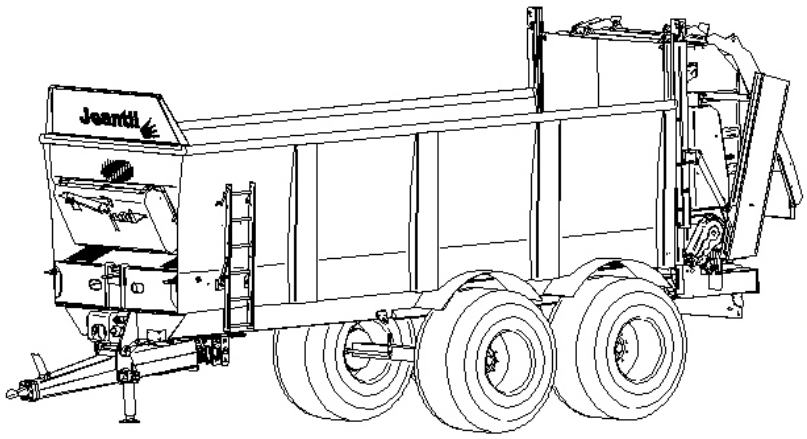
INSTRUCTION MANUAL N° 2
07/2009

PLEASE READ CAREFULLY AND UNDERSTAND BEFORE USING THE EQUIPMENT

MANURE SPREADER EPR

1000 revs/min



EPR 23-16 Bogie

EPR 23-18 Axle

EPR 27-18 Axle

EPR 27-20 Axle

JEANTIL
Rue de la Tertrais
ZI La Hautière BP1
35590 L'HERMITAGE France
Tel: 00 33 (0)2.99.64.04.04
Fax: 00 33 (0)2.99.64.19.56
Spare parts shop tel: 00 33 (0)2.99.64.04.02
Spare parts shop fax: 00 33 (0)2.99.64.09.36

1. Aim of the Instruction Manual

1). General

- The manual concerns all users of the equipment and any person responsible for assembling, installing, operating, adjusting, servicing, repairing or transporting the equipment and its accessories.
- The manual contains practical information for the correct and safe operation, handling, adjusting and maintenance of your equipment.
- Read carefully and ensure you understand the content before using the equipment. Comply with the instructions and the safety-related advice.

2). Warning symbols

This warning symbol identifies important advice that must be followed for your safety. When you see this symbol, be aware that there is a potential risk of injury; read carefully the advice that follows it and inform other users.

3). Keeping the manual

Always keep this manual within easy reach or at your place of work (or operating site).
Pass it on to any other user, including if you lend or sell the equipment.

4). Contact details (customer service)

JEANTIL
Rue de la Tertrais
ZI La Hautière BP1
35590 L'HERMITAGE France
Tel: 00 33 (0)2.99.64.04.04
Fax: 00 33 (0)2.99.64.19.56
Spare parts shop tel: 00 33 (0)2.99.64.04.02
Spare parts shop fax: 00 33 (0)2.99.64.09.36
E-mail: jeantil@jeantil.com – Website: www.jeantil.com

5). Statement of compliance with the European 'Equipment' directive N°98/37/CE.

And to any relevant transposition regulations

The manufacturer: JEANTIL

Rue de la Tertrais
ZI de La Hautière
35590 L'HERMITAGE – France

DECLARES THAT THE EQUIPMENT manufactured by JEANTIL as designated below:

Spreader, bogie	**EPR 23-16**	
Spreader, 2 axles	**EPR 23-18**	**EPR 27-18**
Spreader, 3 axles	**EPR 27-20**	

SERIAL N°: ……

COMPLIES WITH:

1- Labour regulations
2- The revised European equipment directive N°98/37/EC
3- Revised EMC directive (electromagnetic compatibility) N° 89/336 EC
4- Specific safety standards: NF / EN 690 (Spreaders)
5- General safety standards: NF/EN/ISO 12100-1
NF/EN/ISO 12100-2
NF/EN 294
NF/EN 349
NF U 02-001-ISO 4254/1
NF EN 1553
NF EN 811
6- Highway code

SIGNED AT L'HERMITAGE, ON 01/12/2008

NAME OF SIGNATORY: JEANTIL Philippe

SIGNATURES :

2. Contents

1. Aim of the instruction manual

2. Contents

3. Equipment identification

4. Standard operating conditions

5. Technical characteristics

6. General safety rules

7. Environmental protection

8. Fitting and installation

9. Adjustments and maintenance

10. Start-up and operation

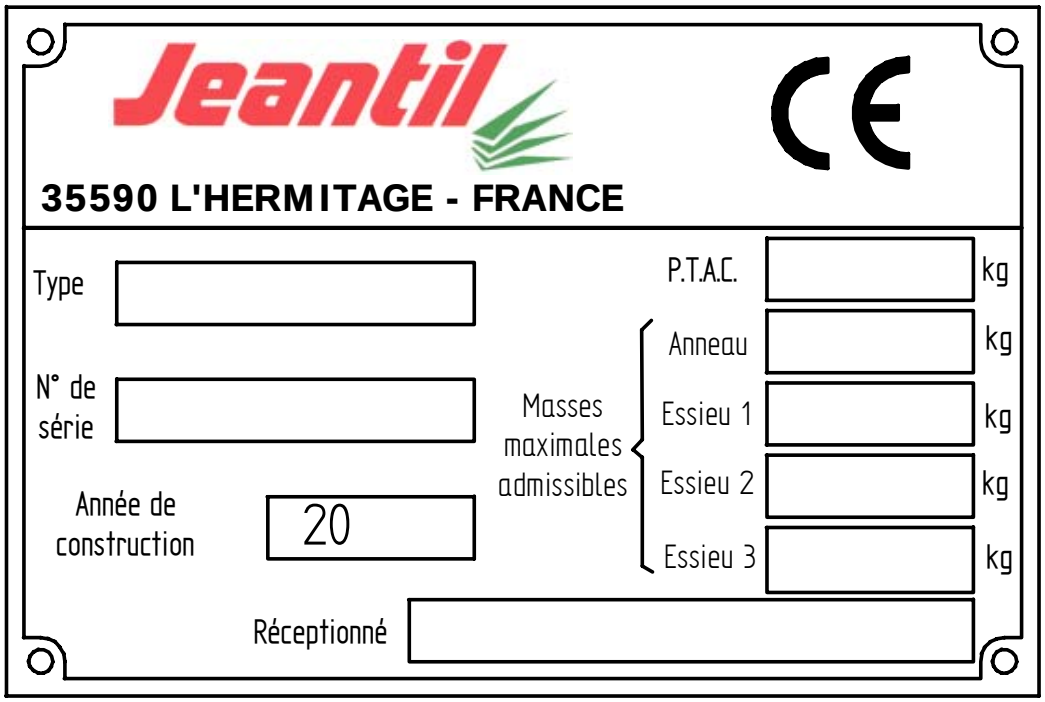
11. Additional equipment information

12. Cleaning

13. List of technical documents

14. Possible incidents and solutions

3. Equipment identification



Ref: 892 770
Manufacturer's plate to EC standards.
Never remove the manufacturer's plate and the EC marking fixed to the equipment.

