

**GRÉGOIRE**  **BESSON**

# **DISCOMIX SPRC**

**Discs harrow independent design**

**« Duo » discs assembly - 2 parts vertical foldable**

**Semi-mounted - Carriage ahead roller**

## **OPERATOR'S MANUAL**

## **MAINTENANCE INSTRUCTIONS**

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# NOTES

# 1. INTRODUCTION



## **READ CAREFULLY THIS MANUAL**



To properly start, operate and service your equipment, follow all instructions given in this manual.

**THIS MANUAL SHOULD BE CONSIDERED AS A PART OF THE EQUIPMENT AND SHOULD FOLLOW IT WHEN YOU SELL IT.**

**LEFT HAND SIDE AND RIGHT HAND SIDE, FRONT AND REAR** are determined looking from equipment towards tractor when in work.

**ALL INFORMATIONS, PICTURE, SPECIFICATIONS** in this manual are based on the newer information available at the time of publication. Pictures and drawings might not represent standard equipment and show optional attachments.

Manufacturer reserves right to make any changes at all time **without any obligation to notice or to modify any delivered or already sold machine.**

**If the machine has been modified in any way from the original design without written agreement from Grégoire-Besson, the manufacturer does not accept any liability for injury or warranty. Warranty would become void.**



This symbol is used in the following manual to **catch your attention on warnings concerning your safety.**

So please when you see it in this manual or on the equipment, **strictly follow given information.**

Grégoire-Besson equipments are exclusively designed to be used by professionals for regular farm tillage in farmed fields. Manufacturer shall not be responsible for damage or injury resulting from any other use.

Grégoire-Besson machines are designed according to European Directive 2006/42/CE and have the CE logo. The certificate of conformity attests that machines comply with essentials health and safety requirements for users.

## **PRODUCT IDENTIFICATION**

Please record here purchasing date, model and serial number of your equipment (refer to identification plate on hitch). Always refer to these information to get prompt and good service. Fill and send back machine registration form for warranty.

Purchasing date : .....

Model : .....

Serial number : .....

Salesman's phone : .....

## 2. SAFETY INSTRUCTIONS

### 2.1. SAFETY STICKERS



Reference : UI 1980

#### READ OPERATOR'S MANUAL

Read operator's manual and safety instructions before starting the use of your equipment and follow them while using.



Reference : UI 1978

#### STAY IN A SAFE POSITION

Do not climb on the machine. Do not stand between machine and tractor.



Reference : UI 127

#### MOVE AWAY FROM THE MACHINE

Danger in the working area, stay clear from the machine.



Reference : UI 126

#### UNFOLDING AREA

Stay clear of equipment when folding or unfolding.



Reference : UI 131

#### SECURE THE MACHINE BEFORE ACTION

Always install all lockup devices to secure machine before any intervention on it.



Reference : UI 1979

#### MOVING PARTS

Always stay far away from parts in movement.



Reference : UI 128

#### HYDRAULIC LEAK AND MAINTENANCE

Caution, high pressure fluids can cause injury. Follow safe practices.



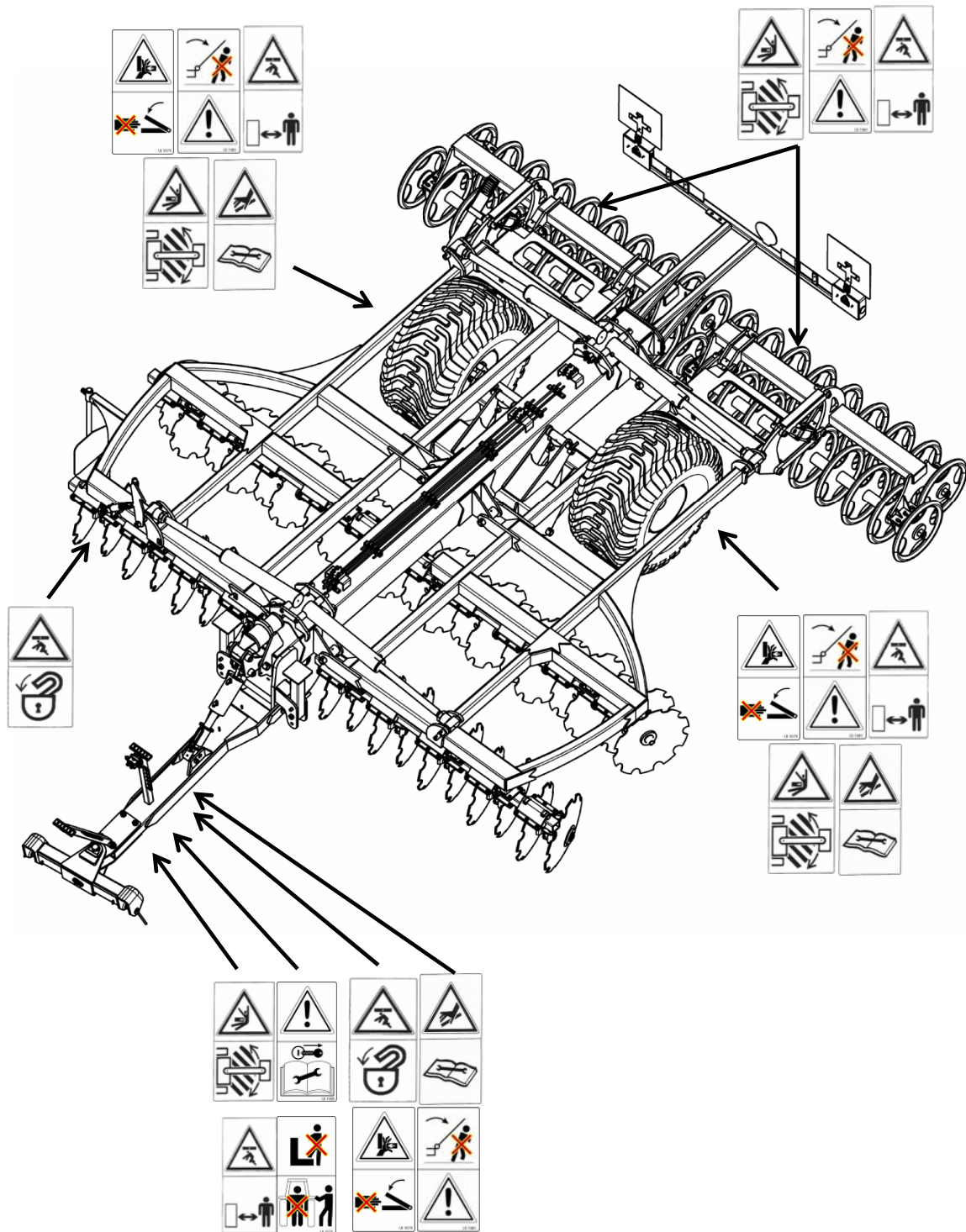
Reference : UI 1981

#### MACHINE UNFOLDING

Never stand under machine lateral sections. Always store machine unfolded.

### Positioning safety stickers on the machine

When cleaning the machine, do not damage stickers.  
Replace any damaged or missing sticker.



## 2.2. SAFETY WHILE ATTACHING AND DETACHING



- Do not let **anyone to stand between the machine and the tractor** when you back up to hitch.
- Before leaving the tractor to hitch or unhitch, set tractor parking brakes.
- Never attempt to attach the machine if pins, tractor hitching balls, tractor drawbar, or machine linkage are worn, cracked or not compatible.
- Completely lower the machine to the ground before unhitching. Make sure it is on a level and firm surface.
- Remove pressure from hydraulic lines before disconnecting them.
- Before leaving the machine for storage, make sure it is in a safe place and that there is no risk to damage whether anything or anyone.

