



Class'XRL

**Discs harrow « X » design - Semi mounted
Lateral folding - Wheels in the center**

OPERATOR'S MANUAL MAINTENANCE INSTRUCTIONS



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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.

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.

Purchasing date :

Model :

Serial number :

Salesman's phone :

2. SAFETY INSTRUCTIONS

2.1. SAFETY STICKERS



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 129



UNFOLDING AREA

Stay clear of equipment when folding or unfolding.

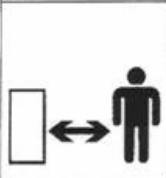
Reference : UI 126



MOVE AWAY FROM THE MACHINE

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

Reference : UI 127



SECURE THE MACHINE BEFORE ACTION

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

Reference : UI 131



HYDRAULIC LEAK AND MAINTENANCE

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

Reference : UI 128



2.2. SAFETY WHILE ATTACHING AND DETACHING



- Do not let **anyone to stand between the machine and the tractor** during hitching or detaching manoeuvres.
- 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 intempestive 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



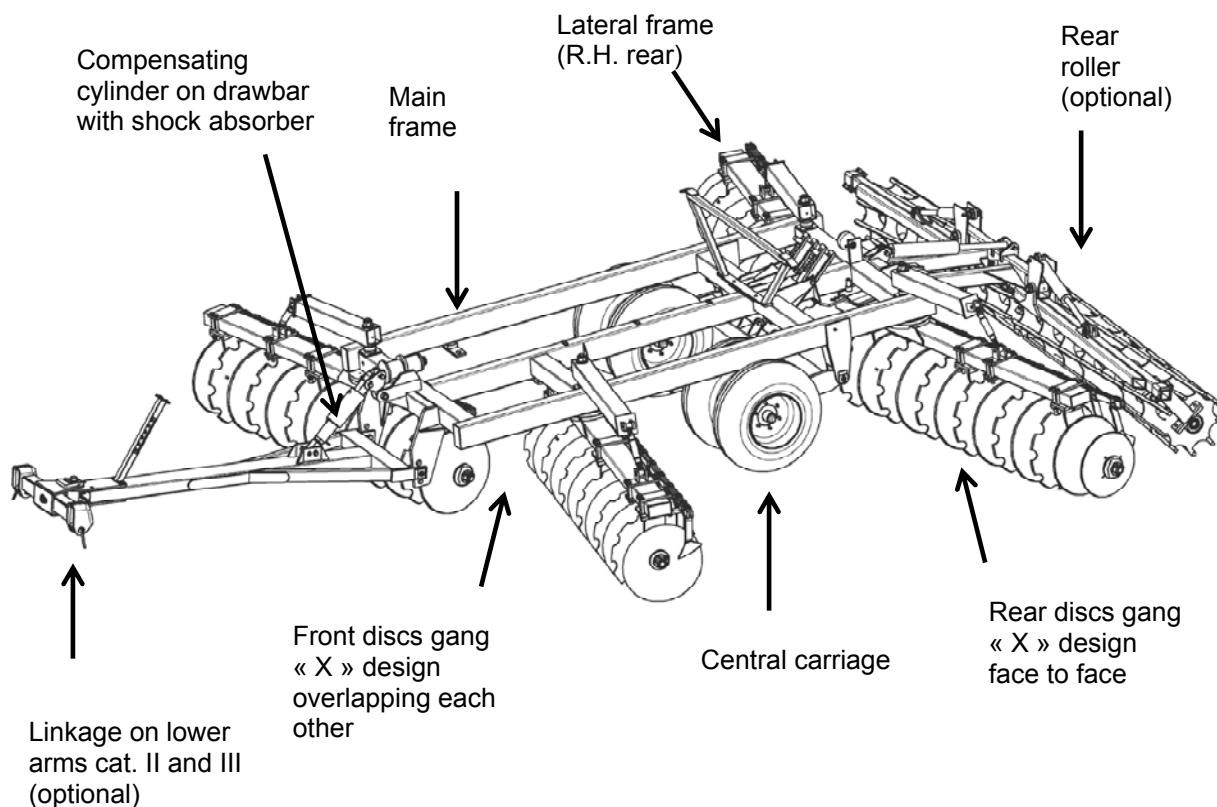
FOR YOUR OWN SAFETY AND THE ONE OF THE OTHER, RESPECT THE FOLLOWING RULES :

- 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.

