5 kg/Ha	Sealing in dozer is damaged by rodents	Exchange the sealing	-
	Sealing does not bear on barrel	Set the position of sealing	-
Delivery of seed is too high	Fast turning of hand crank during sow control	Keep 1 revolution per second	16
	When soft seed: the red tooth wheel is not pushed in.	Push the red wheel in	16
Sowed amount of seed is high	Incorrect transfer in drive box of head raced wheel	Check the number of teeth according to catalogue ND	-
	Fault setting	Repair the setting	14
	Fault removal of seed		-
Delivery of seed is too low	Micro - dozing system is turned on	Turn micro – dosing system off	16
	When sowing of soft seed: chambers are polluted, cleaning wheel is blocked		17
Every other line is sowed retarded	Back seeding section sow too deeply	Increase the pressure on the front sections, lessen the pressure on the seeding sections centrally	12
No seed section delivers the seed	Bend is blocked, drive shaft is not mounted	Secure the right RPM of the gear box output shaft, attach the gear box output shaft	-
	The gear box output shaft is not turned on	Turn the gear box output shaft on	-

Seed tubes are blocked by the seed	The seeding sections are blocked(by loam)	Clean the seeding sections	-
	When normal sow: throttle valve is regulated for sowing of soft seed	Set the throttle valve for normal seed	15
	Seed tube is bended or broken	Control the seed tubes, eventually shorten them.	31
	Small RPM of fan	Keep the right RPM of fan	20,35
Harrow S works deeply		Lessen the pressure on the seeding sections	12
	Incorrect regulated position	Set the harrowing frame	38
Harrow S is chocked	Faultily working angle	Lessen the working angle	38
Arm of marker is tipping fast/slowly or does not tip	Throttle valve is missing in hydraulic quick – acting coupling	Mount the valve	-
	Throttle valve is blocked	Clean the valve	-

#### Hydraulic drive of ventilator

Disease	Possible cause	Removal	Page
Sealing of the hydraulic engine shaft was pushed out	Too high pressure in backward branch, exchange of input and output branch	Pressure in backward branch max 0.15 MPA, correct attachment of hydraulic connections	35
Oil seeks from hydraulic motor	Worn or incorrectly mounted sealing of shaft	Mount the new sealing	-
Insufficient RPM	Incorrect setting of 3-way regulation valve, tractor does not deliver enough oil or the operation pressure is not reached	Check the 3-way regulation valve of flow, hydraulic pump and backward valve of pressure	38
Hydraulic oil is being overheated	Too high flow of oil	Mount the additional oil cooler, preset the 3 – way regulation valve	-

**Product data**

**Chart 3 Product data of seed drills**

Model	MA			MB, MC			MD		ME			
Working width (m)	3	4	4,5	3	4	4,5	6	8	5	6	6,6	8
Number of lines/ width of line (cm)	24/12,5 32/9,4	24/16,7 32/12,5 40/10	32/14 36/12,5 40/11,2	24/12,5 32/9,4	24/16,7 32/12,5 40/10	32/14 36/12,5 40/11,2	48/12,5 64/9,4	64/12,5	40/12,5 48/10,4	48/12,5 64/9,4	48/13,8 64/10,4	64/12,5
Dimensions in transport position (m):	M	MS	MS	MK	MKS							
2. Width	2,97	2,97	2,97	2,97	2,97	-	2,5	2,5	3,0	3,0	3,0	3,0
3. Length	1,6	1,6	1,6	1,6	1,6	-	7,3	9,3	3,5	3,5	3,5	3,5
4. Height	2,0	2,0	2,0	2,0	2,0	-	2,3	2,3	2,8	2,8	2,8	3,3
Dimensions in working position (m):												
5. Width	2,97	4,0	4,5	3,2	4,2	4,7	6,0	8,0	5,0	6,0	6,6	8,0
6. Length	1,6	1,6	1,6	1,9	1,9	1,9	2,0	2,0	2,6	2,6	2,6	2,6
7. Height	2,0	2,0	2,0	2,2	2,2	2,2	1,8	1,8	2,7	2,7	2,7	2,7
Working speed (km per hour)	5-12	5-12	5-12	5-12	5-12	5-12	5-12	5-12	5-12	5-12	5-12	5-12
Transport speed (km per hour)	10	10	10	10	10	10	10	10	10	10	10	10
Daily run (Ha)	20-25	25-30	27-32	10-15	12-20	12-20	45	60	38	45	50	60
Weight without seed (kg)	530	630	683	530	630	683	1330	1450	1950	2130	2146	2220
Capacity of hoppers (dm <sup>3</sup> )	650	650	950	650	650	950	2x950	2x950	2000	2000	2000	2000
Slope accessibility (°)	11	11	11	11	11	11	11	11	11	11	11	11
Power (HP)	60	80	90	120	140	160	100	140	100	120	120	160

Farmet a. s.  
Jirinkova 276  
CESKA SKALICE 552 03



Phone: 00420 491 45 01 40  
491 45 01 22  
Fax: 00420 491 45 01 36

# LETTER OF GUARANTEE

MACHINE TYPE: .....