4. Standard operating conditions

1). Applications of the equipment.

This equipment is intended exclusively for general agricultural purposes i.e.: transporting and spreading manure, transporting silage.
Any other use falls outside normal usage and is therefore forbidden.
For any other use, please contact the manufacturer.

2). Operator qualification.

The equipment must only be used, maintained and repaired by trained operators.

Before using your equipment, acquaint yourself with all controls and their correct operation.

All users, prior to using the spreader, must have carefully read this Manual, have understood it and applied all the safety instructions. Once working, it will be too late to do this.

3). Defining the operating stations.

1. The only operating station for the equipment is the tractor's driving station.

2. Never leave the driving station when the engine of the tractor and the equipment are operating.

3. To access the operating station, use the access devices provided by the manufacturer (ladder, running board).

4). Environmental conditions.

1. Never approach or remain in the areas that are dangerous when the equipment is in operation.

2. Adapt your speed and driving style to the lands, roads and tracks. Be cautious and careful!

3. Do not operate vehicles on slopes (tilting backwards, forwards or on the side) when there is a risk of tipping or overturning.

4. Do not start or brake abruptly.

5. Operate your equipment with sufficient light to ensure safety; use appropriate artificial light if necessary (contact your dealer or mechanic).

5). Manufacturer's and user's responsibilities.

1. Follow all advice contained in this manual regarding levels of knowledge, installation procedures, operation, adjustment, maintenance and repair.

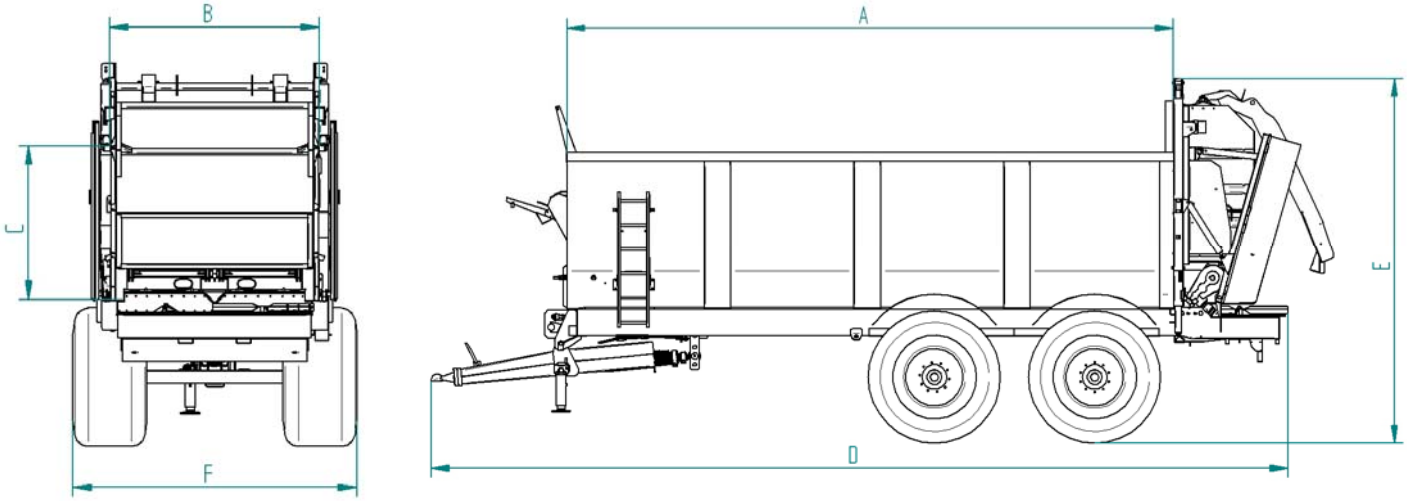
2. Only use spare parts and accessories that comply with the manufacturer's recommendations.

3. Do not carry out any modifications yourself and do not allow others to modify your equipment and its accessories (mechanical, electrical, hydraulic or pneumatic characteristics) without requesting prior written approval from the manufacturer.

4. Failure to comply with these requirements may make the machinery dangerous. The manufacturer disclaims any responsibility if damage or injury arises from such action.

5. Technical characteristics.

1). Dimensions.



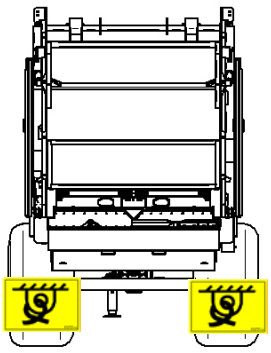
	EPR Spreader characteristics			
TYPES	EPR 23-16	EPR 23-18	EPR 27-18	EPR 27-20
Working load	16 T	18 T	18 T	20 T
Unladen weight (kg)	?kg	?kg	?kg	?kg
A: Internal length of body	5,70 m	5,70 m	6,70 m	6,70 m
B: Internal width of body	2,00 m / 2,3 m	2,00 m / 2,3 m	2,00 m / 2,3 m	2,00 m / 2,3 m
C: Height of body	1400	1400	1400	1400
D: Overall length	8724	8724	9724	9724
E: Overall height	4155	4155	4155	4155
F: Overall width	2770	2770	3070	3070
Epan 7 - 2 Horizontal beaters Ø 650 - 2 Spreading discs Ø 1100	●	●	●	●
PTO 1000 revs/min	●	●	●	●
Belt 4 chains Ø 16	●	●	●	●