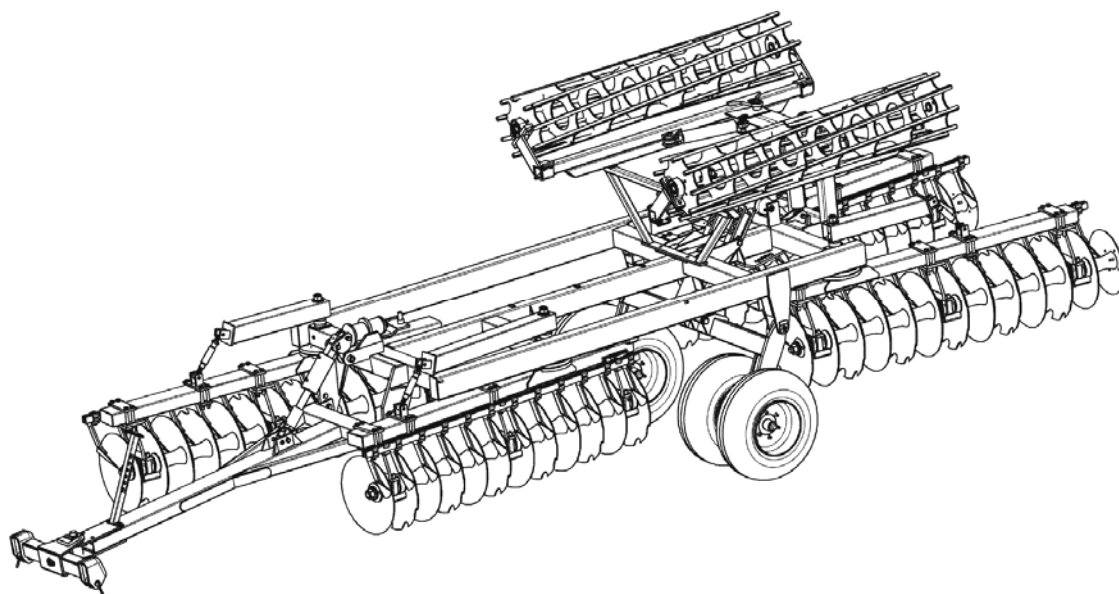
3. MACHINE DESCRIPTION

3.1. IDENTIFICATION VIEWS

Working position



Transport position



3.2. TECHNICAL SPECIFICATIONS

Specification	Standard equipment	Optional equipment
Hitch	<ul style="list-style-type: none"> Fixed hitch 	<ul style="list-style-type: none"> Turning ring Pivoting hitch on lower link arms cat. II-III
Chassis	<ul style="list-style-type: none"> Main frame 180x100x8 mm Lateral frame 180x100x8 mm Discs gangs angling and lateral folding to 2.50 m for transport manual with mechanical stop-unit Compensating cylinder on drawbar with rubber shock absorber Turnbuckle to hold lateral frame in horizontal position starting from 40 discs 	<ul style="list-style-type: none"> Discs gangs angling and lateral folding to 2.50 m for transport hydraulic
Discs gangs	<ul style="list-style-type: none"> Front discs gangs overlapping each other Rear discs gangs face to face Square shaft 40 mm Cast iron housing with 2 conical bearings and triple seal protection Discs assembly Ø 660, thick. 6, sp. 230 mm notched front and plain rear or alternated Anti-projection discs on front gangs Outrigger discs on rear gangs 	<ul style="list-style-type: none"> Discs assembly full notched Roll'Coup flat profile discs Ø 680, thick. 7 mm Deflector on front discs gangs
Central carriage	<ul style="list-style-type: none"> 2 DA lift rams with mechanical stoppers Spindle square 60 mm 2 wheels 10.0/75x15.3 10 plys up to 32 discs 4 wheels 10.0/75x15.3 10 plys from 36 discs 	<ul style="list-style-type: none"> Hydraulic brakes Wheels 11.5/80x15.3 14 plys Wheels 400/60/15.5 14 plys
Roller		<ul style="list-style-type: none"> Rear roller with lateral folding Ø 500 mm, 9 square bars (not available on 52 discs model)

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.

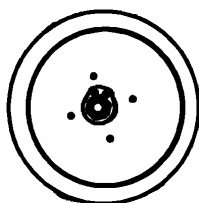
3.3. DIMENSIONS AND WEIGHTS

Front gang spacing	Number of discs	Number of bearings	Working width	Transport width	Over all length	Approx. weight
230 mm	24	8	2.50 m	2.50 m	7.60 m	2 970 kg
	28	8	3.10 m	2.50 m	7.85 m	3 140 kg
	32	8	3.45 m	2.50 m	8.10 m	3 310 kg
	36	8	3.90 m	2.50 m	8.35 m	3 620 kg
	40	8	4.40 m	2.50 m	8.60 m	3 790 kg
	44	12	4.80 m	2.50 m	8.85 m	4 070 kg
	48	12	5.30 m	2.50 m	9.10 m	4 240 kg
	52	12	5.80 m	2.50 m	9.40 m	4 410 kg

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

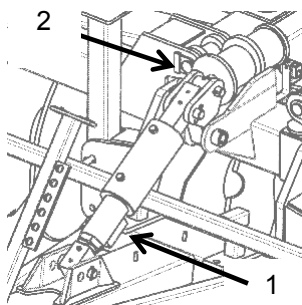
Note : after use, ground or residue accumulations may increase machine's weight.

