

# **EUROCULT II**

## **Range 5 000**

**Chisel semi-mounted 5 parts foldable frame**

### **OPERATOR'S MANUAL**

### **MAINTENANCE INSTRUCTIONS**



**GRÉGOIRE-BESSON S.A.**  
Rue Victor Grégoire  
49 230 MONTFAUCON – MONTIGNÉ  
France

Phone : 33 (0) 2 41 64 72 67  
Fax : 33 (0) 2 41 64 67 73

Web : [www.gregoire-besson.com](http://www.gregoire-besson.com)  
Email : [Contactfr@gregoirebesson.com](mailto:Contactfr@gregoirebesson.com)

September 2009  
Original version

# SUMMARY

<b>1. INTRODUCTION</b> .....	4
PRODUCT IDENTIFICATION .....	4
<b>2. SAFETY INSTRUCTIONS</b> .....	5
2.1. SAFETY STICKERS .....	5
2.2. SAFETY WHILE ATTACHING AND DETACHING .....	7
2.3. SAFETY WHILE CONNECTING HYDRAULIC LINES .....	7
2.4. SAFETY WHILE OPERATING MACHINE .....	7
2.5. SAFETY FOR MAINTENANCE .....	8
2.6. SAFETY FOR ON HIGHWAY TRANSPORT .....	8
<b>3. MACHINE DESCRIPTION</b> .....	9
3.1. IDENTIFICATION VIEWS .....	9
3.2. TECHNICAL SPECIFICATIONS .....	10
3.3. DIMENSIONS AND WEIGHTS .....	11
3.4. TRIPLE ROW TINE HARROW .....	11
3.5. REAR LINKAGE .....	11
3.6. LIGHTS AND SIGNS KITS .....	11
3.7. EUROCHISEL® TINE .....	12
3.8. WEARING PARTS .....	13
<b>4. PREPARING THE TRACTOR</b> .....	14
4.1. TRACTOR WHEELS .....	14
<u>4.1.1. Tractor tyre</u> .....	14
<u>4.1.2. Distance between tractor tyres</u> .....	14
4.2. DRAWBAR POSITION .....	14
<u>4.2.1. Two wheels drive tractors</u> .....	14
<u>4.2.2. Four wheels drive and track tractors</u> .....	14
4.3. LIFT LINKS POSITION .....	14
4.4. FRONT END WEIGHTING .....	14
<b>5. ATTACHING AND DETACHING</b> .....	15
5.1. ATTACHING MACHINE TO TRACTOR .....	15
<u>5.1.1. Positioning ring hitch</u> .....	15
<u>5.1.2. Hitching on tractor drawbar</u> .....	15
5.2. DETACHING THE MACHINE .....	15
<b>6. HYDRAULIC CONNEXIONS</b> .....	16
6.1. REQUIRED HYDRAULIC REMOTES .....	16
6.2. HYDRAULIC CONNECTIONS .....	16
6.3. PURGING HDYRAULIC CIRCUIT .....	16

<b>7. PREPARING THE MACHINE</b> .....	17
7.1. ADJUSTING POINTS LOCALIZATION .....	17
7.2. MACHINE WHEELS .....	18
<u>7.2.1. Tyre inflation</u> .....	18
<u>7.2.2. Wheel studs</u> .....	18
7.3. FRONT TO REAR LEVELLING .....	19
7.4. SIDE TO SIDE LEVELLING .....	20
7.5. FRONT SWINGING DEPTH WHEELS .....	21
<u>7.5.1. Front swinging depth wheels height adjustment procedure</u> .....	21
<u>7.5.2. Adjusting in the field</u> .....	21
7.6. TRIPLE ROW TINE HARROW ADJUSTMENT .....	22
<u>7.6.1. Harrow arm spring position</u> .....	22
<u>7.6.2. Harrow arm height adjustment</u> .....	22
<u>7.6.3. Harrow mounting brackets adjustment</u> .....	23
<u>7.6.4. Row tine pitch adjustment</u> .....	23
7.7. EUROCHISEL® HEIGHT TINE ADJUSTMENT .....	24
7.8. TINE SPRING RESET ADJUSTMENT .....	24
<b>8. TRANSPORTING</b> .....	25
8.1. CHANGING TO TRANSPORT POSITION .....	25
8.2. CHANGING TO WORKING POSITION .....	27
8.3. DRIVING ON PUBLIC ROAD .....	27
<b>9. FIELD ADJSUTMENT</b> .....	28
9.1. FIELD UTILIZATION .....	28
9.2. DEPTH CONTROL ADJUSTMENT .....	29
<u>9.2.1. Depth control « on the go »</u> .....	29
<u>9.2.2. Depth control using single point stopper</u> .....	29
9.3. IF GROUND IS NOT LEVELLED .....	30
<b>10. MAINTENANCE</b> .....	31
10.1. GENERAL INSTRUCTIONS .....	31
10.2. STORAGE SAFETY .....	31
10.3. LUBRICATION .....	32
10.4. SPARE PARTS .....	33
10.5. QUICK CHANGE PARTS ASSEMBLY.....	33
<u>10.5.1. Fixing Quick Change pad</u> .....	33
<u>10.5.2. Positioning locking tongue</u> .....	33
<u>10.5.3. Assembling top protection plate or deflector (option)</u> .....	33
<u>10.5.4. Assembling point</u> .....	34
<u>10.5.5. Assembling reinforced point</u> .....	34
10.6. QUICK CHANGE PARTS REMOVAL .....	34
<b>11. QUICKLY STARTING - EURO CULT 5 000</b> .....	36

Any use and / or reproduction of all or part of this manual without written authorization from Grégoire-Besson is strictly prohibited.

# 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 equipments are designed according to applicable european regulation : EEC directive 2006/42. The CE logo is on identification plate. Provided Declaration of Conformity testifies that machine complies with essential 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.