## 2.3. SAFETY WHILE CONNECTING HYDRAULIC LINES



- Hydraulic circuit might be highly pressurised.
- **Never use your hands to locate a hydraulic leak.** Hydraulic fluids escaping under pressure have sufficient force to penetrate the skin, causing severe injury. In case of any injury, **see a doctor immediately.**
- For equipments loaded with several hydraulic connectors, **make logical and appropriated connections.**
- Before connecting hydraulic circuit, **make sure that there is no pressure on both sides (tractor and machine).**
- Regularly check hydraulic lines and connections. **Replace any damaged or leaking component** by an original part with the same specifications.
- Before any intervention on hydraulic circuit, **lower machine to the ground and release pressure moving control lever in the tractor's cab.**

## 2.4. SAFETY WHILE OPERATING MACHINE

- **Never attempt** any intervention on the machine while it is in motion.
- Do **not** allow anyone to **stand close to pivot points** : bottoms safety device (shearing bolt or non-stop), all pivoting linkage.
- Wear close **fitting clothing** and **appropriate safety devices** for the job you have to do (heavy leather gloves, safety shoes, earplugs, ... ).
- Do not allow anyone to stand close to the machine.
- Do not attempt to do any adjustment if you have not perfectly understood its procedure.
- Always use tools or equipments appropriate to the job you are doing. All Grégoire-Besson equipments are metric standards.
- Learn how to operate your machine and how to use its controls. Do not let anyone operate without instruction.
- Do not extend turnbuckle adjusters too much to avoid any threads damaging or intempesive pulling out.
- Only one person (the operator) should be in the tractor's cab when it is in operation. **No one on the machine while working or travelling on the road.**
- When earring or feeling unusual vibrations, stop the machine. Find the problem and solve it before starting operating again.



If your machine is equipped with a hydraulic folding mechanism, **always use it from tractor's cab**, once you are sure that folding area is free from spectators or obstacles.

## 2.5. SAFETY FOR MAINTENANCE



- Maintenance area shall be **clean, dry, with enough light and ventilation**.
- For any intervention on the machine in raised position, **always securely support all components** before starting maintenance.
- **Maintenance operations on elements under pressure or under tension** (resorts, accumulators, ...) require specific procedure and equipments. **Only qualified persons shall perform them in appropriate conditions**.
- After servicing remove all tools, components and parts you used.
- Regularly **check tightness of wheel studs, wearing parts bolts, and all other bolts and nuts**.
- **Always use genuine parts corresponding to manufacturer's technical specification requirements**.

## 2.6. SAFETY FOR ON HIGHWAY TRANSPORT

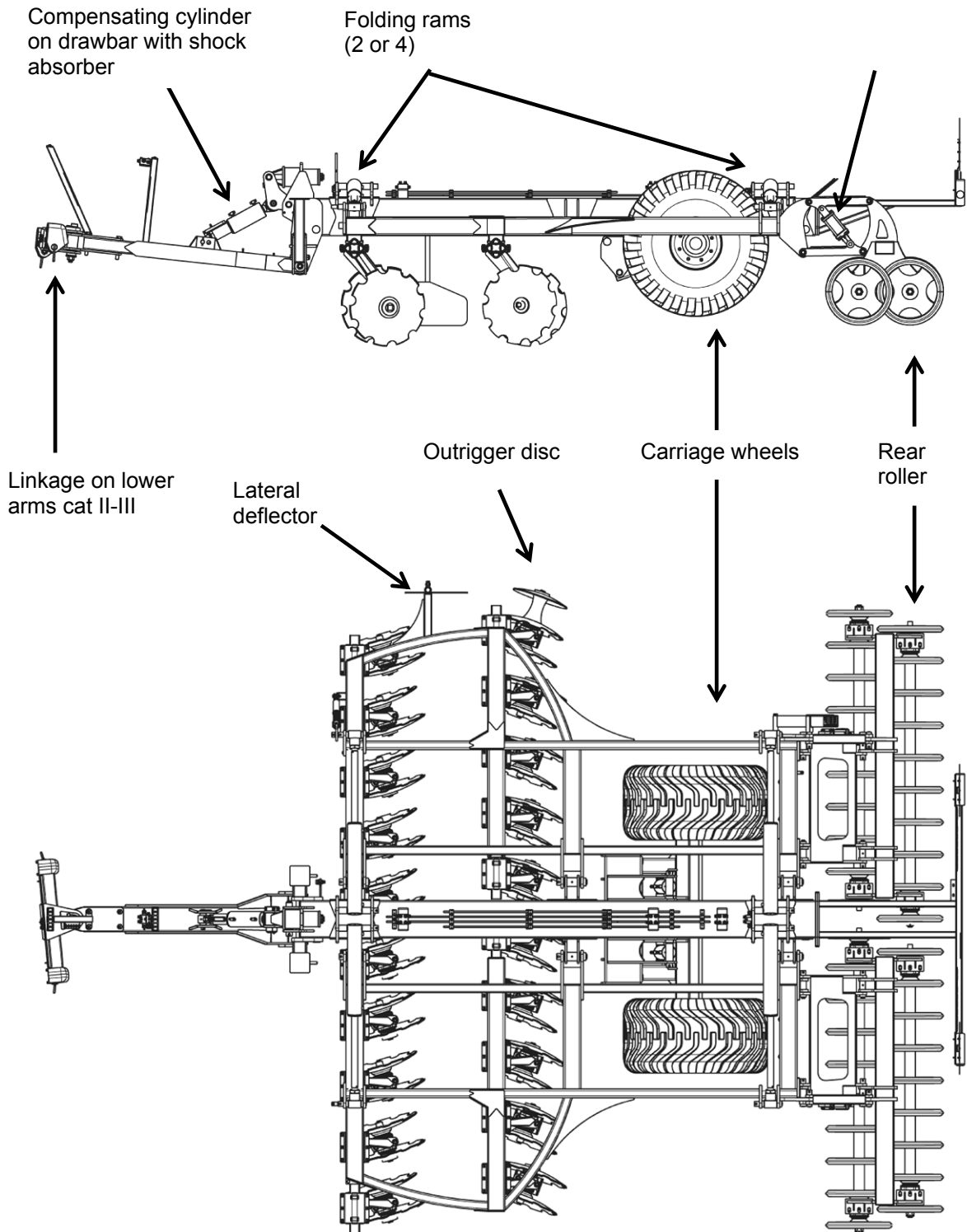


FOR YOUR OWN SAFETY AND THE ONE OF THE OTHER, RESPECT THE FOLLOWING RULES :

- All Grégoire-Besson equipments shall be used **complying with area's current rules and laws** concerning **safety instructions, accident prevention and provision of Highway Code**.
- Before road transport, always **check for wheels studs** and wheels mounting brackets carriage bolts **tightness** ; **check tyres general state and pressure** : do not drive with low pressure, cuts or damaged tyres or rims.
- **Use all devices required by your area's current laws** (lights, reflectors, signs, ... ). They might be removed during field operation to prevent from any damage. It is the operator's responsibility to comply with current law and to follow its evolutions.
- Regularly check hitching pins, change them if necessary. Tractor's ball joint may also wear, do not hesitate to replace them with new ones having at least Waltersheid fabrication quality.
- Drive **at reasonable speed** complying with local laws **to always keep control** of tractor and equipment. Pay special attention on irregular or rough roads. **Do not attempt to drive down a hill faster than it could be possible to drive it up**.
- Tractor used for road transport shall have the same power rating and weight as the one used for field operations.
- **Never attempt any manoeuvre if area is not free from spectators**.
- If your machine is equipped with a **folding mechanism** (manual or hydraulic), **use it making sure folding area is free from spectators** and obstacles.
- Follow all **safe driving practices** when travelling, moreover **on corners, rough or narrow roads**.
- When **leaving tractor** even for a short period, **shut off engine, remove ignition key and set parking brakes**.
- Forbid anyone to stand between tractor and machine or on the machine travelling on the road.

