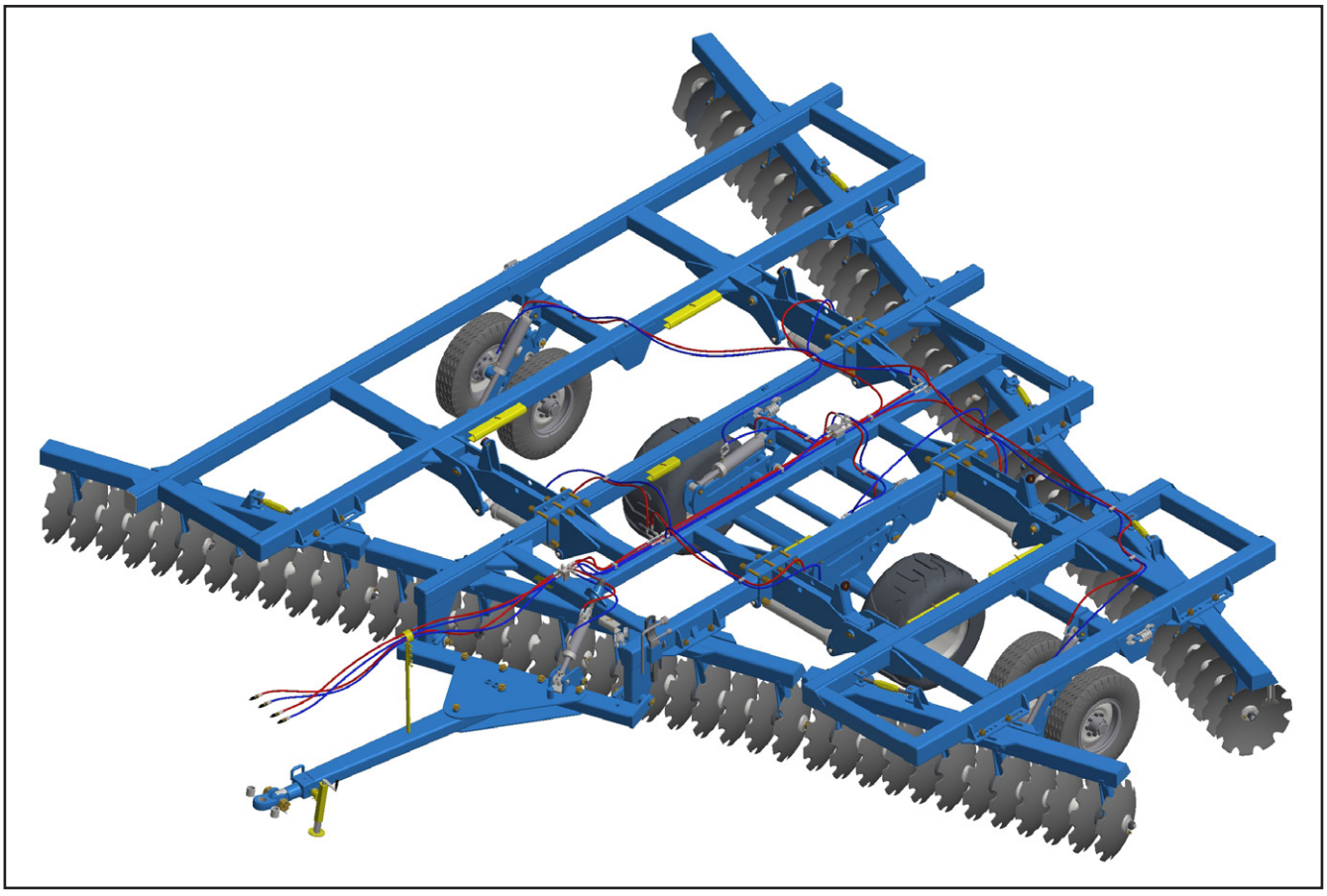
TATU MARCHESAN

OPERATOR'S MANUAL



GCRO 7010

GCRO 7012

IDENTIFICATION

Dealer: _____

Owner: _____

Firm / Farm: _____

City: _____ State: _____

No. of the Certificate of Guarantee: _____

Serial / No.: _____

Date: ____ / ____ / ____ Invoice No.: _____

Product: _____

Notes: _____

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Introduction

The GCRO 7010 and 7012 disk harrows were specially designed for great areas. They are ideal for the initial preparation or for leveling the soil, with excellent application and soil preparation for annual or perennial crops.

Their reinforced and adequate structure are made of folded steel plates joined by a good penetration weld and fine finishing, with resistant parts on the load concentrations.