## 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

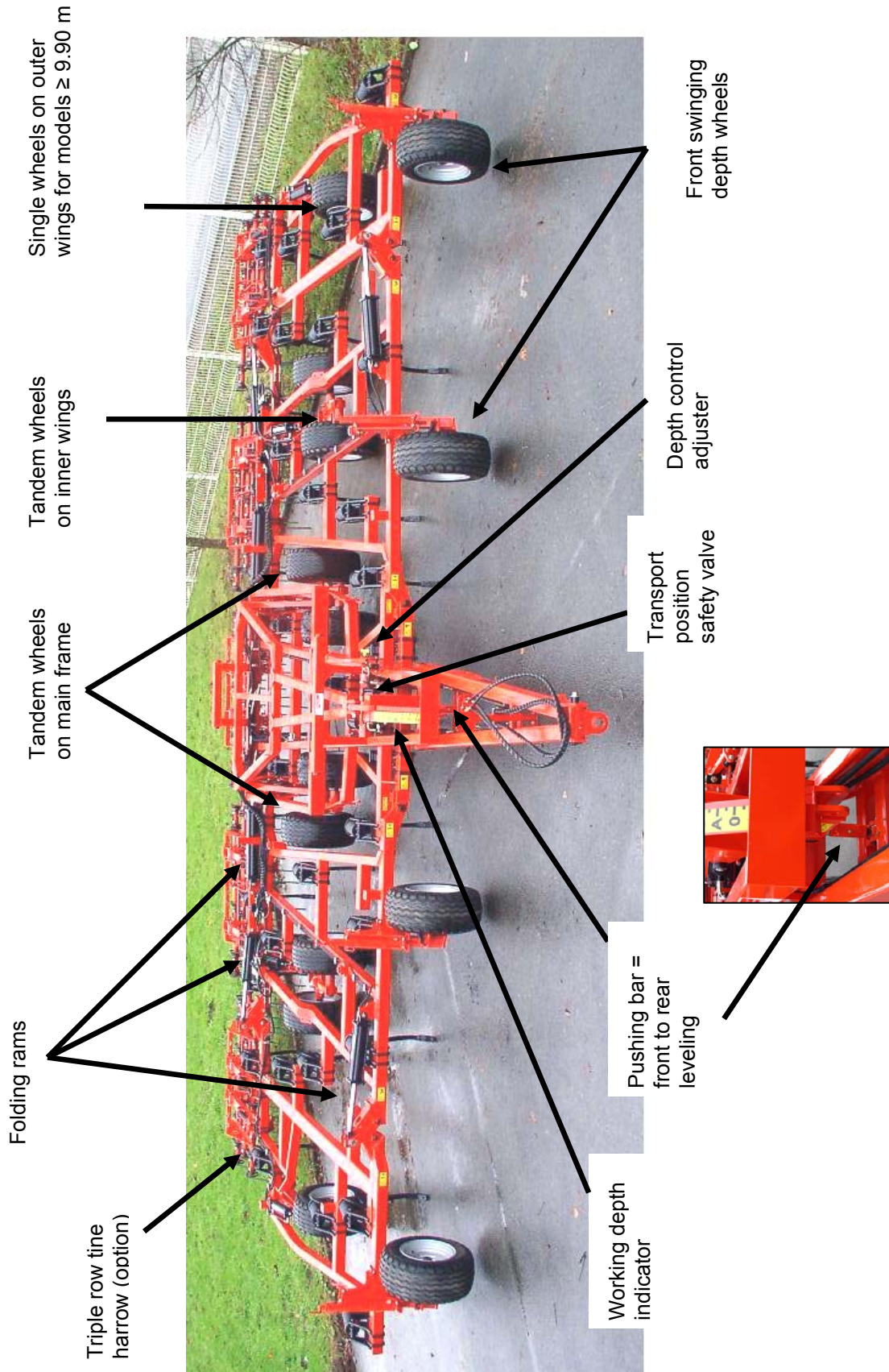


FOR YOUR OWN SAFETY AND THE ONE OF THE OTHER, RESPECT THE FOLLOWING RULES :

- 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 equipment	Optional equipment
Hitch	<ul style="list-style-type: none"> <li>Conical drawbar hitch (specify Ø when ordering)</li> <li>Long drawbar</li> </ul>	<ul style="list-style-type: none"> <li>“Scharmüller” hitch Ø 80 mm</li> </ul>
Chassis	<ul style="list-style-type: none"> <li>5 independent sections, vertical fold</li> <li>5 beams 100 x 100 mm</li> <li>Transport width &lt; 3.00 m</li> <li>Under beam clearance 700 mm</li> <li>Distance between beams 800 to 1 000 mm</li> <li>Tines spacing 230 mm or 306 mm</li> </ul>	<ul style="list-style-type: none"> <li>Stand on drawbar</li> <li>Spare wheel</li> <li>Rear linkage for semi mounted roller / compatible with triple row tine harrow</li> <li>Guiding disc (heavy slopes)</li> <li>Reinforced lighting kit</li> <li>Tool box</li> </ul>
Working width	<ul style="list-style-type: none"> <li>Tines spacing 230 mm : 9.00 m (39 tines) to 11.30 m (49 tines)</li> <li>Tines spacing 306 mm : 9.20 m (30 tines) to 11.05 m (36 tines)</li> </ul>	
Wheels	<ul style="list-style-type: none"> <li>6 holes hub</li> <li>Tires 360 / 65 R 18,</li> <li>Central main frame : 4 wheels in tandem</li> <li>Inner wings : tandems wheels + front swinging depth wheel</li> <li>Outer wings : single wheels + front swinging depth wheel on 9.90 m model and more</li> </ul>	<ul style="list-style-type: none"> <li>Wheel scrapers</li> </ul>
Depth control	<ul style="list-style-type: none"> <li>Machine automatic self levelling through DA cylinders master / slave</li> <li>Choice for working depth adjustment on the go (from tractor's cab) or with stopper (single depth point for complete machine)</li> </ul>	
Tines	<ul style="list-style-type: none"> <li>Eurochisel® tine in cast steel, « Edge On » narrow profile, Grégoire-Besson patented</li> <li>Spring reset safety device, 450 kg on point</li> <li>Wearing parts : straight point Quick Change</li> </ul>	<ul style="list-style-type: none"> <li>Spring reset safety device, 340 kg on point</li> <li>Quick Change parts : reinforced HD point, goose share, deflector</li> <li>Bolted reversible points : straight point, double heart point, twisted point, goose share</li> <li>Carbide protection</li> </ul>
Rear equipments		<ul style="list-style-type: none"> <li>Triple row tine harrow</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 WEIGHTS

Tines spacing	Number of tines	Working width	Transport height	Transport width	Over all length *	Approx. weight
230 mm	39	9.00 m	4.20 m	3.00 m	10.00 m	8 100 kg
	43	9.90 m				8 900 kg
	49	11.30 m				9 800 kg
306 mm	30	9.20 m				7 550 kg
	34	10.45 m				8 350 kg
	36	11.05 m				9 000 kg

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

\* Over all length for machine with rear equipment (whether triple row tine harrow or roller).

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

### 3.4. TRIPLE ROW TINE HARROW

Triple row tine harrow ensures levelling and finishing. Teeth have a shortage action (clods, residue, light ground). Lateral movement around teeth leads to surface levelling and to ground to root separation, speeding up drying and decomposition of crop residue or weeds.

Teeth ( $\varnothing$  16 mm, lg. 700 mm) are assembled per pair and are retractable (backward manoeuvres). They have adjustable pitch, in order to work in all conditions : heavy residue, stony fields, heavy or sticky grounds, ...

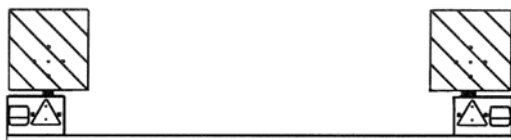
### 3.5. REAR LINKAGE



A rear linkage shall be adapted on machine main frame. It allows combination with a second semi-mounted machine (packer roller, seeder, ... ). This option is available for machine equipped with a triple row tine harrow.

Rear hitching hook is height adjustable, same as a trailer hitch point on a tractor. Two double effect hydraulic lines are included for the rear machine.