3.4. 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.

3.5. COMPENSATING RAM ON DRAWBAR

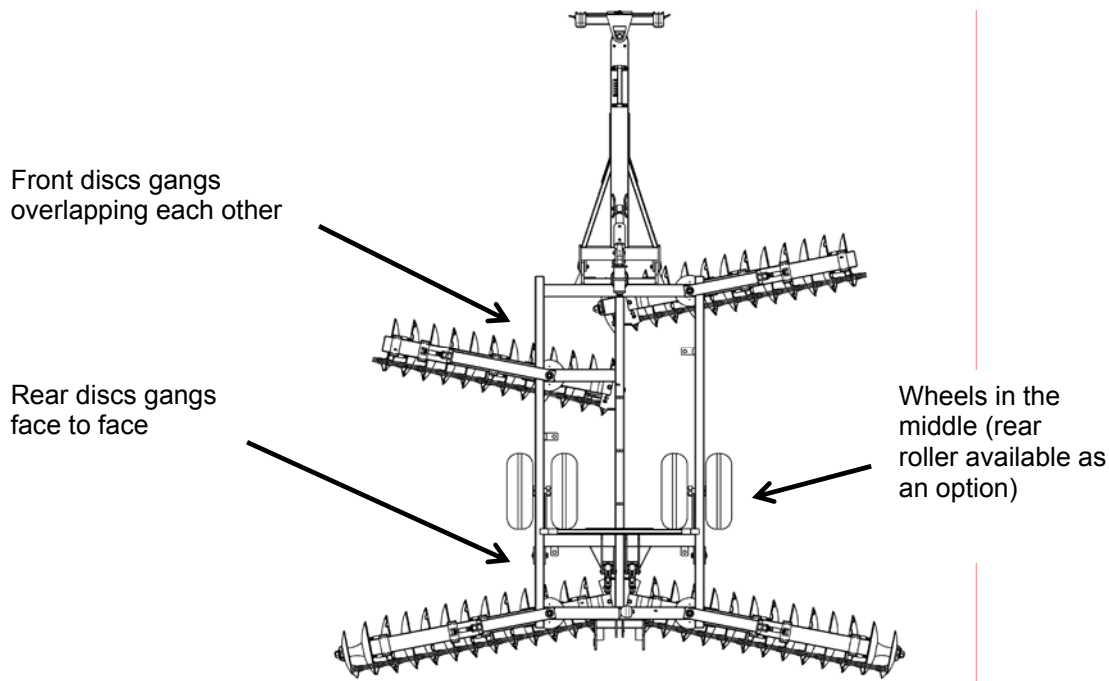


Screw type adjustable head of compensating ram (1) is used for front to rear levelling of the machine which shall always work parallel with the ground.

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).

3.6. DISCS HARROW « X » DESIGN WITH WHEELS IN THE MIDDLE



3.6.1. Front discs gangs

At the front, two discs gangs overlapping each other with adjustable angle. It gives penetration power to the machine and so adaptability to work in all conditions. The overlapping design allows complete width disking without unworked central strip.

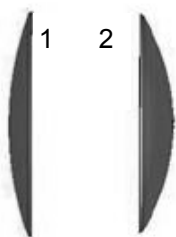
3.6.2. Rear discs gangs

At the rear, two discs gangs face to face with adjustable angle. They ensure finishing and levelling.

3.6.3. Wheels in the middle and rear roller (option)

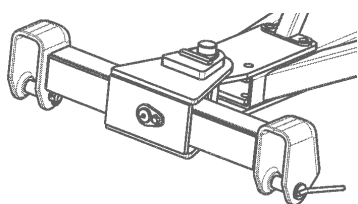
With this configuration, machine is simple, stable, compact and easy to drive. Working depth is controlled by central carriage. Packing by its own weight, rear roller improves finishing and levelling.

3.7. 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.

3.8. HITCH ON TRACTOR'S LOWER LINK ARMS



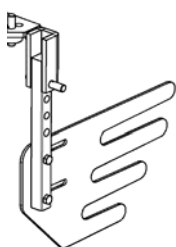
Hitch on tractor's lower link arms allows safe operations (hitching and unhitching) from the cab. It allows sharp turns, improving machine drivability.

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.

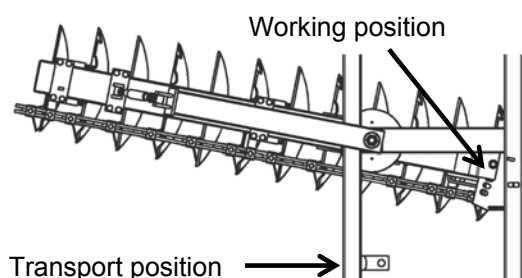
3.9. DEFLECTOR DEVICE



This device set on the external sides of front gangs reduces projections. Outrigger discs of rear gangs 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. DISCS GANGS ANGLE



Discs gangs angle (transport position or angle in working position) is set through mechanical stop unit with lock pin.