PRODUCTION YEAR/PRODUCTION NUMBER: \_\_\_\_\_

CHECK CONFIRMATION: \_\_\_\_\_

ADDRESS (BUYER): \_\_\_\_\_

ADDRESS (SELLER): \_\_\_\_\_

**WARRANTY CONDITIONS:**

- I. The manufacturer provides a warranty of 24 months for these machine parts: main frame, axle, and machine tow bar. For other parts of the machine, the manufacturer provides a warranty of 12 months. The warranty is provided from the date of sale of the new machine to the end user (consumer).
- II. The warranty applies to hidden defects that will show in the warranty period with proper use of the machine and while fulfilling the conditions stated in the operating manual.
- III. The warranty does not apply to wearable spare parts, i.e. regular mechanical wear and tear of replaceable parts of the working sections (shares, etc.).
- IV. The warranty does not apply to indirect consequences of possible damage, such as service life decrease etc.
- V. The warranty is bound to the machine and is not void upon an owner change.
- VI. The warranty is limited to the disassembly and assembly, possibly replacement or repair of the defective part. The decision, whether to replace or repair the defective part, is up to the contractual workshop of Farmet.
- VII. During the warranty period, only the authorised servicing technician of the manufacturer may perform repairs or other interventions into the machine. In the opposite case, the warranty will not be acknowledged. This provision does not apply to the replacement of wearable spare parts (see point III).
- VIII. The warranty is conditioned by using the genuine spare parts of the manufacturer.

\_\_\_\_\_  
PRODUCTION PLANT  
CONFIRMATION

\_\_\_\_\_  
SELLER CONFIRMATION

\_\_\_\_\_  
DATE

\_\_\_\_\_  
FIRST SALE DATE



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2. ⒸZ Strojní zařízení: - název : **Radličkový sečí stroj**  
ⒸGB Machine: - name : **Share sowing machine**  
ⒸD Fabrikat: - Bezeichnung : **Sämaschine**  
ⒸF Machinerie: - dénomination : **Semoirs à dents**  
ⒸRU Сельскохозяйственная машина: - наименование : **Лемешная сеялка**  
ⒸPL Urządzenie maszynowe: - nazwa : **Siewnik radełkowy**  
  
- typ, type : **MONSUN**  
- model, modèle : **MA 300; 400; 450**  
- ⒸZ výrobní číslo :   
- ⒸGB serial number  
- ⒸD Fabriknummer  
- ⒸF n° de production  
- ⒸRU заводской номер  
- ⒸPL numer produkcyjny


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Technical director

  
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General Manager







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**F** Machinerie: - dénomination : **Semoirs à dents**  
**RU** Сельскохозяйственная машина: - наименование : **Лемешная сеялка**  
**PL** Urządzenie maszynowe: - nazwa : **Siewnik radełkowy**  
  
- typ, type : **MONSUN**  
- model, modèle : **MB 300; 400; 450**  
- **CZ** výrobní číslo :   
- **GB** serial number  
- **D** Fabriknummer  
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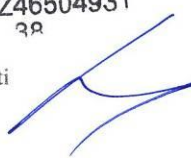
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**RU** Утвердил, **PL** Uchwalil

V České Skalici dne: 03.01.2012

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2. **Strojní zařízení:** - název : **Radličkový sečí stroj**  
**Machine:** - name : **Share sowing machine**  
**Fabrikat:** - Bezeichnung : **Sämaschine**  
**Machinerie:** - dénomination : **Semoirs à dents**  
**Сельскохозяйственная машина:** - наименование : **Лемешная сеялка**  
**Urządzenie maszynowe:** - nazwa : **Siewnik radełkowy**  
  
- typ, type : **MONSUN**  
- model, modèle : **MC 300; 400**  
- výrobní číslo :   
- serial number  
- Fabriknummer  
- n° de production  
- заводской номер  
- numer produkcyjny

3. Příslušná nařízení vlády: č.176/2008 Sb. (směrnice 2006/42/ES). Applicable Governmental Decrees and Orders: No.176/2008 Sb. (Directive 2006/42/CE). Einschlägige Regierungsverordnungen (NV): Nr.176/2008 Slg. (Richtlinie 2006/42/EG). Décrets respectifs du gouvernement: n°.176/2008 du Code (directive 2006/42/CE). Соответствующие постановления правительства: № 176/2008 Сб. (инструкция 2006/42/ЕС). Odpowiednie rozporządzenia rządowe: nr 176/2008 Dz.U. (Dyrektywa 2006/42/WE).

4. Normy s nimiž byla posouzena shoda: Standards used for consideration of conformity: Das Produkt wurde gefertigt in Übereinstimmung mit folgenden Normen: Normes avec lesquelles la conformité a été évaluée: Normы, на основании которых производилась сертификация: Normy, według których została przeprowadzona ocena: ČSN EN ISO 12100, ČSN EN ISO 4254-1.