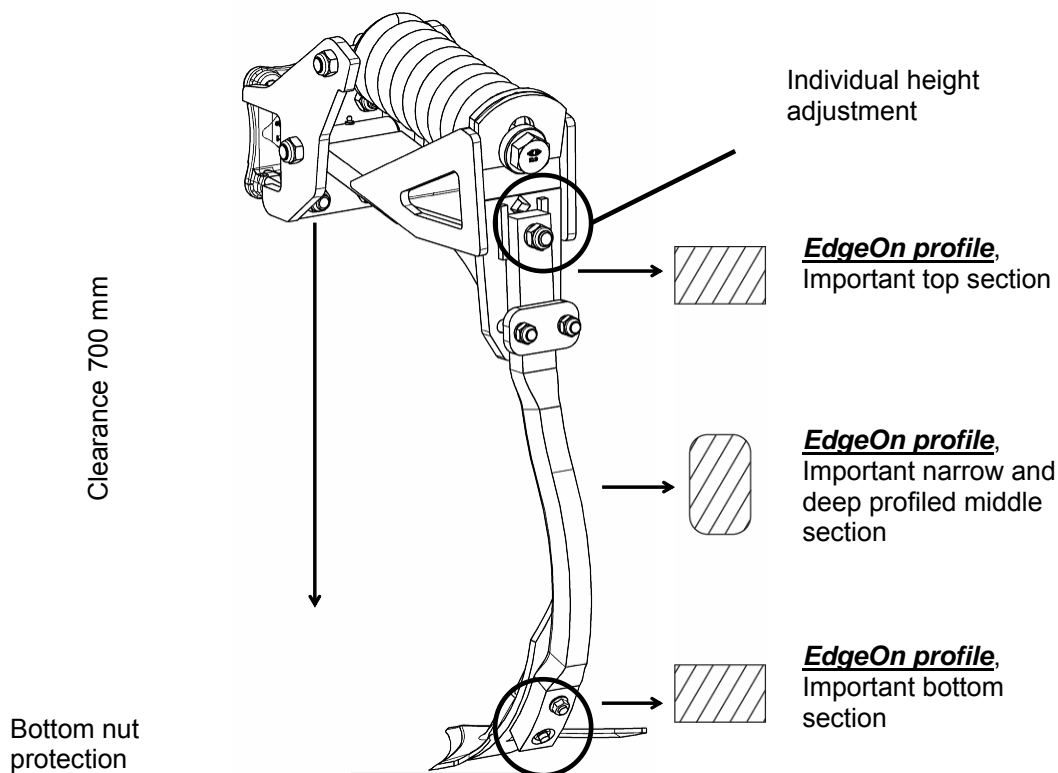
### 3.6. LIGHTS AND SIGNS KITS



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.

### 3.7. EUROCHISEL® TINE



Eurochisel® tine is standard assembly on all Eurocult. Tine is equipped with non-stop spring safety device, 450 kg load capacity at the point (340 kg as an option). Tine is set on frame with counter plate.

Tine has standard advantages that allow adaptation to all working conditions (shallow minimum tillage, deep conventional tillage, seedbed preparation, ... ) with high mixing capacity even in heavy residue conditions :

- a - under beam clearance 700 mm
- b - individual tine height adjustment (GB patented), possible utilisation as track eraser
- c - "EdgeOn" profiled shank with
  - strong shank fixing on support bracket (top section)
  - profiled narrow and deep shank for maximum flow (middle section)
  - strong wearing part fixing on shank with bottom nut protection (bottom part)
- d - large choice for wearing parts, bolted reversible or Quick Change fitted

### 3.8. WEARING PARTS

Eurochisel® tine may be equipped with two different types of wearing parts :

- reversible parts : bolted on shank
- Quick Change parts : a quick change pad is bolted on the shank and a tongue holds wearing part. Top wearing protection plate (standard) may be replaced by deflector device (optional).

Type of wearing part	Bolted assembly (reversible parts)	Quick Change assembly
Straight point	X	X
Twisted point*	X	-
Double heart point	X	-
Goose share**	X	X
Straight HD point	-	X
Deflector	-	X

\* 2 models : L.H. and R.H.

\*\* 3 models : width 254 mm, 306 mm or 356 mm



**Straight point** : standard assembly, easy to pull and adapted to deep tillage. Recommended for hard grounds or compacted conditions.

**Twisted point** : bolted on shank, it has the same bottom part as a straight point, but its twisted upper part gives a « mini mouldboard » effect. Adapted to heavy residue conditions, it leaves trash on top (anti erosion profile).



**Double heart point** : more aggressive than straight point. On one side it removes more ground, on the other side shares trash flow on around the shank : mixing is improved. To increase its life-time, point is reinforced on its backside.

**Goose share** : it has been designed to reach two main objectives :

- cutting width shall stay the same all along part wearing = « stay wide » profile with parallel sides,
- precise pitch to improve penetration and prevent from pan creation = « ultra wing » profile with cutting faces.



**Straight reinforced point** : QC assembly only,



heavier than standard straight point, it is particularly adapted to wearing conditions : thicker steel, rear tongue to prevent from bending and loosing the part central nervure help stones lateral sway, preventing their raising available with carbide reinforcement

**Deflector device** : QC assembly only replacing standard wearing protection plate,  
fitted above point, it optimizes mixing. Recommended for heavy residue conditions.



## 4. PREPARING THE TRACTOR

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

### 4.1. TRACTOR WHEELS

#### 4.1.1. 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.

#### 4.1.2. 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.

### 4.2. DRAWBAR POSITION

#### 4.2.1. Two wheels drive tractors

If tractor is equipped with a swinging drawbar, it 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.

#### 4.2.2. Four wheels drive and track tractors

If tractor is equipped with a swinging drawbar :

- **for transport on public highway** : it has to be set **fixed in central and rear position** (to improve manoeuvrability). Install locking device to let minimum loose and ensure maximum security,
- during field operation : install locking device giving one hole clearance on each side of the drawbar to prevent any damage on drawbar resulting from using powerful tractor.

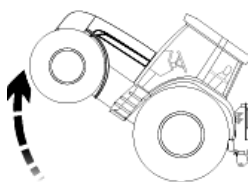
Drawbar height shall not be changed. It has been designed to achieve tractor's best performances.

### 4.3. LIFT LINKS POSITION

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.

## 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 4.4.

### 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. Positioning ring hitch

Double cone with spherical support hitch can be set in horizontal position using an Allen key (refer to picture).

Once hooked up vibrations may loose the screw. So it is normal to re-tight it regularly.



#### 5.1.2. Hitching on tractor drawbar

- 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.

Connect hydraulic hoses.

### 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 unfolded on its tines,
- 2) Install blocks under drawbar to hold it in position,
- 3) Completely lower the machine to the ground,
- 4) Remove pressure and disconnect hydraulic lines
- 5) Remove hitch pin (or detach lower lift links).

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 hydraulic lift.
- 1 DA for hydraulic flat folding.

### 6.2 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.**

### 6.3. PURGING HDYRAULIC CIRCUIT

All lift cylinders are equipped with bypass valve allowing pressurised oil to chase air away. **Hydraulic lift circuit shall be purged once a day and every time machine is not raising or lowering correctly.**

- Completely lower the machine to fully retract lift cylinder rods. Wait for a few seconds before removing control lever in the cab.
- Completely raise the machine to fully extend lift cylinder rods. Wait for a few seconds before removing control lever in the cab.
- Keep purging till machine raises and lowers normally, central frame and lateral wings shall always stay level.