### 3. MACHINE DESCRIPTION

#### 3.1. IDENTIFICATION VIEWS



## 3.2. TECHNICAL SPECIFICATIONS

Specification	Standard equipments	Optional equipments
Hitch	<ul style="list-style-type: none"> <li>Pivoting hitch on lower link arms cat. II-III</li> </ul>	
Chassis	<ul style="list-style-type: none"> <li>Central chassis single tube 300x300x10 mm</li> <li>Lateral frames 140x140x10 mm</li> <li>Compensating cylinder on drawbar with rubber shock absorber</li> <li>Hydraulic vertical folding, 2 parts, 2.50 m transport width, locking device</li> <li>2 folding rams on 4 m model, 4 folding rams on 5 m and 6 m models</li> </ul>	
Discs gangs	<ul style="list-style-type: none"> <li>« DUO » assembly</li> <li>- discs mounted per pair on a square shaft 40 mm</li> <li>- shock absorber Roll'Choc on arm</li> <li>- bearing protection plate</li> <li>- Roll'Coup discs : Ø 630 mm, thickness 7 mm, flat profile, notched</li> <li>• On front gang : deflector device + anti-projection disc</li> <li>• On rear gang : outrigger disc</li> </ul>	<ul style="list-style-type: none"> <li>• Anti-projection tine harrow between the two discs gangs or between rear gang and roller</li> </ul>
Carriage	<ul style="list-style-type: none"> <li>• DA rams for carriage lift</li> <li>• Wheel axle square 80 mm</li> <li>• 2 wheels tyres 15R22.5 or 385/65R22.5 TZA</li> </ul>	<ul style="list-style-type: none"> <li>• Hydraulic brakes</li> <li>• Wheels tyre 500/45x22.5</li> <li>• Wheels tyre 550/45x22.5</li> <li>• Wheels tyre 600/50x22.5</li> </ul>
Roller	<ul style="list-style-type: none"> <li>• Crumbler roller Ø 500 mm, 9 square bars section 25 mm</li> <li>• Mechanical height adjustment by turnbuckles</li> </ul>	<ul style="list-style-type: none"> <li>• Crumbler roller Ø 600 mm, 10 square bars section 25mm</li> <li>• Twin roller</li> <li>• Twin / U roller</li> <li>• Double row U roller</li> <li>• Emopak roller</li> <li>• Hydraulic height adjustment by rams</li> </ul>

A large choice of options is available to improve machine's job. Grégoire-Besson authorized dealers know area and working conditions. They may give information according to technical choices and latest equipments evolutions. Grégoire-Besson is also represented on farm equipment shows.

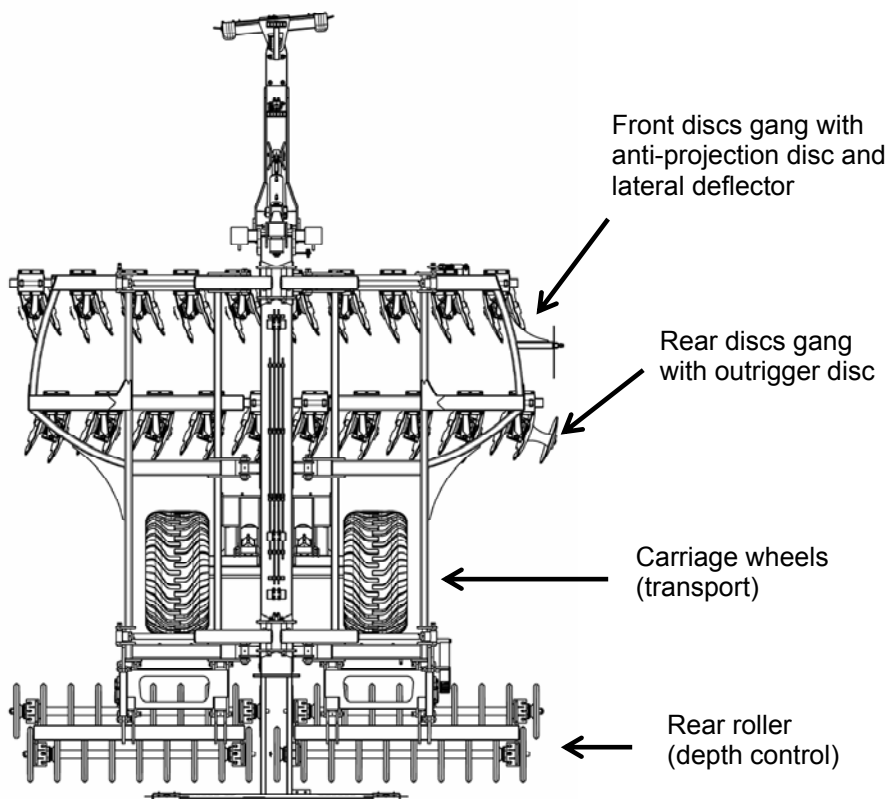
## 3.3. DIMENSIONS AND WEIGHT

Number of discs	Number of bearings	Working width	Transport width	Over all length	Transport height	Weight approx.
32	16	4.00 m	2.50 m	7.50 m	2.70 m	5 500 kg
40	20	5.00 m	2.50 m	7.50 m	3.20 m	6 400 kg
48	24	6.00 m	2.50 m	7.50 m	3.70 m	6 900 kg

Dimensions and weights are indicative and subject to variations according to equipments and options.

Note : after use, ground or residue accumulations may increase machine's weight.

### 3.4. DISCS HARROW DESIGNED WITH WHEELS BETWEEN DISCS GANGS AND REAR ROLLER

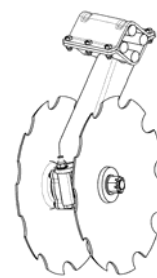


#### **3.4.1. Discs gangs assembly**

Machine is built with two lines of discs. Discs are « DUO » : assembled (refer to previous page). Their angle is fixed.

This configuration allows a perfect shallow tillage : full width working, soil refinement, straw size reduction. It leads to a homogeneous mixing on top soil.

Discs positioning is also designed to leave a levelled surface. Machine is equipped with both an anti-projection disc and a deflector device on front gang and an outrigger disc on rear gang. This ensures an even finish and a levelled surface between passes.



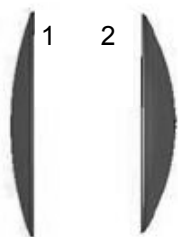
#### **3.4.2. Carriage wheels positioned between discs and roller**

Working depth is entirely controlled by rear roller. Carriage wheels are used only for manoeuvres or during road transport.

In working position, machine is held on the front by tractor and on the rear by roller. This configuration allows good weight transfer from machine to tractor. Machine is stable and working depth precisely controlled even with high operation speed.

In transport position, carriage wheels positioned between discs and roller makes machine compact, stable and easy to drive.

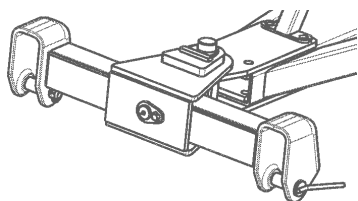
### 3.5. ROLL'COUP FLAT PROFILE DISCS



Roll'Coup flat profile discs (1) have less concavity than standard discs (2). They are easier to pull. They have a good penetration power. They have a very good cutting power (decreasing the size of residues). They are throwing less than standard discs.

They are standard discs on duo-discs assembly.

### 3.6. HITCH ON TRACTOR LOWER LINK ARMS



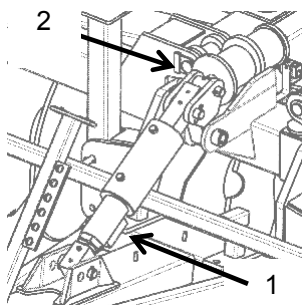
Hitch on tractor's lower link arms allows safe hitching and unhitching operations from the cab. It allows sharp turns, improving machine drivability.