As an option, it can be hydraulically controlled.

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.

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.

Number of discs	Working width	HP required
24	2.50 m	70 cv
28	3.10 m	85 cv
32	3.45 m	95 cv
36	3.90 m	105 cv
40	4.40 m	115 cv
44	4.80 m	125 cv
48	5.30 m	135 cv
52	5.80 m	150 cv

4.2. TRACTOR WHEELS

4.2.1. Tractor tyres

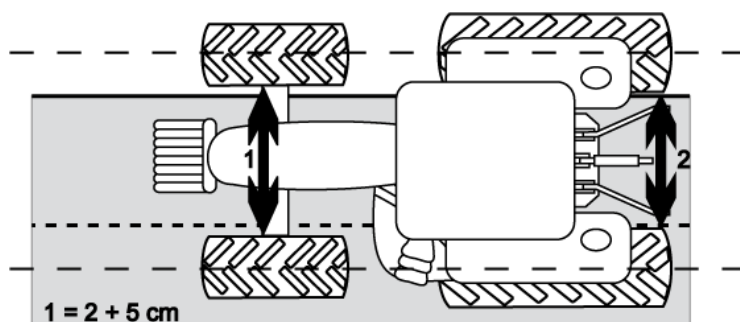
Check tractor tyres general state and pressure. Pressure should be the same on both sides of the tractor for a nice drivability in the field and on the road.



IMPORTANT : inflate tyres following manufacturer's recommendations.

4.2.2. Distance between tractor tyres

Generally, using 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. DRAWBAR POSITION

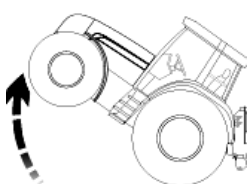
Drawbar has to be set in central and rear position (to improve clearance and manoeuvrability). Install locking devices.

Drawbar height shall not be changed. It has been designed to achieve tractor's best performances.

If tractor is equipped with rear 3-points hitch, set lift links arms in high position and lock control lever in tractor's cab. This will prevent from any interference between tractor arms and machine tongue in sharp turns.

Retain lift links arms so they do not swing against tractor tires or hoses.

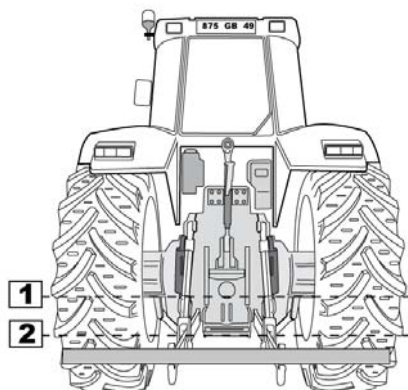
4.4. FRONT END WEIGHTING



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.

4.5. 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

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 hitch capacity
- unbalance: load tractor front end if necessary. Refer to point 4.4.

5.1. ATTACHING MACHINE TO TRACTOR

5.1.1. Hitching to fixed ring or turning ring

- Before any manoeuvre, check for diameter and length compatibility between hitch ring, tractor drawbar and hitch pin.
- Back up tractor close to machine hitch ring.
- Make sure hydraulic connectors are clean and plug lift circuit (refer to section 6).
- Change machine tongue angle if necessary.
- Back up tractor to hitch the machine.
- Install hitch pin and secure it with its safety clip.

5.1.2. Hitching on lower link arms

- Before any manoeuvre, check for diameter and length compatibility between hitch pins and tractor tie rods.
- Back up tractor close to machine hitch.
- Make sure hydraulic connectors are clean and plug lift circuit (refer to section 6).
- Change machine tongue angle if necessary.
- Back up tractor to hitch the machine.

Connect hydraulic hoses and control box.

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) Install blocks underneath the tongue to hold it at desired height
- 2) Completely lower the machine to the ground, it shall stay on its discs
- 3) Remove pressure, disconnect hydraulic lines and control box (which can be totally removed from the machine if stored outside)
- 4) Remove hitch pin (or detach lower link arms)

Always operate with care.

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 hydraulic adjustment of **rear roller** (optional)
- 1 DA for hydraulic adjustment of **discs gangs angle** (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.