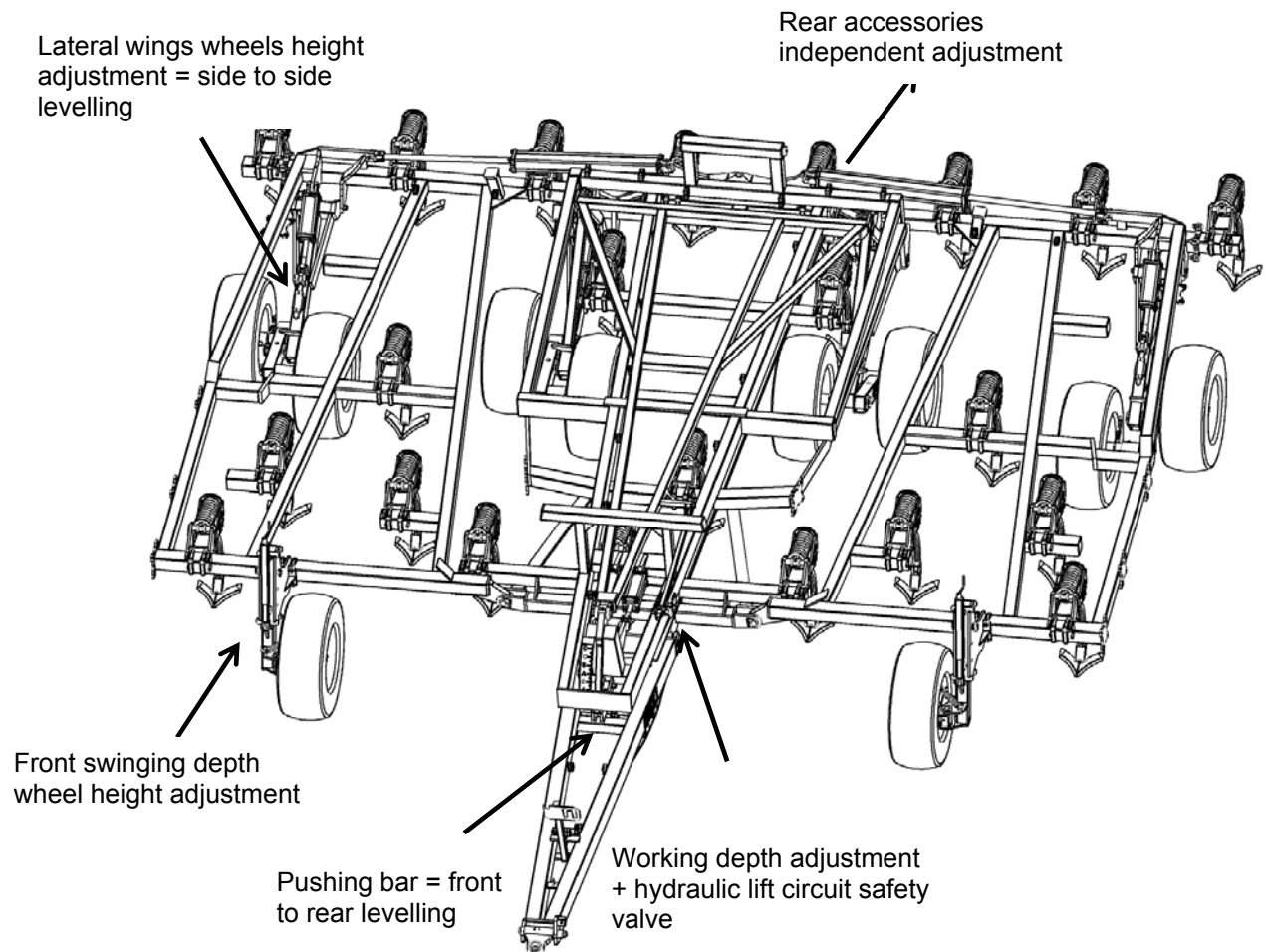
Note : if machine has spent a while without working, wait a few minutes when purging. It takes times for oil to turn all along hydraulic circuit.

## 7. PREPARING THE MACHINE

Follow recommendations given in the safety section of this manual. They are not restrictive. For available accessories combinations possibilities refer to section 3.6.

### 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
360 / 65 R 18	5.2 bars on central frame	25 km/h
	3.2 bars on central frame	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

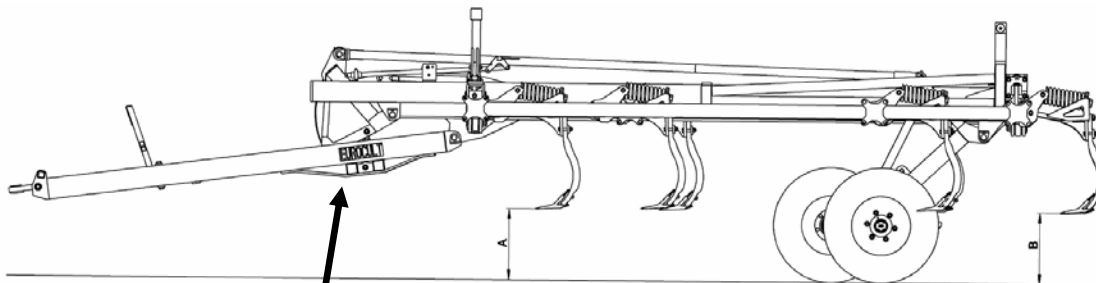
Check wheels general state and studs tightness every day.

Treads type 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. FRONT TO REAR LEVELLING

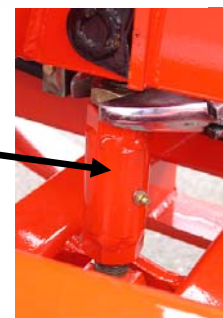
Once machine is hooked up right, you have to level it.  
**This operation requires a flat and firm surface.**



Front to rear levelling is done by turning the **drawbar adjustment pushing bar** (refer to picture).

**Machine** has to be **strictly lined up with the ground**. This adjustment is specific to each tractor and depends on drawbar's height. It shall be modified every time a different tractor is used.

Machine has been designed so that **once pushing bar is set, all tines from the five beams are at the same height and will stay so** in every conditions : raising or lowering the machine, in transport position, working from 5 cm to 30 cm.



### Front to rear adjustment procedure :

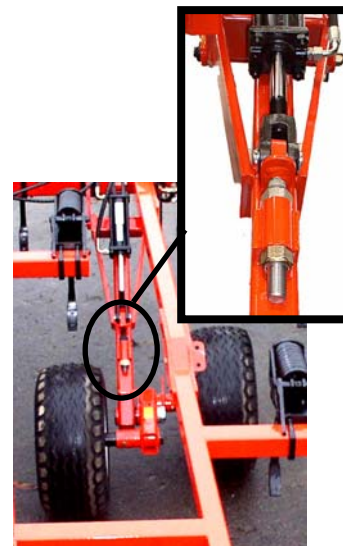
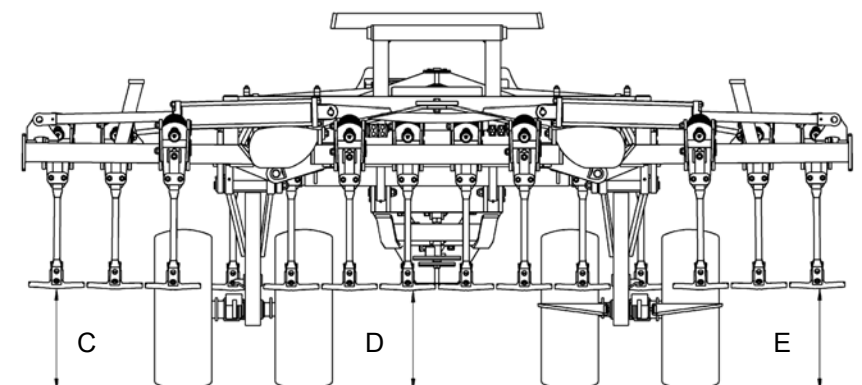
- Lift up machine so that it does not touch the ground.
- Check for machine levelling with the ground (getting a reasonable distance will help).
- If machine is not level (**distance A  $\neq$  distance B**), lower it to release pressure on pushing bar to adjust it.
- Loose jam nut.
- If front is too low, turn pushing bar clockwise.
- If front is too high, turn pushing bar counter clockwise.
- Tight jam nut and lift up machine.
- Check front to rear levelling.
- Start again this adjustment till you reach the perfect levelling of your machine (**distance A = distance B**).



Always make sure you have the same threads length on both sides of the pushing bar

Regularly check jam nut tightness : in rocky conditions vibrations may loose it.

## 7.4. SIDE TO SIDE LEVELLING



Side to side levelling of the machine is controlled by wing wheels height adjustment (see picture on right hand side).

Once machine is unfolded, **lateral wing frames have to be levelled with central frame (distance C = distance D = distance E)**, so that all tines work at the same depth. This adjustment is done at the manufacture and shall be changed only exceptionally.

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

- Check tyres : they must be all the same, inflated the same, having the same general state,
- Purge hydraulic circuit : air might be the source of the problem.

### Side to side adjustment procedure :

- Lift up the machine so that it tines do not touch the ground.
- Check for machine levelling with the ground (getting a reasonable distance will help).
- If one wing is too low (distance C or E < distance D), it will work deeper : it shall be raised unscrewing nut and jam nut on lift cylinder adjustment rod (see picture).
- If one wing is too high (distance C or E > distance D), it will work shallower : it shall be lowered screwing nut and jam nut on lift cylinder adjustment rod (see picture).
- Lower the machine on the ground to remove pressure from lateral wing wheels will facilitate adjustment.
- Adjust step by step till machine is perfectly levelled from side to side.