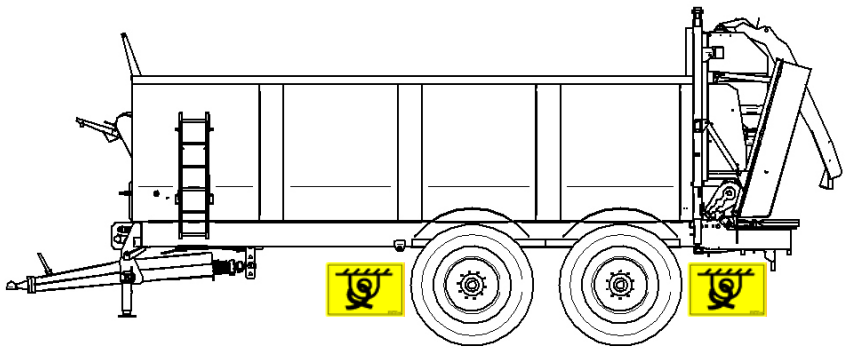
Guillotine door	●	●	●	●
Spring drawbar	●	●	●	●
Hydraulic stand	●	●	●	●
Load transfer	●	●	●	●
Spreader meter	●	●	●	●
1st side shutter	●	●	●	●
Hydraulic power unit - rate 45 l/min (1000revs/min)	■	■	■	■
2nd side shutter	■	■	■	■
Forward proportional flow with radar	■	■	■	■
Weighing, 4 sensors	■	■		
Weighing, 6 sensors			■	■
Following axle	■			
Rear steering axle	■	■	■	■
Front and rear steering axle				■
Ball joint ring K80	■	■	■	■
Tele-pressure 2 axles	■	■	■	
Tele-pressure 3 axles				■

● Standard
■ Option

The equipment complies with safety standards. We reserve the right to change our equipment and their characteristics at any time.

2). Stowing diagram.





6. General safety rules.

1). General.

1- Never forget that knowledge, awareness and caution are the best way to ensure your safety.

2- Regulations and rules relating to accident prevention, health and safety at work, and the operation of vehicles on the public highway must be observed at all times.

3- Chapter 4 (Standard operating conditions) of this Instruction Manual, contains basic directives that must be followed for the sake of your safety.

4- Make sure that no person, animal or obstruction is located near the equipment before it is set in motion and throughout its operation or any other manoeuvre.

5- Children must never be allowed near the equipment.

6- Never carry passengers on the equipment.

7- Do not step on the hoods or on any other parts of the equipment, except areas provided for this purpose (ladder, platform, and means of access to the work station).

8- Before carrying out any work on the equipment, ensure that it cannot be started up accidentally.

9- All controls (ropes, cables, rods, hoses, etc.) must be positioned in the locations provided for them so that they cannot accidentally initiate a manoeuvre likely to cause an accident or damage.

10- Before use and after any adjustment or maintenance, ensure that all protective devices are in position and in good condition, and that their latches are engaged.

11- Before use, check tightness of screws, nuts, connectors and wheels. Retighten if required.

12- Do not wear loose clothing, long untidy hair and jewellery that might get caught in the moving parts of the equipment.

13- Keep your hands, arms and feet well away from any moving parts, even those that are slow-moving. Keep well away from moving parts.

14- If you detect any unusual noise or vibration, stop the equipment, and identify and eliminate the cause of the incident before resuming work. Contact your dealer if required.

2). Warning / Pictograms.

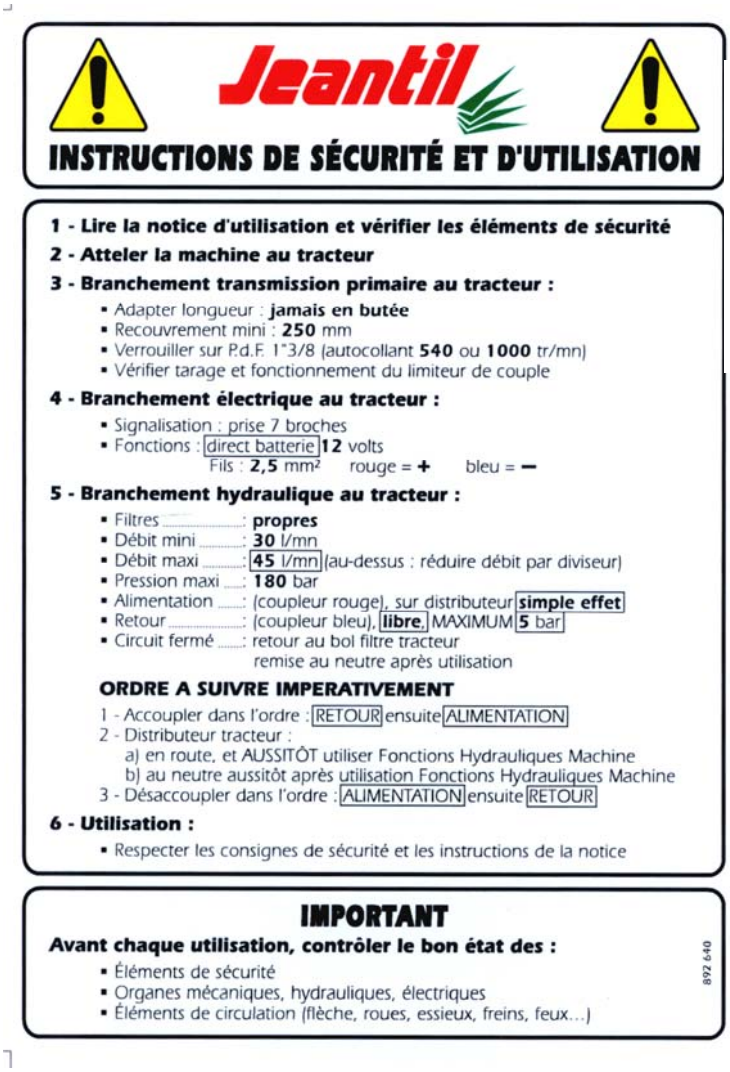
1. Warnings and pictograms placed on the equipment provide information about safety measures to be taken, that will contribute to avoid accidents.

2. Make sure that these warnings and pictograms remain clean and legible. If they are damaged, ask for new stickers from the manufacturer (or agent).

3. If repairs are carried out, check that the replacement parts carry the same stickers as those that have been removed.

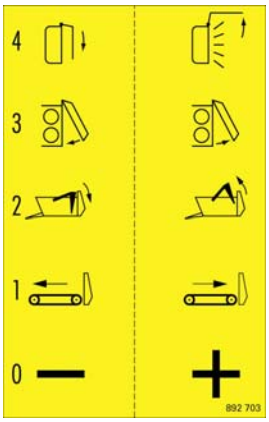
WARNING

Ref: 892 640



SAFETY AND OPERATING STICKER CLEARLY placed IN FULL VIEW on the front of all items of equipment, close to the components used to connect the unit to the tractor.