Used with a drawbar compensating ram, it contributes to a good weight transfer from the machine to the rear of the tractor.

This hitch is dedicated to tractors equipped with locking devices (lateral and vertical).

For any transport on public road, follow hitch height recommendation (refer to operator's manual) and lock hitch position.

### 3.7. COMPENSATING RAM ON DRAWBAR

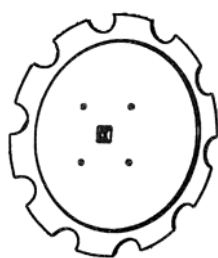


Screw type adjustable head of compensating ram (1) is used for front to rear levelling of the machine which shall always work parallel with the ground.

In working position, ram gives rigidity to the machine to tractor linkage. Machine is more stable, weight transfer is improved.

For more comfort (especially during transport) there is a rubber shock absorber (2).

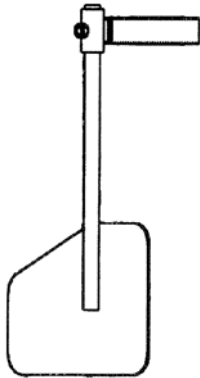
### 3.8. ANTI-PROJECTION DISCS



This device set on the external discs on front gangs reduces projections (less ground entering into the disc).

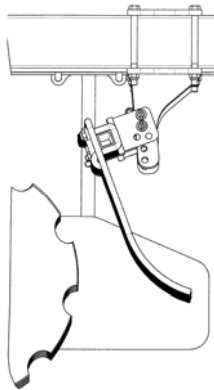
It prevents from ridging.

### 3.9. DEFLECTOR DEVICE



This device set on the R.H. side of front gang reduces projections. Outrigger disc of rear gang can take back all ground thrown by front gang and leave a levelled finish. It prevents from ridging, especially for high speed operation.

### 3.10. ANTI-PROJECTION TINE HARROW



As an option, an anti-projection tine harrow may be added between front and rear discs gangs. This option is available for new or already delivered machine.

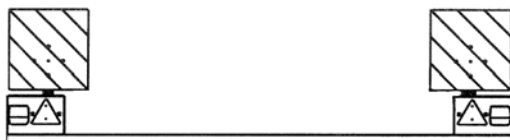
Using this tine harrow improves mixing and clods size reduction. It also reduces projections.

### 3.11. HYDRAULIC BRAKES

A hydraulic braking device is available as an option.

Note: it is the operator's responsibility to comply with local current applicable law before any transport on public road.

### 3.12. LIGHTS AND SIGNS KITS



Light and signs kits are available for all Grégoire-Besson equipments. Contact an authorized dealer.

Note: it is the operator's responsibility to comply with local current applicable law before any transport on public road.

# NOTES

## 4. PREPARING THE TRACTOR

Follow recommendations given in the safety section of this manual. They are not restrictive.

### 4.1. REQUIRED HORSE POWER

Tractor requirements may vary according to ground and working conditions (type of soil, type of tractor, type of tyres, ... ). Following data are only indicative. Ask an authorized Grégoire-Besson dealer for any further information.

Working width	Required horse power
4.00 m	120 – 150 HP
5.00 m	150 – 180 HP
6.00 m	180 – 210 HP

### 4.2. TRACTOR WHEELS

#### 4.2.1. Tractor tyres

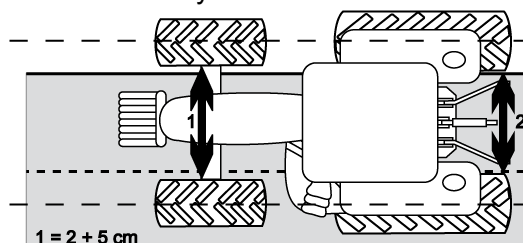
Check tractor tyres general state and pressure. Pressure should be the same on both sides of the tractor for a nice drivability in the field and on the road.



**IMPORTANT** : inflate tyres following manufacturer's recommendations.

#### 4.2.2. Distance between tractor tyres

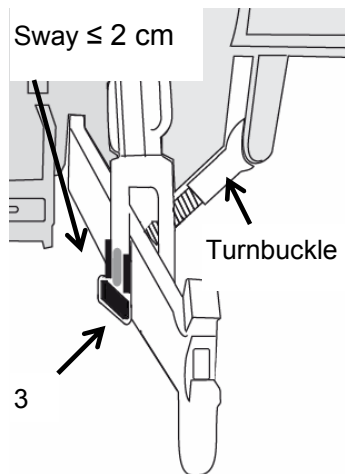
Generally, using a large tillage equipment, the wider is the distance between tyres, the better is the drivability.



To be able to steer the tractor, the middle of the front axle shall be lined up with the middle of the rear axle.

In sloping fields, a large distance will provide good stability.

### 4.3. POSITIONING STABILIZERS

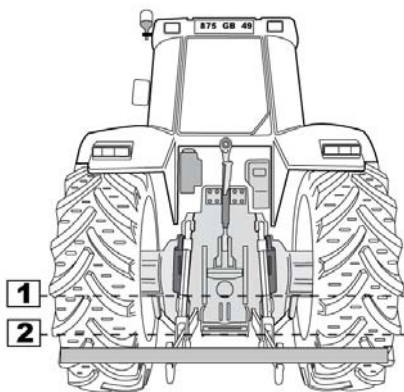


To hitch any tillage equipment on lower link arms, stabilizers shall be set so that arms have minimum lateral sway ( $\leq 2$  cm) and are centred with tractor traction line. This will both prevent from any risk of shock during operation or road transport and keep machine lined up behind tractor at work.

**Note** : it is easier to adjust and / or service stabilizers bolts and threads before hitching the machine.

Horizontal lift links pins (3) shall be in fixed position to avoid any loose and / or damageable shock.

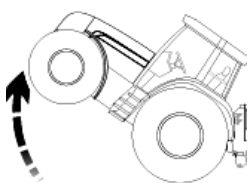
### 4.4. LIFT LINKS LENGTH



Lift link arms length determines tractor hitch levelling and lift cylinder position at working depth.

- Set lift links length so that tractor hitch is level (refer to picture).
- Set lift links length to have at least 30 mm clearance on lift cylinder rod when machine is working at desired depth. This will give adjustment possibilities for front gang depth from tractor's cab and allow efficient tractor draft control

### 4.5. FRONT END WEIGHTING



Wheels weights (front and rear) and front end weights may be required to avoid excessive slippage and to increase stability in rough and sloppy grounds.

Weights shall not be added once all slippage is eliminated. Refer to tractor operator's manual and to tractor's dealer. Follow tyre manufacturer's recommendations.

## 5. ATTACHING AND DETACHING

Follow recommendations given in the safety section of this manual. They are not restrictive.

**IMPORTANT** : always make sure that hitching never leads to :

- overload : respect maximum admissible hitch load,
- unbalance: load tractor front end if necessary. Refer to point 4.5.

### 5.1. ATTACHING MACHINE TO TRACTOR

Before any manoeuvre, check for diameter and length compatibility between hitch pins and tractor tie rods.

#### **5.1.1. Tractor equipped with tie rods lower links**

- Remove safety bolts and hitch pins.
- Back up tractor to line up tie rods and machine hitch holes.
- Install pins and secure them with their safety clips.
- If holes are difficult to line up : extend telescopic arms as indicated in tractor operator's manual. Once hitch pins are inserted and secured with their safety clips, slowly back up tractor to lock back lift arms. Check for lift arms locking.
- Raise parking stand in working position.

#### **5.1.2. Tractor equipped with automatic hooks lower links**

- Remove safety bolts and hitch pins.
- Remove balls from tractor lift link automatic hooks.
- Install balls on pins through lower machine hitching holes. Secure with safety bolts.
- Slowly back up tractor till automatic hooks are lined up underneath hitch balls.
- Raise tractor hitch about 5 cm above ground surface till automatic hooks are locked.
- Check for automatic hooks latch handles good locking.
- Raise parking stand in working position.