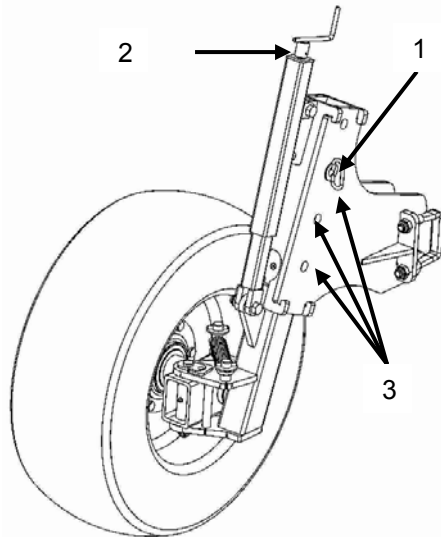
Note : if machine is not perfectly levelled from side to side, tractor might pull not straight, since there is not the same pressure on both sides. It might pull towards a deeper working side or away from a shallower working side.

## 7.5. FRONT SWINGING DEPTH WHEELS

Front swinging depth wheels improve both machine stability in the field and regularity of lateral wings working depth. Their use is required on wide equipments, for high speed work, in compacted or extremely dry fields.

They are not gauge wheels to control working depth. They shall not carry excessive pressure.

### 7.5.1. Front swinging depth wheels height adjustment procedure



Front swinging depth wheels height adjustment is precisely done positioning pin (1) in one of the holes (3). Turnbuckle (2) will help for this adjustment but shall never be used to hold the wheel in working position.

- Remove clip (not shown) and pin (1).
- Raise the wheel turning turnbuckle (2) clockwise or lower the wheel turning counter clockwise.
- At desired height put pin (1) in one of the holes (3) with its safety clip.
- Slightly turn turnbuckle (2) to remove its pressure. All weight shall be for pin (1).
- Install turnbuckle crank holder (not shown) to prevent from any contact when folding the machine in transport position.

### 7.5.2. Adjusting in the field

- Raise front swinging depth wheels high enough so that they don't touch the ground.
- Put machine into the ground and set working depth (refer to Depth control adjustment section).
- At desired working depth, stop tractor, let machine in the ground and check for both side to side and front to rear levelling.
- If machine is not level, level it (refer to Levelling the machine section).
- If machine is level, lower front swinging depth wheels to the ground. **All wheels shall be adjusted at the same depth.**
- Start working again with front swinging depth wheels in position. Check for good machine levelling. If front wheels let an important track or if tyres crush excessively, raise wheels one position.

Note : adjusting front swinging depth wheel too low may lead to : poor lateral wing penetration, wrong side to side levelling, intempestive pressure in the frame, lack of traction because of weight transfer reduction.

## 7.6. TRIPLE ROW TINE HARROW ADJUSTMENT

Prior to efficient triple row tine harrow adjustment, machine shall be correctly adjusted = levelled both side to side and front to rear at desired working depth and speed.

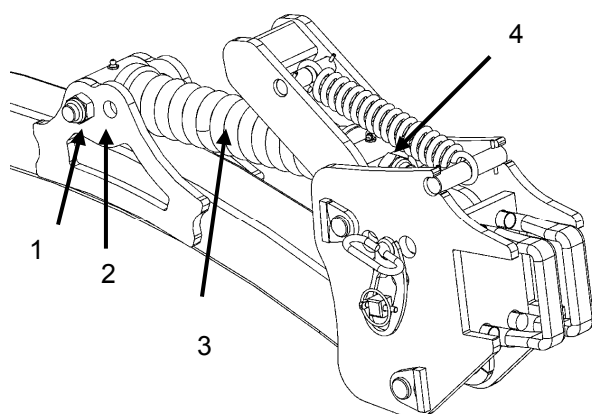
Four adjustments shall be done on triple row tine harrow to find the right balance between row tine penetration, depth and pitch in order to leave a nice levelled finish with a good mixing and repartition of residue.

For an optimum finish, it might be necessary to re-adjust row tine harrow according to each fields conditions : type of soil, nature and quantity of residue, moisture ...

**All harrows mounting brackets shall be adjusted the same.**

Recommendation : do only one adjustment at a time and check its performance before going to next adjustment.

### 7.6.1. Harrow arm spring position



For regular conditions, harrow arm spring shall be positionned in rear hole (1) (refer to picture).

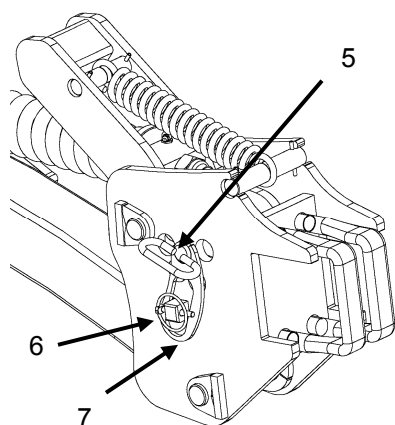
Front hole (2) allows adaptation to specific conditions :

- Using short tines : length 500 mm instead of 700 mm,
- Increasing harrow arm height adjustment possibilities (refer to following section).

Pressure on spring (3) is set by nut (4). Adjustment is done at the manufacture and shall be modified only in extremely particular

conditions. Spring end to end distance : 315 mm. Nut (4) shall never reach the end of rod threads (hidden on picture).

### 7.6.2. Harrow arm height adjustment



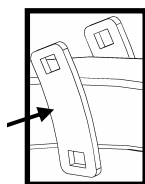
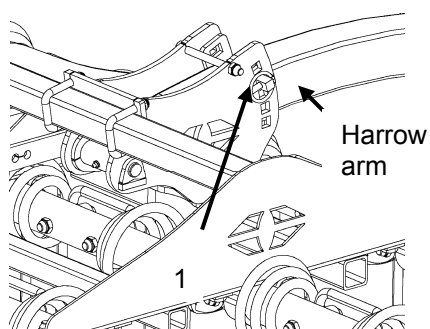
Harrow arm height adjustment is done positioning pin (5) in one of the holes of the mounting bracket (refer to picture).

- When pin (5) is in front position (= towards tractor), harrow arm is in upper position.
- When pin (5) is in rear position (= towards harrow tines), harrow arm is in lower position.

#### Harrow arm height adjustment procedure :

- Remove clip pin from square stopper (6).
- Remove pin (5) and holder (7).
- Change harrow arm height.
- Put back holder (7) and pin (5).
- Put back clip pin on square stopper (6).

### **7.6.3. Harrow mounting brackets adjustment**



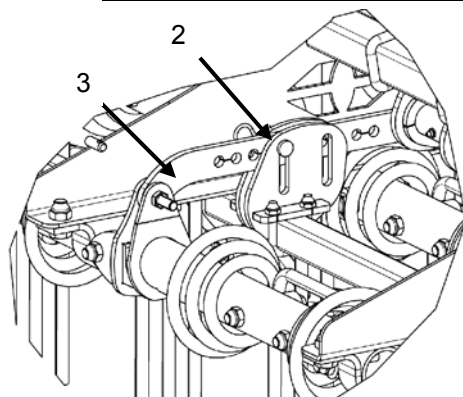
In working position, all triple row tines harrow mounting brackets shall be levelled front to rear. This will allow maximum flow through the tines and will prevent from plugging.

#### **Mounting bracket pitch adjustment procedure :**

- Remove clip pin and square pin (1).
- Change harrow arm position.
- Put back square pin (1) with its clip pin.