Stickers for use of equipment.



Ref: 892 703
EP with distributor
and rear cover

Ref: 892 653
Placed at the
back of the
mudguards

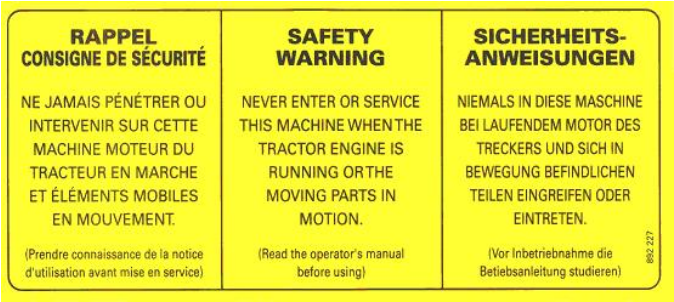
Ref: 892 446
Placed on metallic casing of primary
drive shaft

Ref: 892 651
Placed on the left side of
the drive shaft casing

Ref: 892 687
Placed on the right
and left sides, at
the back of the
spreader

Ref: 892 652
Placed next to parts which
need greasing.
See diagram

Ref: 892 453
Placed above right
and left tail lights



Ref: 892 227
Placed on the front right and left sides of body

Ref: 892 299
Placed on rear left, next to
the valve of rear door

Ref: 892 230
Placed at the front of the spreader

3). Coupling.

1- See chapter 5, Technical characteristics, pages 8 and 9.

2- Hitching the machine to the tractor must only be carried out using the tractor's rear coupling points provided for this purpose.

3- Check the compatibility of the machine with the tractor (minimum engine power, type of coupling, tractor PTO characteristics, etc.). Keep clear of the area between the tractor and the machine until you have stopped the tractor's engine and removed the starter key.

4- Keep clear of the area between the tractor and the machine during any lifting manoeuvre of the tractor.

5- When manoeuvring, select the lowest possible tractor gear ratio. When coupling, attach the equipment's electric control unit in the tractor cab, ensuring that it cannot move during operations.

6- Once the equipment has been coupled up, the hitch must be locked. Check the coupling is correctly locked and in good condition before any movement.

7- Check that the equipment's coupling does not create either an overload or poor weight distribution on the tractor that might compromise stability:

- Do not exceed the maximum allowed loading for the tractor and equipment attachment points.

-Where necessary, fit ballast weights to the mounts provided for this purpose in accordance with the tractor manufacturer's recommendations.

Couple the equipment to a tractor whose linkage is equipped with lateral and vertical locking devices.

8- To drive on roads, respect the coupling height specified in the instruction manual.

4). Failure (or jamming of the equipment).

1- Stop the machine.

2- Disengage the tractor PTO.

3- Wait until all the moving parts are completely at a halt.

4- Stop the tractor engine and remove the starter key or disconnect the battery (or the electric connector).

5- Select the gear shift into neutral.

6- Engage the parking brake.

5). PTO (power take-off) / Drive shaft.

1- Read and learn the manufacturer's instructions for the drive shaft.

2- Check that the PTO guards are in place and in a good condition. Replace them immediately if damaged.

3- Adjust the length between the tractor and the machine, retaining maximum engagement.

4- The minimum engagement length is **250mm**. See white instruction stickers placed on the front of the unit, n° 892 640 (page 11).
Before each operation, check that the drive shaft is in good condition and that it is fitted and locked correctly.

5- Only use the drive shaft provided with the equipment or recommended by the manufacturer.

6- Check before each use that the speed and direction of rotation of the tractor PTO are compatible with the planned usage of the equipment.

6). Maintenance and repair.

6.a. General.

1- Maintenance and repair operations must only be carried out by qualified people.

2- Always maintain the equipment and its accessories in perfect working order to ensure safe and efficient operation.

3- Check the cleanliness of oil.

4- Respect maintenance periods.

Before any servicing or repair:

5- Check the stability of the machine and its components.

6- Lower the equipment to the ground.

7- Fit any provided stability devices (stands, etc.).

8- Check that all moving parts are stopped.

9- Disengage the tractor PTO.

10- Disconnect the hydraulic power hoses between the tractor and the machine.

11- Stop the engine and remove the starter key, disconnect the battery (or the electric connector).

12- Engage the handbrake.

13- Allow any component likely to be at a high temperature to cool down.

6.b. Welding operations.

1- When carrying out any welding operation on the equipment, disconnect the electric connector and the tractor battery.

2- Disconnect and protect any hoses (particularly rubber) and any electric cables to ensure that they are not damaged by incandescent particles that could cause oil loss or a short circuit.

6.c. Servicing the tyres.

1- Only carry out work on tyres if you have the necessary specific tools and experience.

2- Incorrect fitting could seriously compromise your safety.

3- If in doubt, call in qualified staff.

4- Do not fit tyres of a different type from those recommended by the manufacturer.

5- Ensure that the tyres are inflated to the pressures recommended by the tyre manufacturer (See page 22).

6.d. Electric servicing.

Before carrying out any work on the electric system, disconnect the electric connector.

6.e. Hydraulic servicing.

1- Place all hydraulic distributors into neutral (rest).

2- Stop the tractor engine and remove the starter key.

3- Before working on the hydraulic system, check that the installation is not under pressure.

4- Eliminate pressure before disconnecting hydraulic lines.

5- Before restoring pressure in the hydraulic lines, check that all connectors are fully tightened and that the hydraulic hoses are in good condition and correctly protected.

6.f. Repairs.

1- Any failure that might compromise safety must be eliminated.

2- Carry out immediate repairs on any leak or failure affecting the hydraulic or electrical systems. These must be done by qualified staff.

3- Do not attempt to find a hydraulic oil leak (under pressure) using fingers.

4- Damaged or defective protective devices or casings must be replaced immediately.

5- Any original protective device fixed to the equipment must not be removed or modified.

6- Hydraulic hoses that originate from another hydraulic system must not be re-used.

7- When a rigid or flexible line is damaged, it must be replaced immediately.

8- Repairs affecting components under pressure or electrically powered require special tools and procedures. They must only be carried out by qualified staff.