**IMPORTANT** : make sure to have enough clearance between machine yoke hitch and tractor lower lift links to avoid any possibility of contact from working to raised position. A second verification shall be done once machine is in the field in truth working conditions.

Connect hydraulic lines.

## 5.2. DETACHING THE MACHINE

Before detaching, make sure that ground is flat and firm enough to support the machine. Use safety blocks to support machine components and / or parking stand if necessary.



**DANGER** : do not let any part of your body underneath the machine when lowering it to the ground.

Crushing may lead to death.

Proceed in the logical attaching opposite way :

- 1) Put machine in working position = it shall stay on its discs
- 2) Put parking stands in detaching position = lower them
- 3) Completely lower the machine to the ground,
- 4) Remove pressure and disconnect hydraulic lines
- 5) Detach lower lift links.

# NOTES

## 6. HYDRAULIC CONNEXIONS

Follow recommendations given in the safety section of this manual. They are not restrictive.

### 6.1. REQUIRED HYDRAULIC REMOTES

- 1 DA for **central carriage lift + compensating cylinder on drawbar**.
- 1 DA for vertical hydraulic **folding**.
- 1 DA for hydraulic adjustment of **rear roller height** (optional).

### 6.2. REQUIRED HYDRAULIC PRESSURE

Required tractor hydraulic pressure is 180 to 200 bars.

### 6.3. HYDRAULIC CONNECTIONS

- Always wipe hydraulic couplers with a clean rag on both tractor and machine sides before connecting circuits.
  - Always check for machine hydraulic connectors and tractor remotes compatibility.
  - Logically connect hydraulic lines for the user :
- ⇒ Put most frequently used functions on closest lever
- ⇒ Watch for the way hydraulic flow is delivered : pull the lever to put machine in transport position (raise up / fold), push it to put machine in working position (lower / unfold).
- ⇒ Identify hoses using colour collars and signs (+ to extend rods, - to retract them).
- Check for hydraulic hoses length : too short they may break during sharp turns, too long they may interfere with tractor lift arms or tyres.

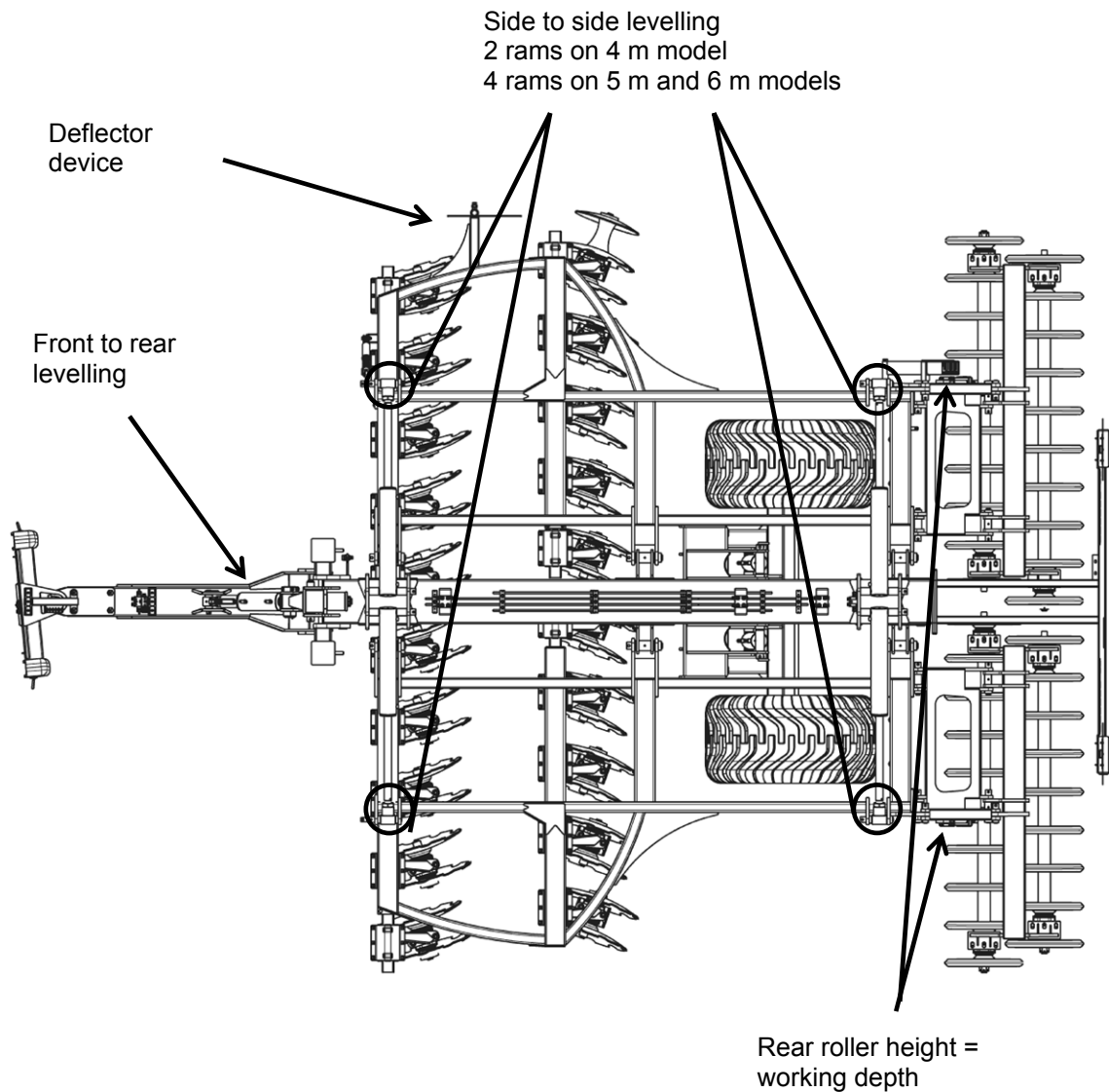
**In case of any problem, do not hesitate to contact an authorized Grégoire-Besson dealer.**

## 7. PREPARING THE MACHINE

Follow recommendations given in the safety section of this manual. They are not restrictive.

### 7.1. ADJUSTING POINTS LOCALIZATION

Find adjusting points and check their lubrication and work. Doing this checking task close from a machine shop is better than doing it in the field.



## 7.2. MACHINE WHEELS

### 7.2.1. Tyre inflation

Air pressure shall be checked every week.

Tyre dimension	Recommended pressure	Maximum speed
15 R 22.5 carcasse acier	6.0 bars	25 km/h - 15 mph
385 / 65 R 22.5 TZA	6.0 bars	25 km/h - 15 mph
500 - 45 x 22.5	2.7 bars	25 km/h - 15 mph
550 - 45 x 22.5	2.1 bars	25 km/h - 15 mph
600 - 45 x 22.5	2.0 bars	25 km/h - 15 mph

Follow tyre manufacturer recommendations (written on tyre side)



Tyre « above - inflation » = exploding risk.  
Tyre « below - inflation » = rim come off risk.

### 7.2.2. Wheel studs

Check wheels general state and studs tightness every day.

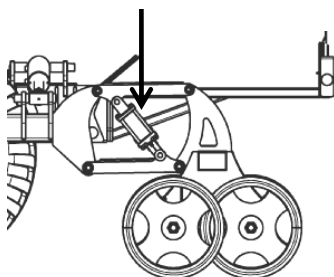
Tread types tires may need more checking than conventional tires (more vibrations).

Always check for studs tightness before driving on public road. Tight them if necessary.

## 7.3. ROLLER HEIGHT

Machine is equipped with a rear roller in 2 sections with vertical folding. It is used for depth control and machine stabilisation in the field.