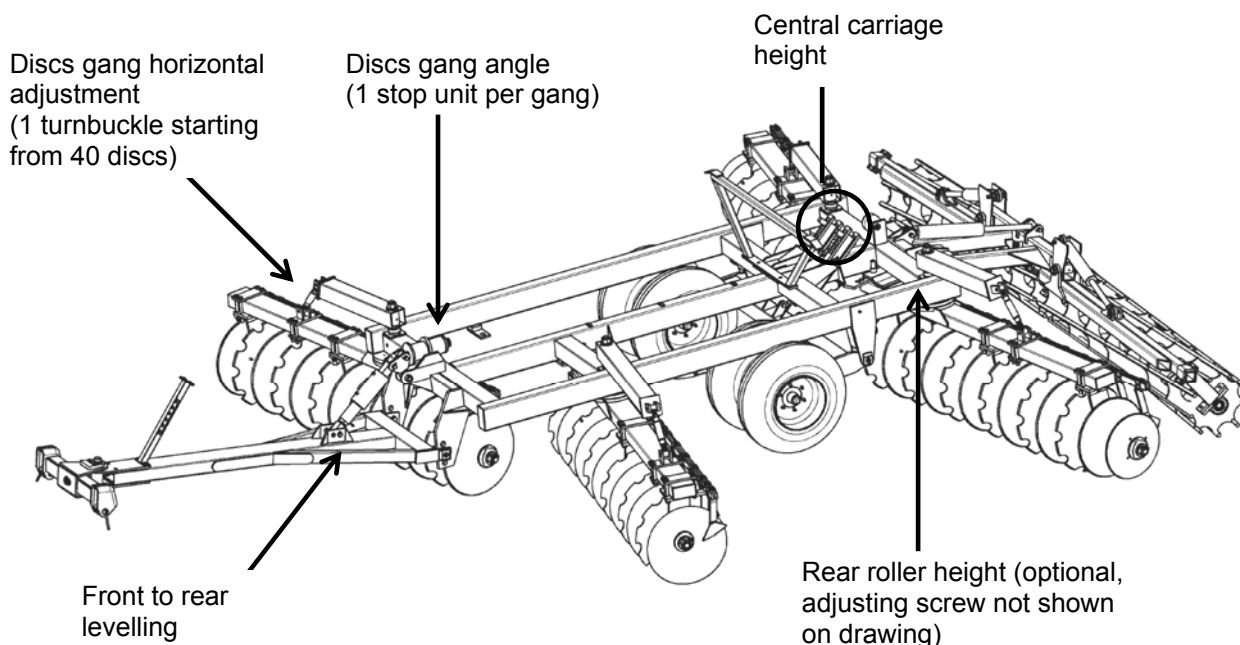
In case of any problem, do not hesitate to contact an authorized Grégoire-Besson dealer.

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
10.0 / 75 x 15.3 10 plys	5.3 bars	25 km/h - 15 mph
11.5 / 80 x 15.3 14 plys	6.5 bars	25 km/h - 15 mph
400 / 60 x 15.5 - 14 plys	4.8 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.

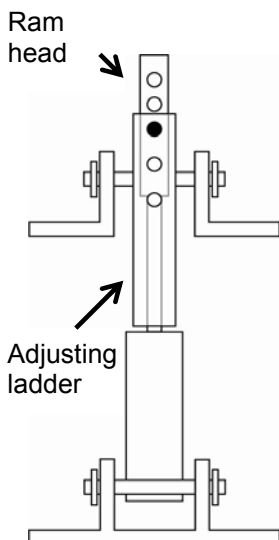
7.3. CENTRAL CARRIAGE HEIGHT

Class'XRL has its central carriage inside chassis. It is controlled by 2 DA rams.

This central carriage is used for transport, headlands manoeuvres, and for depth control. Its height is controlled by 2 mechanical stop-units.

Both stop-units shall be set the same for machine to work level.

- To raise the machine, lower central carriage lengthening rams.
- To lower the machine, raise central carriage shortening rams.



Each lift ram has several holes on its head and a free adjusting ladder around its tube. Positioning height pin on a combination head / ladder determines minimum ram length so maximum depth for the machine.

Transport position

For transport on public road, install height pins for ladders to lock rams with maximum length. It will prevent from any falling risks in case of trouble on hydraulic circuit. Refer to drawing.

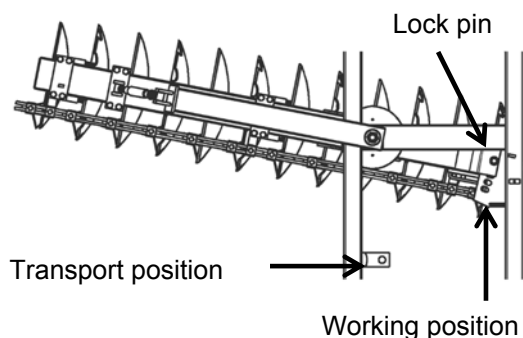
Working position

In working position, install height pins for ladders to lock rams with length corresponding to the desired working depth.