7. Environmental protection.

Ground pollution:

1- Make sure that you do not spill or discard in any drainage system used lubricating oil or other substances such as hydraulic oil…

2- Collect used fluids in sealed, clean containers designed for the purpose. Avoid using containers used for food or drink bottles.

3- Used tyres. It is against the law to store tyres or to dump them, dispose of them in the natural environment or burn them in the open air. Take them to a dealer or an approved collector.

8. Fitting and installation.

Hitching to the tractor

1). Coupling.

1- See page 8 (technical characteristics) and page 14 (coupling).

2- Read sticker page 11 (ref: 892 640).

3- Couple the ring on the drawbar of the spreader to the attachment point or axle hook on the rear of the tractor.

4- Check the lockings.

2). Drive shaft.

2.a. Primary drive shaft.

1- **Read sticker page 11 (ref: 892 640).**

2- Read the manufacturer's instructions concerning the drive shaft, attached to the transmission.

3- Check the safety conditions of the guard. If it shows any sign of damage, it must be replaced before the equipment is used.

4- The drive shaft is placed between the tractor and the spreader.

5- Fit the spreader's primary drive shaft to the tractor's rear PTO outlet, and adjust its length, retaining maximum engagement. Minimum engagement length is **250 mm**.

6- Ensure that **both** jaws have engaged correctly.

7- The primary drive shaft must be connected to the **1000 revs/min** PTO of the tractor.

2.b. Secondary drive shaft.

1- Read the manufacturer's instructions concerning the drive shaft, attached to the transmission.

2- Check the safety conditions of the guard. If it shows any sign of damage, it must be replaced before the equipment is used.

3- The secondary drive shaft is located between the spreader's longitudinal main shaft and driving device of the EPAN 7. It is equipped with a declutchable cam limiter.

3). Hydraulics.

1- See page 16, hydraulic servicing and repairs.

2- Read sticker page 11 (ref: 892 640).

3- Spreaders are designed to operate with a maximum oil flow rate of **45 l/min** at a maximum pressure of **180 bars.**

4- All EPR spreaders are equipped with a hydraulic distributor with an integrated flow regulator for the moving floor speed

5- Distributors are equipped with a pressure limiting valve for the moving floor set at **180 bars.**

6- The distributor must be **linked directly** to the tractor's pump pressure via its **single-acting distributor**, with the **return always routed directly and unrestrictedly to the tractor's oil reservoir**.

7- Avoid connecting to a dual-acting tractor distributor.

8- The hydraulic pressure hose is always located close to the pressure limiter on the spreader's distributor; it has a **red** collar. The return hose has a **blue** collar.

9- The distributor is set at **180 bars** (main valve).

10- The hydraulic braking hose, ended by a PUSH-PULL half-valve should always be connected to the pressure outlet – tractor's braking.

11- **<u>Tractor with flow which exceeds 45 l/min</u>**:

Provide a flow divider to be installed on the spreader, before the "PRESSURE" orifice on the distributor unit, or contact your dealer to check whether it is possible to adjust the tractor's flow rate.

12- **<u>Closed circuit tractor</u>**: (Example: John DEERE)

a- To operate the equipment without the tractor having problems, activate the tractor distributor and <u>immediately</u> use the equipment's hydraulic functions.

b- <u>As soon as</u> the equipment's hydraulic functions have been used, <u>return the tractor's distributor to NEUTRAL.</u>

c- For earlier models of John Deere tractors (prior to the 6000 series), check that the tractor's hydraulic system is not vibrating and that the equipment's return hose is connected to the tractor's filter bowl; this is to avoid CAVITATION and pump unpriming (if you experience problems, contact your John Deere dealer).

4). Electricity.

1- See pages 15, 16 and 17 (section 6): Maintenance and repair.

2- **Read sticker page 11 (ref: 892 640).**

All types of equipment (direct control from tractor or distributor) require electrical power:
- Connection is made to the battery from a direct electrical line.
-Voltage: **12 volts** DC

- Two conductors: **2.5 mm²** the **brown** wire should be connected to **battery +** , and the **blue** wire to **battery -.**

3- Signalling:

The spreaders are equipped with rear signal lights, which comply with the French Highway Code with standard **7**-contact connectors, type **12** N Normal, **ISO standard 1724 N° NF 43.407,** which should be connected to the socket at the back of the tractor.

9. Adjustments and maintenance.

1). Greasing.

1- Whilst using the equipment, **grease every day.**

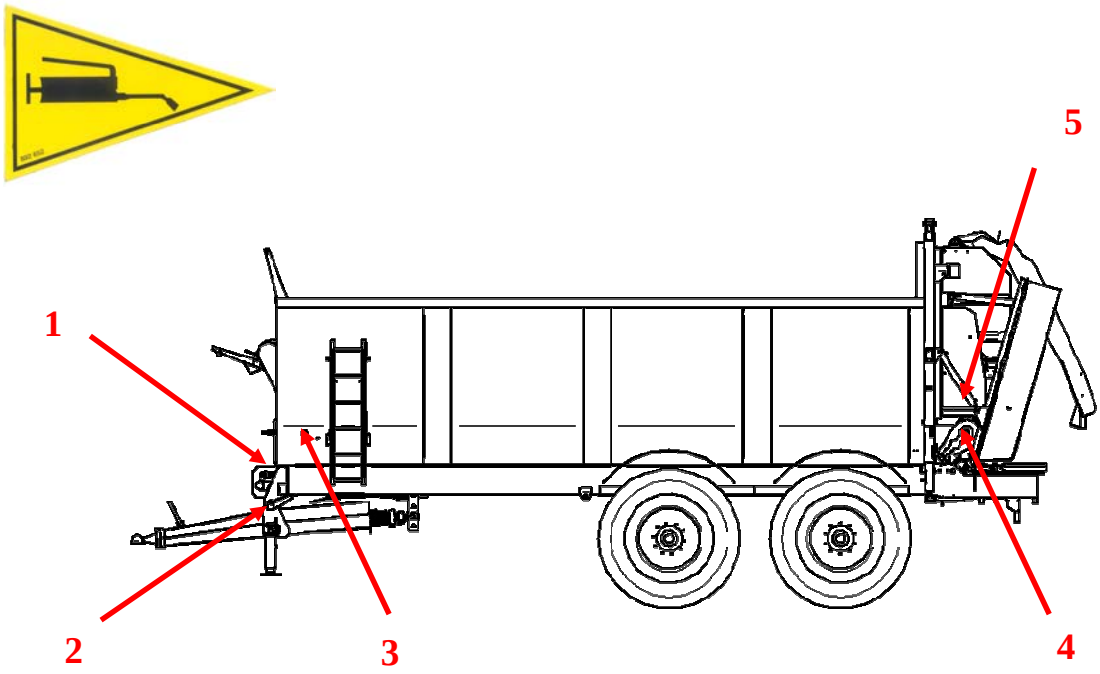
2- The various greasing points are arranged as follows:

- 1 greaser on the drawbar broaching pin (Reference 1).
- 1 greaser on the front bearing (Reference 2).
- 2 greasers on front pulley of moving floor (Reference 3).