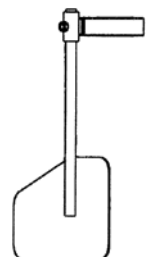
Roller height  
adjustment ram



- To **increase working depth**, raise roller shortening turnbuckles or rams (option).
- To **decrease working depth**, lower roller lengthening turnbuckles or rams (option).
- **Both turnbuckles or rams (options) shall have the same length for the machine to work the same depth on both sides.**
- Machine with optional rams for rear roller height : regularly purge rear roller height hydraulic circuit to make sure that both rams have the same length. Raise the machine, completely lower the roller extending rams and wait for a few seconds before removing control lever in the cab. Keep

purging to chase air away till both rams have the same length.

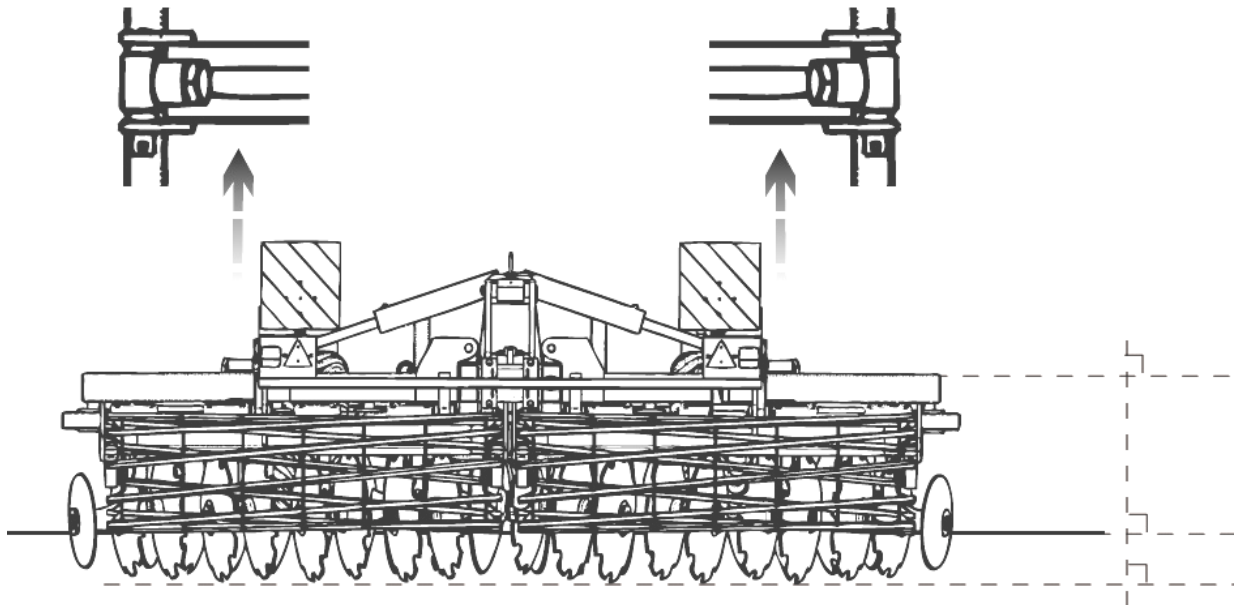
## 7.4. DEFLECTOR DEVICE



Lateral deflector device shall be set in order to avoid ridging :

- height adjustment : deflector plate shall be positioned in front of ground flow thrown by front R.H. side disc. Its bottom edge shall not touch the ground,
- orientation : in working conditions, deflector plate shall be parallel with traction line.

## 7.5. SIDE TO SIDE LEVELLING (= L.H SIDE TO R.H. SIDE)



Side to side levelling is done adjusting folding rams screw type heads. Once unfolded in working position, machine shall be levelled. This adjustment is done at the manufacture and shall be changed only exceptionally.

### Before any modification of standard manufacture's adjustment :

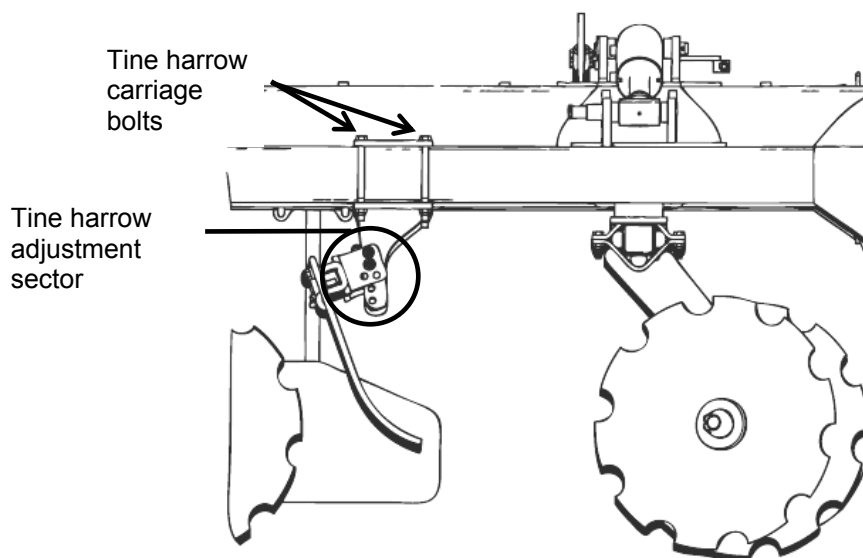
- Put the machine on a surface flat and firm enough to support its weight.
- Check tyres : they must be all the same, inflated the same, having the same general state.

### Side to side adjustment procedure :

- Unfold machine in working position. Raise it so that discs do not touch the ground.
- Check for machine levelling (getting a reasonable distance will help).
- If a lateral wing is too low, raise it shortening folding cylinder = screwing head on threaded rod.
- If a lateral wing is too high, lower it lengthening folding cylinder = unscrewing head on threaded rod.

Note : lowering the machine on its discs may help for this adjustment.

## 7.6. ANTI-PROJECTION TINE HARROW (= OPTION)



Machine may be equipped with an optional anti-projection tine harrow.

### **7.6.1. Height and pitch adjustment**

Pin positioning through adjustment sector allows tine harrow height and pitch adjustment (refer to here above drawing).

#### Adjustment procedure :

- On each adjustment sector, remove safety clips and pins.
- Change tine harrow position (height and pitch) :  
=> increase aggressiveness to increase mixing and refinement  
=> reduce aggressiveness in case of plugging up
- Install back all pins and safety clips,
- **All sectors shall be adjusted the same = same height and same pitch for all tine harrows sections.**

### **7.6.2. Front to rear position**

Anti-projection tine harrow may be adjusted front to rear.

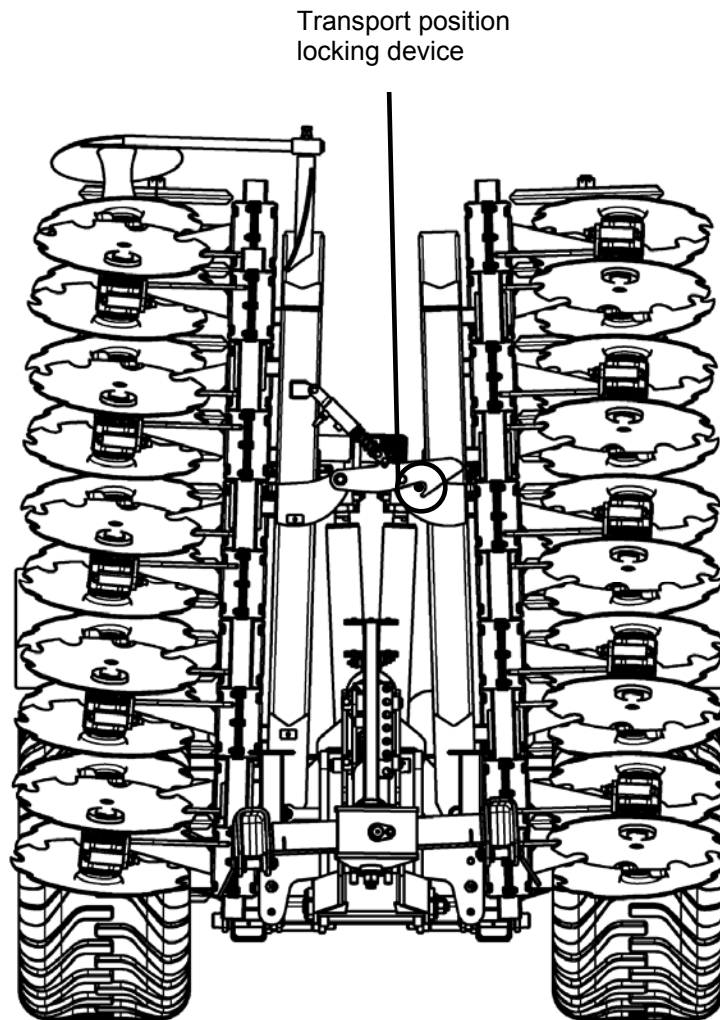
#### Adjustment procedure :