7.4. DISCS GANGS ANGLE

Guide line for discs harrow use :

- the more discs gangs angle is important, the more the machine tends to work deeper, the harder it is to pull
- the more discs gangs angle is slight, the more the machine tends to work shallower. A too slight angle may lead to poor penetration and to difficulties working the full spacing between two discs
- machine shall be set with **front angle more important than rear angle** (one hole difference on front / rear mechanical adjusters)
- machine shall be set with **same angle on both sides** (same hole difference on L.H. and R.H. mechanical adjusters)

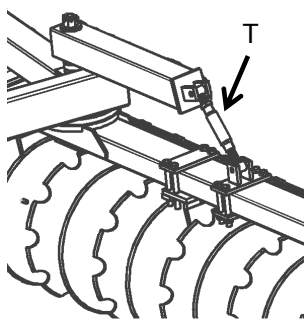


Discs gangs angle adjustment procedure

- Remove lock pin.
- Pivot discs gang to the desired position : different angle or transport position.
- Install lock pin back.

Note : as an option, hydraulic rams can pivot discs gangs till transport position or angle adjustment stop unit.

7.5. SIDE TO SIDE LEVELLING



Starting from 40 discs, all models are equipped with turnbuckles (T) to hold discs gangs in horizontal position. This ensures machine stability and even working depth.

Turnbuckles lengths are set at the manufacture.

This adjustment shall be changed only exceptionally.

Before 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.

Adjustment procedure

- Unfold machine in working position. Raise it so that discs do not touch the ground.
- Check for machine levelling with the ground (getting a reasonable distance will help).
- If a lateral wing is too low, raise it shortening turnbuckle.
- If a lateral wing is too high, lower it lengthening turnbuckle.

Note : when lateral wings are in horizontal position, they shall pivot nicely = changing transport / working position shall be an easy operation.

7.6. ROLLER HEIGHT (OPTION)

As an option, a rear roller (lateral folding, 2 parts) can be set at the rear of Class'XRL. It is not a heavy roller made to control 100 % of working depth pressure. This roller just improves finishing and packs by its own weight.

Using optional rear roller requires 1 DA remote on tractor to change transport / working position. Hydraulic circuit includes a nitrogen accumulator to protect roller from any obstacle during work.

Roller height is set with a screw situated at the rear of the machine, underneath the roller (refer to picture).



Adjustment procedure

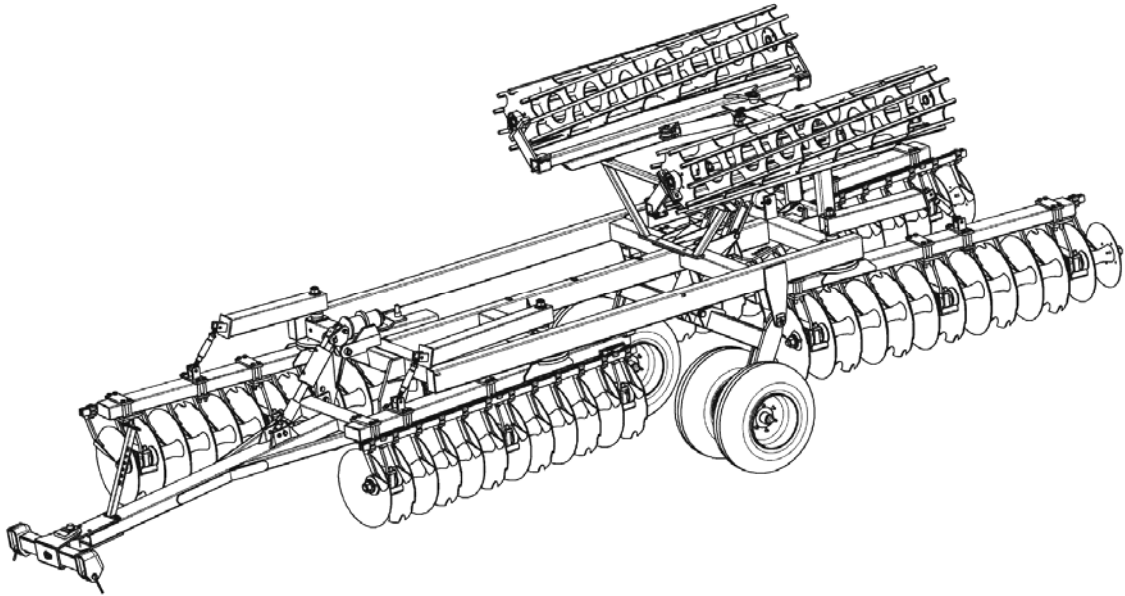
- Act on DA control lever to put roller in working position, set screw free from its stopper/
- Remove safety clip.
- **To lower the roller** = to increase weight on it or after decreasing machine working depth, **turn set screw counter clock wise.**
- **To raise the roller** = to decrease weight on it or after increasing machine working depth, **turn set screw clock wise.**
- Install safety clip back.
- Adjust roller again if necessary.