Every harrow arm has adjustment holes on both upper and lower sides (refer to picture) to allow adaptation to all conditions.

### **7.6.4. Row tine pitch adjustment**



Row tine pitch adjustment is done positioning pin (2) through sliding bracket (3).

**To increase row tine pitch** = setting tines more aggressive.

Remove R clip and pin (2), move backwards sliding bracket (3). Put back pin (2) through one of the holes of its support and sliding bracket (3). Put back R clip.

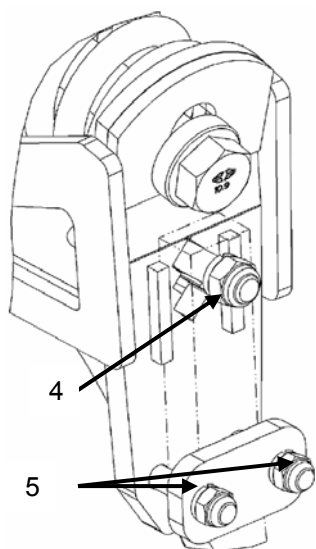
Tines will remove more ground, improving levelling. They will not work correctly in heavy trash conditions.

**To decrease row tine pitch** = setting tines less aggressive.

Remove R clip and pin (2), move forwards sliding bracket (3). Put back pin (2) through one of the holes of its support and sliding bracket (3). Put back R clip.

Tines will remove less ground. They will accept heavy trash conditions.

## 7.7. EUROCHISEL® HEIGHT TINE ADJUSTMENT



Eurocult Eurochisel® tines have an individual height adjustment. Machine is delivered with standard adjustment : all tines set in high position. This adjustment shall not be changed.

However, in specific conditions it allows tine to work deeper (wheels tracks for example) providing a better finishing.

This is a punctual and particular adjustment to be used in shallow working conditions or in light soils, when tractor's and / or machine's wheels leave a heavy track.

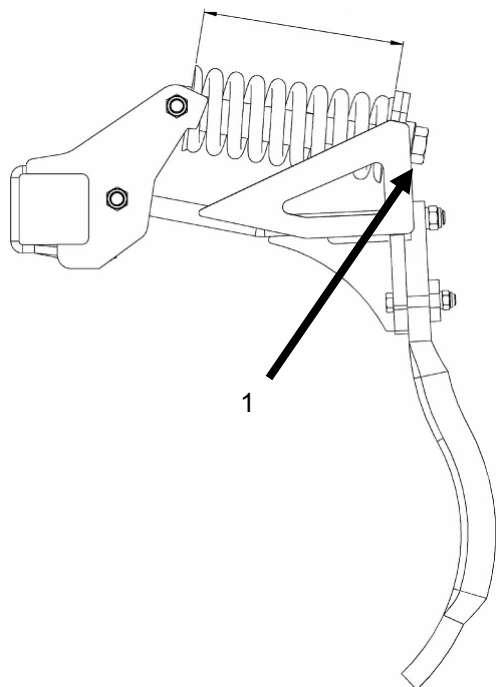
**Note :** it is better to lower the entire machine than to lower lots of tines.

### Adjustment procedure :

- Be careful, parts working in the ground are sharpened, they could cut and cause severe injury.
  - Loose bolt (4) (TRCC M 20) and remove it from its position.
  - Loose the two bolts (5) (HM 16).
- Lower Eurochisel® tine till next position.
  - Put bolt (4) in position and tight it
  - Tight the two bolts (5).

## 7.8. TINE SPRING RESET ADJUSTMENT

End to end distance : approx. 295 mm



Eurochisel® tine is equipped with a non-stop spring auto reset safety device. Spring pressure is adjusted at the manufacture to work in most conditions. End to end distance is set to approx. 295 mm, for a point pressure resistance of 450 kg. This adjustment shall not be changed since it also puts shank in its right vertical position, insuring correct pitch for wearing parts and good quality work.

A roll pin prevents from any loosening of bolt (1) because of vibrations in rocky or very dry conditions.

Never attempt any intervention on this mechanism. Contact an authorized Grégoire Besson dealer.

Another spring is available for a point pressure resistance of 340 kg (ref. : M 610 066). Contact an authorized Grégoire-Besson dealer.

## 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.**
- Lower the machine to lower gravity centre if necessary. Do not lower too much to avoid any contact with the ground.
- Shut safety valve on lift hydraulic circuit to lock machine in raised position.
- **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.**



Eurocult 5 000 range unfolded in working position



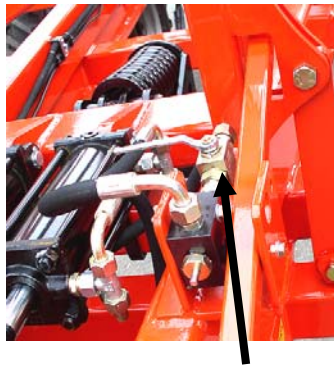
Eurocult 5 000 range 1st phase of folding cycle external lateral frames or outer wings



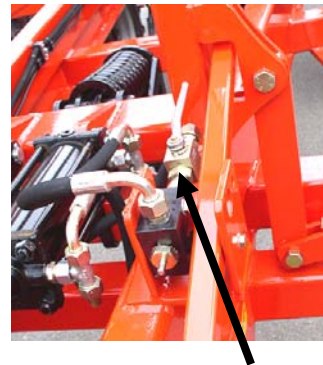
Eurocult 5 000 range 2nd phase of folding cycle internal lateral frames or inner wings



Eurocult 5 000 range folded in transport position



Valve shut off  
Transport position



Valve opened  
Working position

**Note :** make sure there is no dirt accumulation in frame articulations before folding the machine.

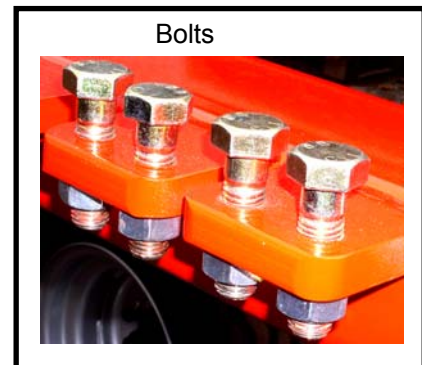
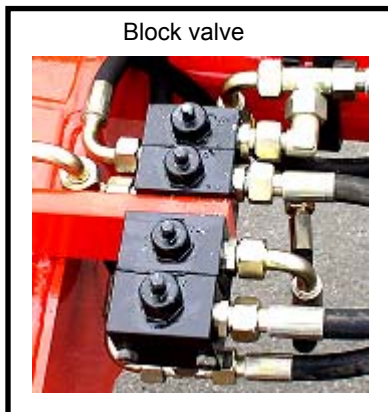
### Eurocult 5000 range specificity

Patented 5 sections frame folding requires total outer wings wheels entering into the frame. It is controlled with a special block valve.

When outer wings are folded (= end of 1<sup>st</sup> phase of the cycle), bolts shall come on contact on block valve (refer to pictures hereafter). Once contact is done oil flow controls wheels entering into the frame. Then cycle may continue safely.

**ATTENTION :** bolts are set at the manufacture. Their adjustment shall never be changed :

- bolts set too short : there is no contact and outer wings wheels may cause a damage during manoeuvre.
- bolts set too long : they may damage block valve during manoeuvre.



## 8.2. CHANGING TO WORKING POSITION

Follow here above described procedure in the opposite way.

Open safety valve on hydraulic lift circuit.

Once machine is unfolded, put hydraulic control lever on neutral position.

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 the best result, use machine with a slight angle regarding previous crop seeding line (15° to 30°). Operating speed shall be between 7 and 12 km / h (= 4.4 to 7.5 mph). 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.