- On each support, loose all 4 carriage bolts (refer to here above drawing),
- Move tine harrow forward to bring it closer from ground - straw flow,
- Move tine harrow backward to take it away from ground - straw flow,
- Tight back all carriage bolts,
- **All sections shall have the same position regarding flow to reach an optimal and even finish.**

## 8. TRANSPORTING

Follow recommendations given in the safety section of this manual. They are not restrictive.

### 8.1. CHANGING TO TRANSPORT POSITION



Before driving on a public road with the machine, put it in transport position :

- **Raise machine to the maximum.**
- **Fold lateral wings and put lever control on float position.** Check for transport locking device proper positioning = hook shall come in its position once pressure falls down.
- **In the cab lock all control levers** (hydraulic remotes, hitch, ... ), to prevent any unforeseen movement and potential accident.
- **Install all lights, reflectors and signs required by current applicable law.**

Transporting machine hooked on tractor's lower link arms :

- Respect hitch height recommendation (refer to tractor operator's manual).
- Lock hitch position.

## 8.2. CHANGING TO WORKING POSITION

Follow here above described procedure in the opposite way.  
Remove lights and signalisation kits if necessary.

To unfold machine in working position :

- act on control lever to **completely fold machine** : when pressure increases, hook raises to release lateral frames
- then act on control lever to **lower lateral frames** in working position

## 8.3. DRIVING ON PUBLIC ROAD

Before driving on a public road :

- **Be sure all signs, reflectors and lights required by local current law are in place, clean and visible to traffic.**
- Make sure there are no interferences between tractor and machine.
- Adopt a gentle attitude towards other public road users.

On public road, comply with local applicable laws :

- Tractor required for road transport shall equal the size and the horse power rating of the tractor used to work in the field.
- Do not drive over 25 km/h (= 15 mph).
- Drive at a reasonable speed to maintain complete control of both tractor and machine.
- Reduce speed on corners and on rough grounds.
- Do not drive down a hill faster than it could be possible to drive it up.
- Do not apply the tractor brakes to attempt a sharp turn.
- Always check wheel studs tightness before driving on a public road. They may get loose because of vibrations.
- Respect authorized maximum size for transport load (width, weight, length). For over sized loads, comply with current law taking all necessary precautions (signs, lights, escort, authorizations, ... ).
- Respect the maximum wheel axle load and the maximum total driving load. Make sure front axle carries at least 20% of tractor's tare. Use front end weights if necessary.

**ATTENTION** : driving on public roads, operator is responsible for both tractor and equipment. He has to comply with current applicable law (getting in conformity with it and following its evolutions).

## 9. FIELD ADJSUTMENT

Follow recommendations given in the safety section of this manual. They are not restrictive.

### 9.1. FIELD UTILIZATION

Put machine in working position (refer to previous section).

Discomix is a discs harrow designed for shallow stubble cultivation or seed bed preparation.

To reach the best result :

- use machine with a slight angle regarding previous crop seeding line (15° to 30°)
- operating speed shall be between 10 and 15 km / h (= 6 to 9 mph).
- working depth range : 3 cm to 8 cm.

This will allow :

- to prevent form any excessive track compaction,
- to improve trash flow, mixing and repartition of crop residue,
- to leave a levelled finish.

Always lift up machine before manoeuvring on headlands.

Never attempt a sharp turn with the machine in working position.

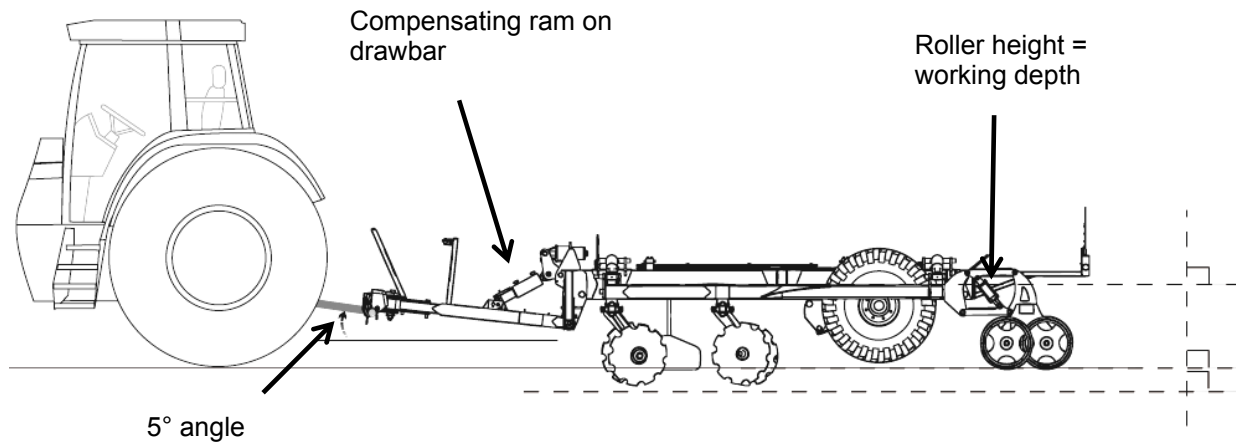
Slow down before manoeuvring or crossing any obstacle (ditch, ridge, rocky spot, ... ).

**IMPORTANT** : before beginning field utilization, entirely read this chapter to understand all adjustments, their order and procedure.

**IMPORTANT** : always do one adjustment at a time. Then it is easier to check its performance and to change it if necessary.

## 9.2. ADJUSTING THE MACHINE

### 9.2.1. Depth control and front to rear levelling



Working depth is controlled with the followings :

- rear roller height : turnbuckles or hydraulic rams (option),
- compensating ram on drawbar : adjustable screw type head.

At work, wheels shall be totally raised up. Roller supports the rear part of the machine, tractor the front part.

In working position, make sure that :

- main frame is parallel to the ground
- drawbar have a light up angle (5°). Refer to drawing.

### 9.2.2. If ground is not levelled

If machine leaves a mark between two passes

Front discs gang throws ground too far for outrigger disc to bring it back.

Possible solutions for this problem :

- reduce operating speed
- adjust lateral deflector.

## 10. MAINTENANCE

Follow recommendations given in the safety section of this manual. They are not restrictive.

### 10.1. GENERAL INSTRUCTIONS



**Operator and owner are responsible for good machine maintenance.**



Inspect machine before and after each use. Repairs and service have to be done immediately so that they are not forgotten. Always leave the machine in a good state.

Cleaning the machine facilitates inspection. Check general state of machine, weldings, wheels studs, tyres, ...

Be careful with hydraulic lines : frictions may lead to excessive wearing and lines may leak. Never search a leak with your hands. Immediately replace any defective component. Spare components shall have the same characteristics.