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 (refer to picture).



- **Raise machine to the maximum.**
- **Raise and fold rear roller** (if machine is equipped).
- **Fold lateral wings till transport position, lock them** with lock pin (manual adjustment) or locking hydraulic control lever in the cab (hydraulic adjustment). Refer to section 7.4.
- **Put central carriage in transport position.** Refer to section 7.3.
- **Release pressure in hydraulic circuit**, during transport machine shall stand on adjusting ladders.
- **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 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.

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).

To reach a decent finish, operating speed shall be between 6 and 10 km / h (= 3.7 to 6 mph). Higher speed may lead to over wearing of wearing parts.

Always lift up machine before manoeuvring or turning on headlands.

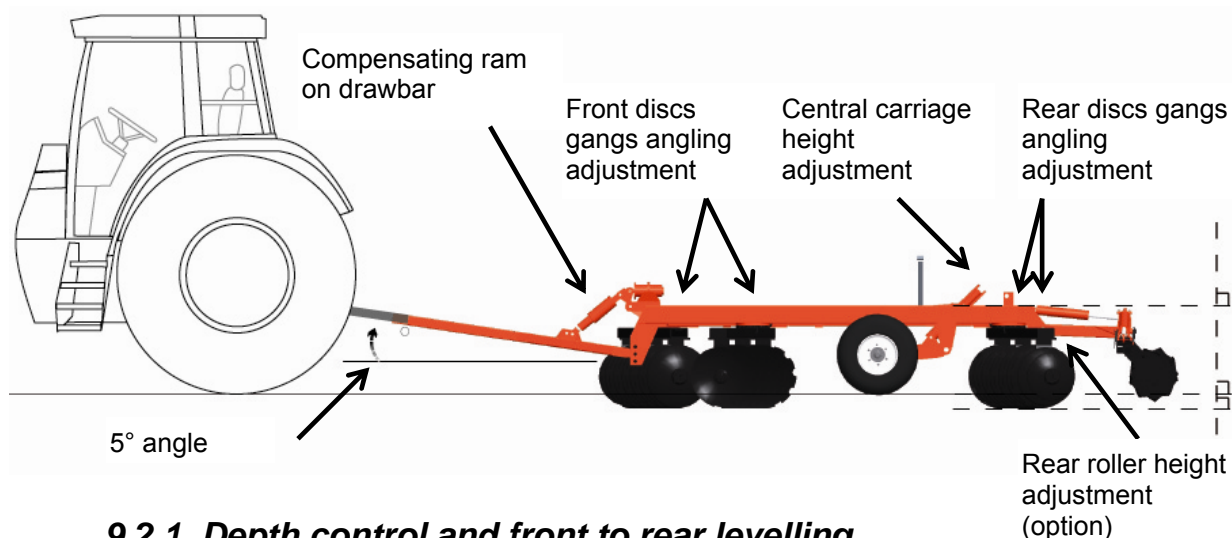
Never attempt a sharp turn with the machine in the ground.

Reduce speed before manoeuvring or crossing obstacles (ditch, ridge, rocky spots, ...).

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. FIELD ADJUSTMENT



9.2.1. Depth control and front to rear levelling

Working depth is controlled with the followings :

- central carriage height : depth control adjusting ladders
- discs gangs angle (mechanical lock pin or hydraulic rams)

Note : for machines with optional rear roller, it is not made to control depth, but to pack by its own weight.

In working position, make sure that :

- main frame is parallel to the ground
- drawbar shall have a light up angle (5°). Refer to drawing
- gangs angles shall be the same on both sides of the machine
- gangs angles shall be more important at the front than at the rear (1 hole difference).

To increase working depth

- Raise central carriage = set ladders so that lift rams can retract more
- Increase discs gangs angle
- Make sure roller does not carry excessive weight

To decrease working depth

- Lower central carriage = set ladders so that lift rams can retract less
- Decrease discs gangs angle

9.2.2. If ground is not levelled

If machine leaves a hole in the middle

Front discs gangs remove more ground than what rear discs gangs can bring back.

Possible solutions for this problem :

- reduce front discs gangs angle or increase rear discs gangs angle
- reduce front discs gangs working depth (adjustable head of compensating ram on drawbar)
- increase rear discs gangs working depth (central carriage adjustment ladders)

If machine leaves a ridge in the middle

Rear discs gangs bring back more ground than what front discs gangs removed.

Possible solutions for this problem :

- increase front discs gangs angle or decrease rear discs gangs angle
- increase front discs gangs working depth (adjustable head of compensating ram on drawbar)
- decrease rear discs gangs working depth (central carriage adjustment ladders)

If machine leaves a mark between two passes

Front discs gangs throw ground too far for rear discs gangs to bring it back.