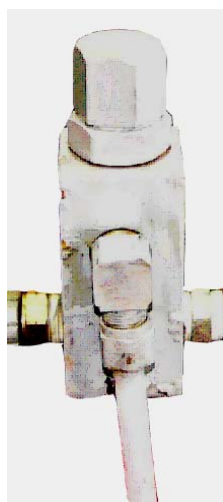
Never attempt a sharp turn with the machine in working position.

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

Frame has been designed with five independent sections for this wide machine to follow ground undulations.

Internal lateral frames = inner wings may move from + 10° to - 10° regarding central main frame.

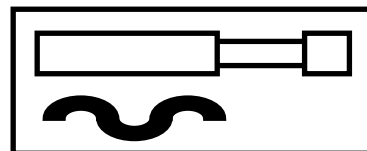
External lateral frames = outer wings may move from + 8° to - 8° regarding inner wings.



For this movement to be possible, **folding hydraulic control lever must be on neutral position in the cab**. Hydraulic rams will then let frames following the ground.

A safety valve is set on hydraulic circuit to prevent any over pressure due to wrong control lever positioning in the cab. Frame is protected since valve lets oil escaping.

Valve is set on drawbar. It is set at 85 bars, this adjustment shall never be changed.



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

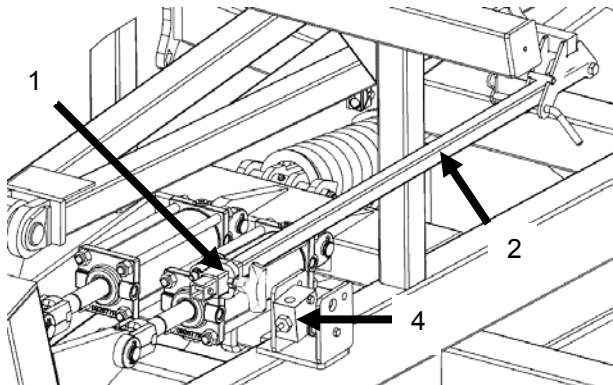
**IMPORTANT** : always do one adjustment at a time. Then it is easier to check its performance and to change it if necessary.

## 9.2. DEPTH CONTROL ADJUSTMENT

There are two ways to control working depth on Eurocult Semi-Mounted :

- on the go : depth is adjusted from tractor's cab at any time.
- using single point stopper : depth stays the same one stopper is set.

### 9.2.1. Depth control « on the go »

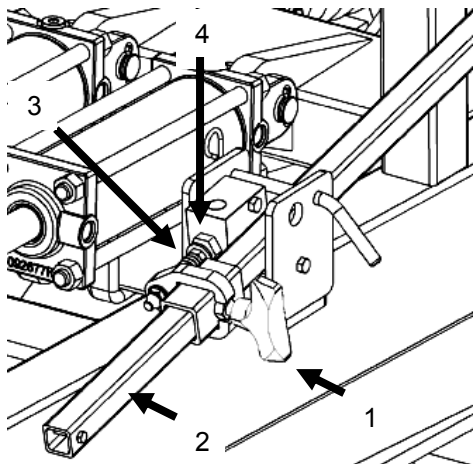


Working depth is controlled from tractor's cab using hydraulic control lever. There should be no contact on hydraulic valve (4) so that it never shuts off lift hydraulic circuit.

There are two ways to control depth "On the go" :

- Put stopper (1) by the end of rod (2) : depth control is entirely done by operator from tractor's cab. Using depth indicator (refer to identification views p. 8) may help him.
- Put rod (2) in upper position (refer to picture) and let stopper (1) in its position : this will "keep in memory" previously adjusted working depth in case of a punctual need for deeper tillage.

### 9.2.2. Depth control using single point stopper



Rod (2) shall be in lower position (refer to picture). Stopper (1) shall be positioned on rod (2) so that when lowering the machine bolt (3) comes in contact with valve (4). This contact shuts off machine hydraulic circuit at desirable working depth.

#### Adjustment procedure:

- Let stopper (1) by the end of rod (2) and start working.
- Set working depth moving hydraulic control lever in tractor' cab.
- Once desired working depth is reached, stop tractor, set parking brakes, come down
- Unscrew yellow handle and raise stopper (1) up

so that contact is done on valve (4).

- Screw handle
- Start working again
- Proceed step by step till you reach the perfect working depth

Once stopper is definitely set, operator does not have to worry anymore, machine will always come back to the same working depth.

### **9.3. IF GROUND IS NOT LEVELLED**

- Check machine levelling, both side to side and front to rear
- Check rear accessories adjustment : they shall be set all the same, at the same height
- Check wearing parts : all tines shall be equipped with the same type of wearing part
- If wheels leave a track, check individual height adjustment on tines following the wheels (shallow tillage, wet conditions, ... )
- Check machine tyres general state and pressure

## 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. 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.

### 10.3. 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.

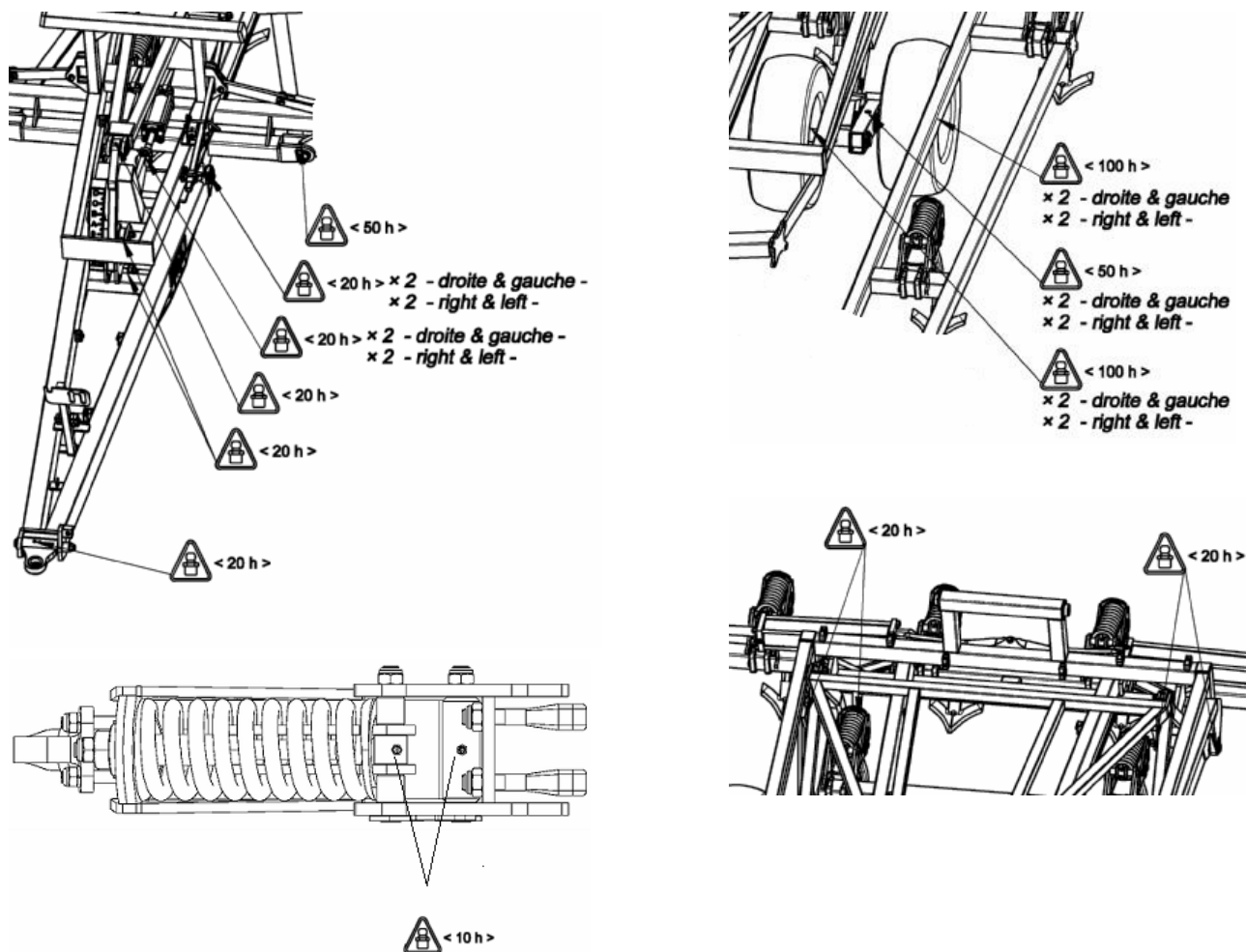
Always wipe grease fittings with a clean rag before introducing grease. Do not hesitate to change any worn or broken grease fitting. Check for good grease course.