Parts working in the ground may be sharpened and cause severe injury. Take particular care and use heavy leather gloves to remove them.

Never attempt any intervention on the machine while tractor engine is running.

Always properly secure all components before starting any maintenance operation underneath the machine.

Before using the machine for the first time, check all bolts tightness. Verify after 50 working hours and then at the beginning of each season. Pay special daily attention on :

- wheel studs tightness
- wearing parts bolts and nuts tightness in rocky or dry conditions (lots of vibrations).

Wrong waste management is a danger for environment : collect waste oil, paint removers, accumulators, worn tyres ... Bring them back to a distributor or to an authorized collector. Do not let them in the nature.

### 10.2. LUBRICATION

A good lubrication of all moving parts will both allow the machine to work fine and insure its long-lasting.

Grease fittings are installed on all pivot points. Grease both lubricates moving parts and chases away abrasive dust or water that could come into pivot points.

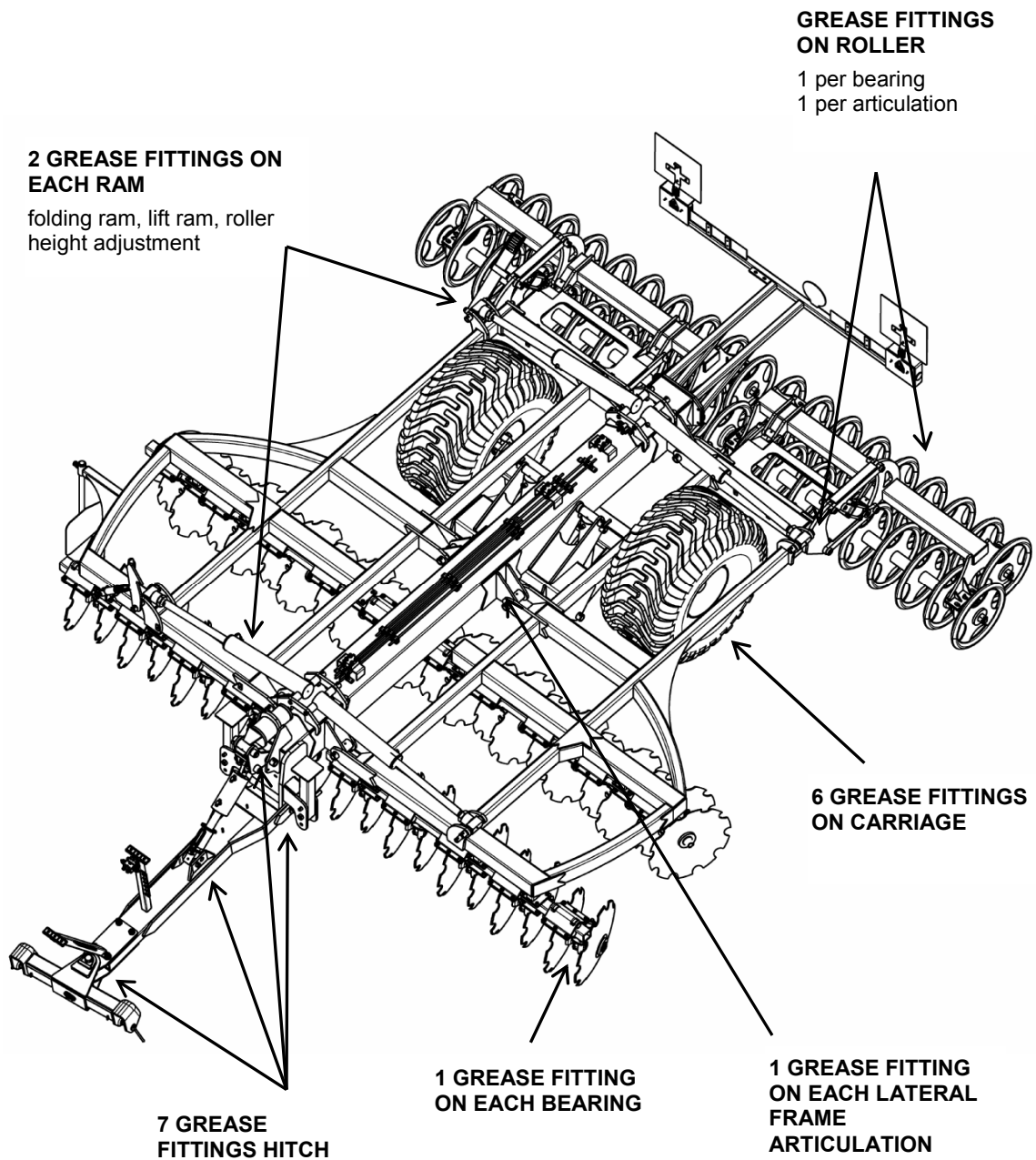
Use quality grease, type Unil – Opal MS02 or equivalent.

Always wipe grease fittings with a clean rag before introducing grease. Do not hesitate to change any worn or broken grease fitting. Check for good grease course.

Remove all grease accumulation around grease fittings or moving parts.

Refer to grease fittings placement and frequency on the following drawing. Hard or intense conditions would require more.

**The best is to grease regularly with regular quantity. Do not over grease.**



Grease fitting placement	Frequency
Lateral wing pivot point	50 h
Folding cylinder (1 grease fitting on each end)	10 h
Compensating drawbar cylinder and lift cylinder	10 h
Discs gangs bearings (4 shots)	50 h
Carriage articulations and hitch articulations	10 h
Rear roller bearings (4 shots)	50 h

### 10.3. SPARE PARTS

Genuine Grégoire-Besson parts have been specially designed and developed. Only the use of these parts will ensure proper fit, longevity and field quality work of the machine.



Using any other spare part than certified from Grégoire-Besson will void warranty.

Changing wearing parts too late may be source of poor quality work (penetration troubles, poor mixing ...) and may damage structure parts°.

### 10.4. STORAGE SAFETY

- Before detaching the machine for storage, make sure ground is clean, flat and firm enough.
- Use parking stand and all other locking devices to prevent from any unforeseen movement during detachment or later on.
- Always store machine in working position (= unfolded).
- Block machine wheels to avoid any unforeseen movement.
- During storage, wheels shall not carry any weight.
- NEVER detach machine in raised position.
- Remove pressure from hydraulic circuit (engine shut off, shake hydraulic control lever in the cab).
- Store machine away from human activity.
- Store machine in a dry and dust free area (shed). Protect ram rods that cannot be retracted from rust using grease or oil.

**CAUTION** : never let children play around farm equipment.

## 11. QUICKLY STARTING - DISCOMIX SPRC

Take all precautionary measures. Respect safety recommendations.

### PREPARING THE TRACTOR

**1. Check tyre pressure**

It should be the same on both sides on each axle.  
Always follow tyre manufacturer recommendations.

**2. Adjust tractor hitch levelling**

Set lift links length for tractor hitch to be perfectly level with the ground.  
Arms shall be long enough so that working at desired depth there is still 30 mm chrome visible on lift ram.

**3. Adjust lift links sway**

Lateral sway minimum ( $\leq 2$  cm)  
No vertical sway (0 cm)

### HITCHING

**4. Attach lower links**

**5. Make sure there are no interferences between machine and tractor from raised position to working position**

Machine shall never come in contact with tractor.  
There should be no contact between tractor lift links and machine yoke hitch.

**6. Connect hydraulic lines**

**7. Transport / working positions**

Transport position	lateral wings folded, transport safety locking device positioned rear carriage lowered = machine raised
Working position	lateral wings unfolded rear carriage raised = machine lowered

### FIELD ADJUSTMENT

**8. Set working depth using**

Roller height adjustment  
Compensating cylinder on drawbar adjustment

**9. At work machine shall run parallel with the ground**

### MAINTENANCE

**10. Follow recommendations given in this manual according to lubrication and maintenance of the machine**

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