Possible solutions for this problem :

- reduce operating speed
- install anti-projection discs on front discs gangs (contact an authorized Grégoire-Besson dealer)
- install deflector devices on front discs gangs (contact an authorized Grégoire-Besson dealer)

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.

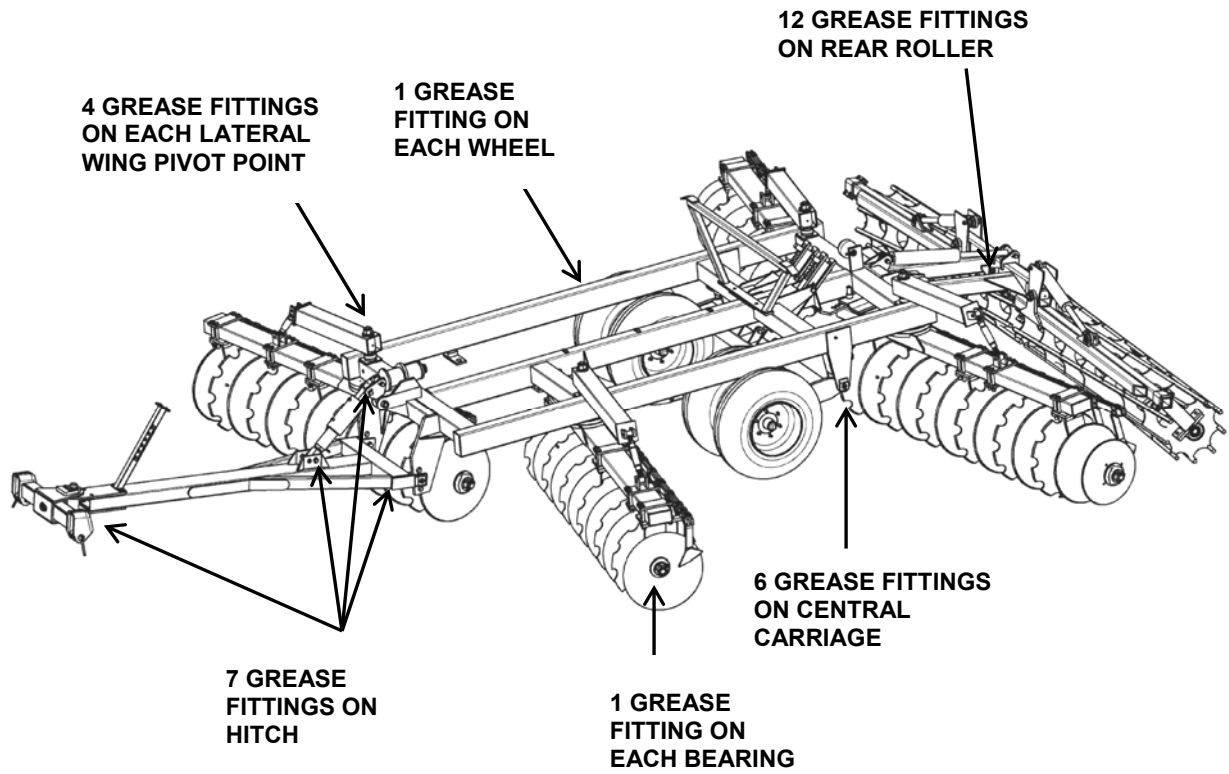
Use quality grease, type Unil – Opal MS02 or equivalent.

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 points	50 h
Compensating drawbar ram and lift ram	10 h
Discs gangs bearings (4 shots)	50 h
Central carriage articulations and hitch / wheels 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 - Class'XRL

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. **Check tractor drawbar position**
It shall be properly installed, locked in central and rear position.
3. **Check lift link arms position**
Hitching on drawbar : arms shall be raised and attached to avoid any interference with machine.
Hitching on lift links arms : links shall have the same length and stabilizers shall be installed to have minimum sway (≤ 2 cm).

HITCHING

4. **Attach machine**
Use hydraulic lift circuit to change drawbar angle if necessary.
Make sure hitch pin is in a good shape and compatible with machine hitch ring
5. **Connect hydraulic lines**
6. **Transport / working positions**

Transport position	machine raised held by adjusting ladders keeping central carriage as low as possible lateral wings folded rear roller raised and folded (if machine is equipped)
Working position	machine lowered held by adjusting ladders keeping central carriage at the height corresponding to the desired working depth lateral wings unfolded, front gangs shall have more angle than rear gangs rear roller unfolded and lowered (if machine is equipped)

FIELD ADJUSTMENT

7. **Set working depth using**
Central carriage height adjusting ladders
Discs gangs angle
Compensating cylinder on drawbar adjustment
8. **At work, machine shall run parallel with the ground**

MAINTENANCE

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

NOTES



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