- 2 greasers on rear shaft bearing of moving floor (Reference 4).
- Greasers located on both sides of the spreading system (Reference 5).

3- **Regularly oil** hinges and pins which are not fitted with greasers.

GREASING DIAGRAM:



2). Oil change.

The oil change of all gearboxes should be carried out **at least once a year**, depending on the frequency of use:

Quality of oil: **SAE 90** or equivalent.

Quantity of oil: See table below.

TYPES	Moving floor reduction gearbox – Rögelberg	Drive gearbox of discs - GB
23-16 23-18 27-18 27-20		

Wide spreading with 2 discs: oil change of 3 bevel gearboxes at least once a year.
Bevel gearbox Ref: **814 108**

Oil SAE 90 **1 litre per gearbox**

3). Various advice.

- Occasionally check the tightness of the 3 assembly bolts of the gearbox output shaft coupling sleeves. These bolts ensure the safety of the spreader's mechanical parts and the tractor PTO, by breaking off if the rotors or moving floor are jammed.
- After 10 hours of use check the wheel locking system.
- Check the tension of the spreading device's drive chain.
- The tension of the moving floor's chains should be moderate.

4). Chains.

1- Follow instructions on the stickers placed at the front of the spreader for moving floor chains (see page 11).

2- The **tension** of the chains should be **moderate**. CONTROL THE CHAIN ALIGNMENT.

3- During the running in period, the chains may stretch significantly, **tighten again if necessary**.

4- When the tensioners are at their maximum for adjusting chain, **cut two links** and tighten again.

5- Check the **tightness of attachment screws** on the moving floor connector bars, especially during the first hours of operation.

6- Check the **state of the drive sprockets** for the moving floor chains. As soon as they are damaged change them to avoid any risk of derailment.

5). Wheels.

1- Fixing: Check tightness of wheels regularly and after having used the equipment for **10 hours**.

2- Inflation: Follow the instructions on the stickers and regularly check pressure.

Check the pressure of the tyres when the equipment is delivered. The pressure should then be checked after every 10 hours of work. When checking the pressure, control the tyre's tread and wall. A damaged tyre should be immediately changed.

Warning! Changing or inflating a tyre can be dangerous!
Only use safe and adapted equipment or call in a professional.

Profile	Dimensions	Diameter (unloaded)	Tyre width (unloaded)	Load per wheel in kg (mini – maxi)	Inflation pressure in bars (40km/h) mini - maxi
	**600/55R 26,5 (Standard)**	**1,34 m**	**0,63 m**	**2495 - 7100**	**0,8 - 4**
	**680/55R 26.5 (Option for Tandem / Bogie / Tridem)**	**1,4 m**	**0,67m**	**2995 - 6900**	**0,8 – 3,2**
	**600/60 X 26.5 (Option for Tandem & Bogie)**	**1,5 m**	**0.60m**	**1570 - 3650**	**0,5 – 2,4**

3- Braking.

Regularly check:
The surface condition of cables
The tightness of the cable clamps
The cable tension
The thickness of the drum brake lining

6). Hydraulic hoses.

1- See page 15 (Section: Maintenance and repair).

2- Regularly check the state of the hydraulic hoses, especially sections in contact with the equipment.

3- Control that there are no leaks from the hydraulic connectors.

4- Retighten the hydraulic connectors if required after the first few hours of operation.

7). Speed of moving floor's hydraulic motor.

(Included in the hydraulic moving floor option)

1- The speed of the moving floor's hydraulic motor is electrically controlled. The **first electric button** marked **0 (- +)** located at the bottom of the electric control unit, enables to adjust the speed of the moving floor depending on the load in the body and in certain cases of certain difficult products: (ex: compact manure, etc.).

2- The flow regulator vernier scale graduated **0-1-2-3-4-5,** and located behind a transparent screen on the front housing, is used to control the adjustment.

8). Torque limiter.

8.a. On secondary transmission.

1- It protects the spreading device against overload, foreign matters and an excessive speed of the moving floor.

2- Located on the secondary transmission **(K64/22R).**

3- The jaw with freewheel is fitted on the main longitudinal shaft side, towards the front of the spreader.

4- The jaw with torque limiter is fitted on the spreading device side.

8.b. Adjustments (re-calibration).

1- **To be carried out once if the limiter disengages too often in normal operating conditions**, i.e.: normally loaded body and standard moving floor speed.

Place the secondary half-transmission on limiter side.

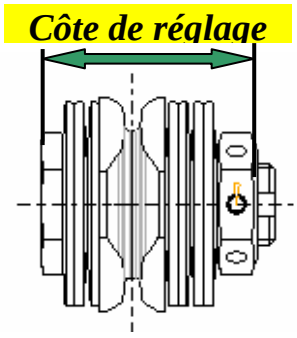
2- **Take the limiter apart** with the following tools:

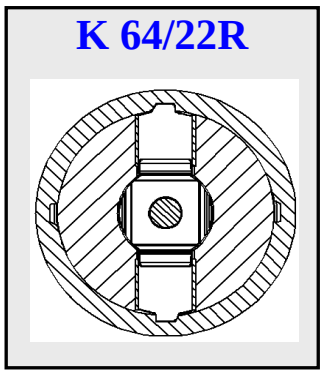
1. Flat screwdriver to remove the yellow plastic flange
2. Internal circlip pliers (∅ **150 width 4 mm**),
3. Flat spanner **32 mm**
4. Pin punch ∅ **4**
5. Caliper

3- **Remove** the spring pack with Belleville washer

4- **Measure dimension A**

5-





The first step is to determine the length of the spring pack (dimension A), and, after removing the elastic pin, to adjust the limiter according to the table below.