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
Drawbar articulations	20 h
Main frame rear articulations	20 h
Lateral frames articulations	50 h
Wheels tandems articulations (on each tandem of central frame)	100 h
Single wheels articulations (lateral frames or front swinging depth wheels)	100 h
Cylinders (lifting or folding)	50 h
Eurochisel spring reset tine	10 h



## 10.4. 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°.

## 10.5. QUICK CHANGE PARTS ASSEMBLY

Quick Change (QC) parts assembly requires special tool (ref. : 5 920 037, refer to picture).

For a proper assembly, follow hereafter steps in the given order.

Do not hesitate to contact an authorized Grégoire-Besson dealer.



### 10.5.1. Fixing Quick Change pad

Make sure Quick Change pad is :

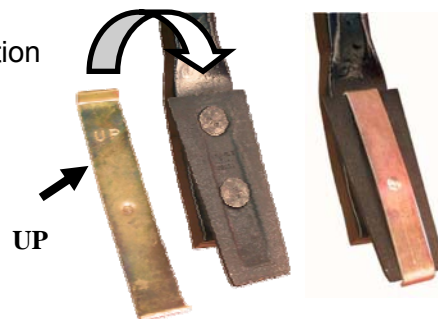
- in a good shape,
- properly positioned,
- properly fixed by its two bolts.



### 10.5.2. Positioning locking tongue

Put locking tongue on the pad watching for the right orientation (refer to picture) :

- « UP » sign on top,
- nipple on external face.



### 10.5.3. Assembling top protection plate or deflector (option)

- Put top protection plate on locking tongue, notch turned on bottom side.
- Press and push upward till top protection plate is locked.



### **10.5.4. Assembling point**

If required, drill a hole through the point at foreseen position (bit n°3).

- Install point on locking tongue.
- Insert special tool in the hole.
- Using a hammer, bring point up to its position. Once properly fitted, point shall not move any more. Overpass nipple if required.

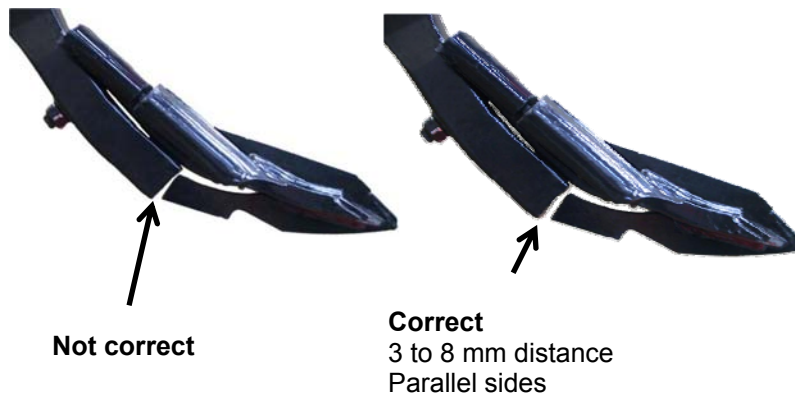
Note : using hammer, do not hit directly the point, but the tool which has been specially designed for. This will avoid any damage on point (carbide protection).



### **10.5.5. Assembling reinforced point**

This point has a rear tongue to prevent from bending and loosing it when wearing out. This tongue shall perfectly lean on the bottom of the tine = parallel sides + 3 to 8 mm distance (refer to picture).

Grind point rear tongue if necessary.



## **10.6. QUICK CHANGE PARTS REMOVAL**

Use special tool and a hammer to remove Quick Change points.

- Install tool in the hole.
- Unlock point from the tongue.

It is not necessary to remove top protection plate to remove / change Quick Change point.

Note : it is also possible to use a regular punch to remove Quick Change point.





## 11. QUICKLY STARTING - EUROCULT 5 000

Take all precautionary measures. Respect safety recommendations.

### PREPARING THE TRACTOR

#### 1. Check tyre pressure

On tractor (it should be the same on both sides on each axle) and on machine.  
Always follow tyre manufacturer recommendations.

#### 2. Check tractor drawbar position

It shall be properly installed, locked in central and rear position.

### HITCHING

#### 3. Attach machine to the tractor

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

#### 4. Connect hydraulic lines making logical links

#### 5. Level the machine

**Front to rear levelling :** set drawbar adjustment pushing bar tube situated on front of the machine, between tongue and main frame, with LH and RH threads.

**Side to side levelling :** check wing height adjustment they are set at manufacture and should not necessarily be modified.

#### 6. Transport / working positions

Transport position	lateral wings folded, hydraulic control lever locked in the cab safety valve shut to keep machine in raised position
Working position	lateral wings unfolded, hydraulic control lever on neutral position in the cab safety valve opened on machine lift circuit

### FIELD ADJUSTMENT

#### 7. Adjusting depth control

**On the go from the cab** stopper never comes in contact with the valve operator controls depth from the cab

**Using stopper** set stopper on rod so that once machine is at desired working depth it comes in contact with the valve to close machine hydraulic lift circuit.

#### 8. Accessories adjustment

Make sure machine is properly levelled (side to side and front to rear) at desired depth and speed.  
Then adjust rear accessories to reach desired levelling and finish. They shall be set all the same.

### MAINTENANCE

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

**GRÉGOIRE**  **BESSON**

**49230 MONTFAUCON-MONTIGNÉ-SUR-MOINE  
FRANCE**

**TÉL. (+33) (0)2 41 64 72 67  
FAX (+33) (0)2 41 64 67 73**

**GRÉGOIRE-BESSON UK**

Bourne Road, Carlby - STAMFORD LINCS PE9 4 NG – ENGLAND  
phone (44) 01 778 590 223 - Fax (44) 01 778 590 645

**GRÉGOIRE-BESSON CANADA INC**

4480, Rue Martineau - ST-HYACINTHE (P. Québec) - CANADA J2R 1V1  
TÉL. (1) 450 799 56 15 - FAX (1) 450 799 56 29

**GRÉGOIRE-BESSON POLSKA**

Ul. Obornicka 1a - PL - 64 600 OBORNIKI - Polska  
TEL/FAX : (061) 29 77 530  
gbesson@poczta.onet.pl  
Ruda 12 - PL - 64610 ROGOZNO – TÉL / FAX (48) (67) 261 97 79

**ООО «ГРЕГУАР-БЕССОН ВОСТОК»**

Россия 308018 г. Белгород,  
ул. Корочанская, 132а  
Тел/факс: +7(4722) 58 70 36, 58 70 35  
E-mail: info@gbvostok.ru

法国格力格尔 - 贝松公司北京代表处  
北京市朝阳区延静里中街3号长信大厦220室  
邮编：100025

**WEB : [www.gregoire-besson.fr](http://www.gregoire-besson.fr) E.MAIL : [Contactfr@gregoirebesson.fr](mailto:Contactfr@gregoirebesson.fr)**