Schválil dne: 03.01.2012  
Approve by  
Bewilligen, Approuvé  
Утвердил, Uchwalil

V České Skalici dne: 03.01.2012

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2012/005/01

**ⒸZ ES PROHLÁŠENÍ O SHODĚ**  
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**ⒸD EG-KONFORMITÄTSEKTLÄRUNG**  
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2. ⒸZ Strojní zařízení: - název : **Radličkový sečí stroj**  
ⒸGB Machine: - name : **Share sowing machine**  
ⒸD Fabrikat: - Bezeichnung : **Sämaschine**  
ⒸF Machinerie: - dénomination : **Semoirs à dents**  
ⒸRU Сельскохозяйственная машина: - наименование : **Лемешная сеялка**  
ⒸPL Urządzenie maszynowe: - nazwa : **Siewnik radełkowy**

- typ, type : **MONSUN**  
- model, modèle : **MD 600; 800**  
- ⒸZ výrobní číslo :   
- ⒸGB serial number :   
- ⒸD Fabriknummer :   
- ⒸF n° de production :   
- ⒸRU заводской номер :   
- ⒸPL numer produkcyjny :

3. ⒸZ Příslušná nařízení vlády: č.176/2008 Sb. (směrnice 2006/42/ES). ⒸGB Applicable Governmental Decrees and Orders: No.176/2008 Sb. (Directive 2006/42/CE). ⒸD Einschlägige Regierungsverordnungen (NV): Nr.176/2008 Slg. (Richtlinie 2006/42/EG). ⒸF Décrets respectifs du gouvernement: n°.176/2008 du Code (directive 2006/42/CE). ⒸRU Соответствующие постановления правительства: № 176/2008 Сб. (инструкция 2006/42/ЕС). ⒸPL Odpowiednie rozporządzenia rządowe: nr 176/2008 Dz.U. (Dyrektywa 2006/42/WE).

4. ⒸZ Normy s nimiž byla posouzena shoda: ⒸGB Standards used for consideration of conformity: ⒸD Das Produkt wurde gefertigt in Übereinstimmung mit folgenden Normen: ⒸF Normes avec lesquelles la conformité a été évaluée: ⒸRU Нормы, на основании которых производилась сертификация: ⒸPL Normy, według których została przeprowadzona ocena: ČSN EN ISO 12100, ČSN EN ISO 4254-1.

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ⒸGB Approve by  
ⒸD Bewilligen, ⒸF Approuvé  
ⒸRU Утвердил, ⒸPL Uchwalil

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2012/006/01

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**СЕРТИФИКАТ СООТВЕТСТВИЯ ЕС**  
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2. **Strojní zařízení:** - název : **Radličkový secí stroj**  
**Machine:** - name : **Share sowing machine**  
**Fabrikat:** - Bezeichnung : **Sämaschine**  
**Machinerie:** - dénomination : **Semoirs à dents**  
**Сельскохозяйственная машина:** - наименование : **Лемешная сеялка**  
**Urządzenie maszynowe:** - nazwa : **Siewnik radełkowy**  
  
- typ, type : **MONSUN**  
- model, modèle : **ME 500; 600; 800**  
- výrobní číslo :   
- serial number :   
- Fabriknummer :   
- n° de production :   
- заводской номер :   
- numer produkcyjny :

3. Příslušná nařízení vlády: č.176/2008 Sb. (směrnice 2006/42/ES). Applicable Governmental Decrees and Orders: No.176/2008 Sb. (Directive 2006/42/CE). Einschlägige Regierungsverordnungen (NV): Nr.176/2008 Slg. (Richtlinie 2006/42/EG). Décrets respectifs du gouvernement: n°.176/2008 du Code (directive 2006/42/CE). Соответствующие постановления правительства: № 176/2008 Сб. (инструкция 2006/42/ЕС). Odpowiednie rozporządzenia rządowe: nr 176/2008 Dz.U. (Dyrektywa 2006/42/WE).

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The effective technology

2012/007/01

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2. **Strojní zařízení:** - název : **Radličkový sečí stroj**  
**Machine:** - name : **Share sowing machine**  
**Fabrikat:** - Bezeichnung : **Sämaschine**  
**Machinerie:** - dénomination : **Semoirs à dents**  
**Сельскохозяйственная машина:** - наименование : **Лемшная сеялка**  
**Urządzenie maszynowe:** - nazwa : **Siewnik radełkowy**  
  
- typ, type : **MONSUN**  
- model, modèle : **MF 300; 400**  
- výrobní číslo :   
- serial number  
- Fabriknummer  
- n° de production  
- заводской номер  
- numer produkcyjny

3. Příslušná nařízení vlády: č.176/2008 Sb. (směrnice 2006/42/ES). Applicable Governmental Decrees and Orders: No.176/2008 Sb. (Directive 2006/42/CE). Einschlägige Regierungsverordnungen (NV): Nr.176/2008 Slg. (Richtlinie 2006/42/EG). Décrets respectifs du gouvernement: n°.176/2008 du Code (directive 2006/42/CE). Соответствующие постановления правительства: № 176/2008 Сб. (инструкция 2006/42/ЕС). Odpowiednie rozporządzenia rządowe: nr 176/2008 Dz.U. (Dyrektywa 2006/42/WE).

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