Limiter type	External diameter	Spring type	Number of springs	Adjustment value 1mm = 1 turn Corresponds to	Longuest adjustment dimension maxL (mm)	Shortest adjustment dimension minL (mm)
K 64/22	**170 mm**	**60x20,5 x 2,0**	**6**	**about 35,0 daNm**	**53,0**	**47,5**

NOTE

To avoid the limiter getting stuck, it is important to make sure, during the adjustment or readjustment, that the shortest adjustment dimension is not lower than the indicated dimension.

After adjustment, the elastic flange should be changed in the hexagon nut hole.

For greasing, only use special grease (Agraset 116 or 147).

A/ WITH HYDRAULIC TRACTOR PUMP

1- Whilst unloading, when the resisting torque reaches the sliding torque towards the centre of the hub which comes to a halt, they are driven back up by the two springs in the rotating casing, which causes the noise.

2- Disengage the tractor PTO and slow the tractor engine's speed right down**.**

3- **Invert** the moving floor's speed to maximum, preferably for **10 seconds**, to bring the heap of manure back towards the front.

4- When the heap of manure is cleared from the spreading device, **restart the tractor's PTO** and gradually accelerate its speed.

5- The limiter will then be activated again at about **200revs/min**. (PTO)**.**

B/ WITH HYDRAULIC POWER UNIT (OPTION)

1- When the limiter disengages, **keep the same rotating rate for the tractor's PTO (1000revs/min)**, and do not slow down in spite of the constant noise produced by the two beating cams. The limiter can remain disengaged for a certain time without risks for the cams or the carter's notches.

2- **Invert** the moving floor's speed to clear the heap of manure as explained above.

3- Reduce the speed of rotation of the tractor's PTO to about **200revs/min** to engage the limiter again.

4- Gradually **accelerate** the PTO's speed of rotation.

C/ FOREIGN MATTERS

1- When the limiter has difficulty engaging again, check that there are no foreign matters in front or inside the spreading parts.

2- If there are foreign matters, remove them before starting the spreader again.

3- **Be extremely careful** (see safety section).

9). Hydraulic safety valves.

1- All distributors are equipped with a hydraulic safety valve, set at **180 bars,** located at the pressure inlet of the distributor unit.

2- To check the valve calibration, connect a pressure gauge in parallel on the pressure line:

a- With hydraulic door:
- activate the dual-acting cylinders to limit,
- read the set pressure.

b- With moving floor or shredder hydraulic motor:
- block the return port of the forward running motor,
- activate the distributor component of the forward running moving floor,
- read the set pressure.

3- To calibrate or decalibrate, screw or unscrew the valve's adjusting screw, and control with pressure gauge.

10). Door safety valve.

1- Valve N° **825 246** fitted on the lower port (piston side) of one of the hydraulic door cylinders.

2- Safety for any maintenance or repair on or inside the spreader (see safety instructions).

3- Should be completely open when operating and completely closed for any maintenance or repair on or inside the spreader (see sticker page 13).

4- Check at least once a year the mechanical functioning of the valve by operating the lever **2 to 3 times** without using the hydraulic distributor functions.

11). Short period uses.

1- The equipment should be very thoroughly cleaned and placed in a clean and dry place.

2- Entirely grease the parts described in the manual's lubrication diagram.

3- Cover the equipment with a tarpaulin.

10. Start-up and operation.

1). Important information.

1- Our spreaders will give reliable and satisfactory service if used within their normal limits.

2- Never exceed the maximum load indicated on the manufacturer plate.

3- Before loading the spreader when it is used for the first time and every time it is used after a period of inactivity, operate the moving floor so that it goes round once.

4- In case of frost, check that the guillotine door is working (option).

2). Loading.

1- Place the equipment next to the heap.

2- Before leaving the tractor, engage the handbrake, stop the engine.

3- Get in the tractor equipped with the loader **to carry out the loading**. If this operation is carried out by another person, do not stand in the loading area.

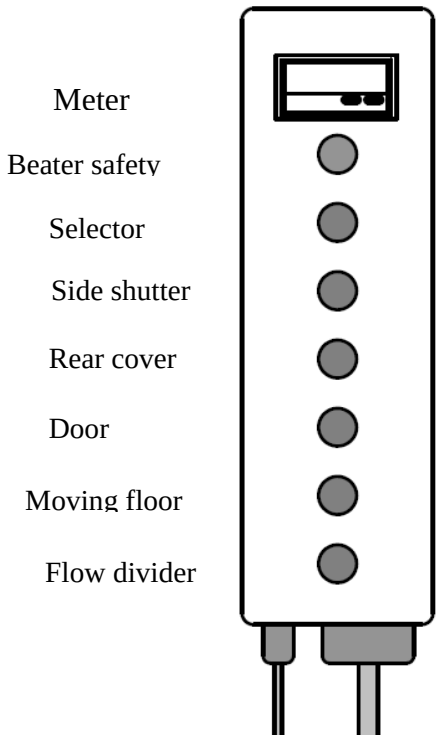
4- For a regular spreading, load the body uniformly.

3). Spreading.

- Activating the spreading system (shredding rotors + spreading table)
Start the PTO.

- Moving floor operation, adjustment of moving floor speed and other functionalities:

Use the electric unit located in the driving station and provided with the spreader, in order to start or stop the moving floor, adjust its speed, open or close the heavy slurry door or activate any other systems available on the spreader.
(Refer to the diagram of the electric unit below, in order to visually identify each available function)



- When the spreading is finished:
- Put the distributor in neutral, then disengage the tractor PTO.

- Do not take a bend or turn when the tractor PTO is on.

4). Quantity to spread per hectare.

When you know the quantity of manure K (in tonnes) that you want to spread per hectare, proceed as follows:

1 – Determine the weight of the manure P (in tonnes) loaded in the spreader.

2 – Define the distance L (in metres) to travel, to cover one hectare (according to the width of spreading A) example A = 2.20 m.

$$L = \frac{1 \text{ hectare}}{\text{Spreading width: A}} = \frac{10\,000 \text{ m}^2}{\text{A in metres}}$$

3 – Apply the formula below to work out the distance d (in metres) to cover to empty the load P.

Example:

P = 8 T (known)
L = 4545 M (determinated) (10 000 : 2,20)
K = 35 T/ha (imposed)

$$d = \frac{P \times L}{K} \qquad d = \frac{8 \times 4545}{35} = 1038 \text{ m}$$

According to the covered distance d, adjust the speed of the moving floor or the tractor to obtain the desired quantity per hectare K.

11. Additional equipment information.

1). Closed hydraulic circuit.

At the entry P (pressure) of the distributor, fit the **valve n°824274.**
With a closed circuit tractor, the valve should be closed when an element of the distributor is not activated, and should be open as soon as one of the elements is used.
Do not forget to close the valve when an element of the distributor is not used anymore.

2). Independent hydraulic power unit.

SAFETY
As the pump is driven by the rotating PTO, do not forget to put the control distributors for hydraulic parts in neutral such as the moving floor, heavy slurry door…etc.

FUNCTION
Avoids using the tractor's hydraulic circuit.

USE
- Activate the tractor's PTO.
- Regularly check the oil level which should be displayed on the reservoir indicator.
- Check the temperature of the oil which should not exceed 60° (thermometer of the reservoir indicator).

MAINTENANCE
Empty the reservoir once a year:

Mineral oil	**hydro 32 Unil**	Or equivalent
	49 litres	

Change the cartridge of the pressure filter and return filter once a year.

REVERSER GEARBOX N° 814114 R.1/1	OIL SAE 90 **2.22 Litres**

3). Spreader meter.

SAFETY
- Place the protection casing.

FUNCTION
Determining the total number of metres carried out by the moving floor and its speed.

USE
Turn the moving floor on, the meter is automatically activated. To display the total or speed mode, press twice on the grey button of the meter.

4). Rear door for thick slurry.

SAFETY

1- Carefully check that the door is not in contact with an electric line as there is a potential risk of electrocution.

2- The guillotine door is equipped with a hydraulic safety system, which stops the moving floor if the door is not open enough.

FUNCTION

It enables to halt and control the quantity of product to spread such as liquid and viscous products.

USE

The door can be adjusted in height with a hydraulic distributor, according to the nature of the product and the quantity to spread.

Do not use the door to regulate the unloading of products such as marl, limestone or other products which have the same characteristics.

Before activating the door, check that the maintenance safety valve n° **825 246** fitted on one of the door cylinders is **completely open**.

In case of frost check functioning before using the equipment.

5). Silage extension.

FUNCTION

The initial volume of the body is increased with a vertical extension of the boards.

6). Load transfer.

SAFETY

- Stand away from the axles during the manoeuvre.
- Check the coupling compatibility of the spreader with the tractor (see chapter "safety instructions").

FUNCTION

The machines equipped with a bogie can transfer all the weight on the rear axle and give better adherence to the tractor.
Whilst steering it avoids tyre scrub.

USE

- without load transfer:
The distributor is in rest position.
The adherence cylinder bases can freely slide in their sleeve to absorb the differences in level of the ground.

- with load transfer:
Acts on the distributor to send oil in the cylinders, in order to tip up the bogie, so that the weight of the rear axle is on the ground.

MAINTENANCE

- The hydraulic circuit of the load transfer is protected against overload with a pressure relief valve set at **120 bars**.
- Regularly grease the hinges of the cylinders and the trunnions of the sleeves which slide over the bases.

7). Hydraulic stand.

SAFETY

Never put your foot under the stand.

FUNCTION

It replaces on high tonnage machines, the angle transmission mechanical stand.
The user can with less effort adjust the height of the equipment when hitching it to the tractor.

USE

To send the oil in the stand-cylinder, operate the lever from top to bottom.
For return, slowly open the valve of the pump.

MAINTENANCE

Change oil at least once a year.

Hand pump: capacity	**4 litres**	
Mineral oil	**Hydro 32 Unil**	Or equivalent

12. Cleaning.

<u>Cleaning method</u>

1. **To avoid accidents, never clean the equipment when it is in operation. The equipment should be in rest position, unhitched from the tractor with the PTO and hydraulics disconnected.**

2. **When cleaning the equipment, if you need to turn the moving floor on in order to empty it, put the equipment back in work position and carry out this operation from the tractor's driving station after having checked that no one is in the projection area of the beaters and moving floor.**

3. **After carrying out this operation, continue cleaning the equipment.**

4. Raise the front of the spreader as high as possible to make the water drain away towards the back.

5. Raise the slurry door and lock it with the safety valve.

6. Unlock the access ladder to enter the body for an internal cleaning.

7. Cover all parts that need protection from water penetration or from cleaning products. Periodically wash the equipment with a water hose. If a high pressure water hose is used, do not hold it too close to the spreader; avoid directing the hose on electronic components, the engine or electric connections, hydraulic lines and hoses, seals, filler plug, etc.

8. Do not use detergent or acid products.

9. Wear sufficient protection to avoid projections and slipping: waterproof suit, gloves, non-slip boots and protective glasses.

10. Soak several times the parts covered in dry manure to make the cleaning easier and limit the pressure to 120 bars without standing to close to the equipment with the hose.

11. Clean with a strong water flow but a low pressure.

12. If the general cleaning instructions are not followed, we do not guarantee that the paint will hold.

13. Grease the equipment as soon as it is dry.

13. List of technical documents.

- 911001-1-A: Horizontal beater device

- 911002-1-A: Left side of device

- 911003-1-A: Lower beater

- 911004-1-A: Upper beater

- 911005-1-A: Chain tensioner

- 911006-1-A: Tensioning sprocket

- 911007-1-A: Spreading disc

- 911008-1-A: Spreading table

- 911009-1-A: Guillotine door

- 911010-1-A: EPR casings

- 911011-1-A: Moving floor

- 911012-1-A: Hydraulic diagram of the hydraulic power unit

- 911013-1-A: Hydraulic diagram of the side shutters

- 911014-1-A: Hydraulic diagram EPR 23-16 & 23-18

- 911015-1-A: Hydraulic diagram EPR 27-18 & 27-20

- 911016-1-A: Hydraulic diagram of tandem braking

14. Possible incidents and solutions.

INCIDENTS	CAUSES AND SOLUTIONS
1 – The safety bolts of the rotor's drive shaft keep breaking off	- Reduce the speed of the moving floor.
2 - Abnormal functioning of all hydraulic motors when starting equipment.	- Check hydraulic connection of spreader and tractor single-acting distributor. - Pressure on return.
3 - Lack of hydraulic power.	- Check pressure of 2 distributor units of the spreader and the tractor's distributor **(180 bar)**. - Too much pressure loss with dual-acting distributor. Connect to single-acting distributor. - Tractor pump failure (flow and pressure). - Pollution in tractor's hydraulic circuit.
4 - Damaged hydraulic motor seal.	- Back pressure on hydraulic return (see hydraulic connection)
5 - Brutal movements and/or hydraulic circuit overheat.	- Too important flow. - Reduce flow to 45 l/min.