These disk harrows feature an efficient wheelset system with hydraulic activation to control the depth and for a safe transportation over long distances. This wheelset system also streamlines the maneuvers during the job.

This instructions manual contains the necessary information for the best performance of this disk harrow. The operator must carefully read the entire manual before working with the equipment. Also, read and understand the safety recommendations.

For any further clarification or in the event of technical problems that may arise during the service, consult your dealer and the Technical Support department of the factory. They can ensure the fully functioning of your TATU disk harrow.

TATU
MARCHESAN

Table of contents

To the owner

The acquisition of any TATU product assures to the original purchaser the following rights:

- Warranty certificate;
- Operator's manual;
- Technical assistance by the dealer on equipment delivery.

However, the owner must check the condition of the equipment on delivery, as well as knowing the warranty terms.

Special attention should be given to the safety recommendations, operation precautions and maintenance of the equipment.

The instructions in this manual indicates how to get the best performance and allow the operator to get maximum income, increasing the equipment lifetime.

This manual should be read by operators and maintenance staff.

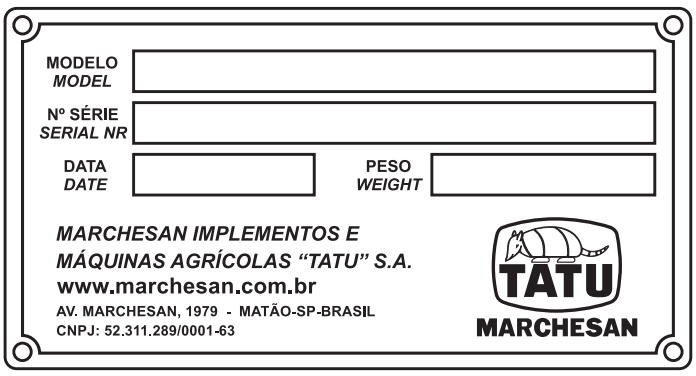
Important

- **Only people who own a full knowledge of the tractor and equipment must operate them;**
- **Marchesan is not responsible for any damage caused by accident on transporting, maintenance, incorrect utilization or inadequate storage, either by negligence and/or lack of experience from any person;**
- **Marchesan is not responsible for any damage caused by unpredictable situations or the incorrect use of the equipment.**

General information

Right and left hand side indication are made observing the equipment from the rear.

To order any parts or request technical assistance services, it is required to provide the data contained on the nameplate, which is located on the equipment frame.



NOTE

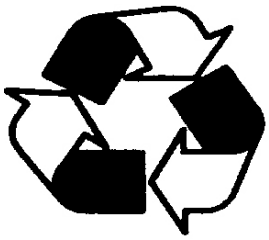
The warranty shall not be applied to any equipment or any part thereof which has been altered elsewhere than at the place of manufacture or which the original purchaser thereof at retail has used or allowed to be used parts, not made or supplied by Marchesan.

To the operator

Be careful with the environment

Dear operator!

Respect the ecology. Do not throw trash away. This gesture of goodwill helps to protect our environment.



Products such as oil, fuel, filters, batteries and others are spilled to the soil and can penetrate to the underground layers, compromising nature. Ecological and conscious disposal of them should be done.

Working safely

- **Security aspects must be carefully observed to avoid accidents.**
- **This symbol is a warning to prevent accidents.**
- **The instructions under this symbol refers to the safety of the operator, mechanician or third parties, therefore it should be carefully read and observed. If the safety instructions are not being followed, a serious accident or even death may occur.**

This disk harrow is simple to operate, requiring however the basic and essential cautions to its handling.

Always keep in mind that safety requires constant attention, observation and prudence during the harrowing, transportation, maintenance and storage.

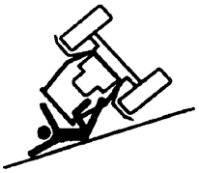
Read and understand the information before making any adjustment or maintenance.

Have extreme caution when operating with the power take-off (PTO). Do not get closer during operation.

To the operator

Never use your bare hands to check hydraulic leaks, the high pressure can cause several injuries.

Never attempt to change the adjustments, clean or lubricate the equipment when the same is switched on or in movement.



Be careful while driving on slopes. Risk of overturn.

Prevent that chemical products (i.e.: fertilizers, treated seeds) make any contact with your skin or clothes.

Keep access and work places clean and free from oil and grease. Risk of accidents.

Never transport the equipment on highways or paved roads. Avoid that the tractor wheels touch the drawbar in sharp turns.

The presence of any other people on the tractor or equipment is stricly forbidden.

Have extreme caution when driving under electrical power lines. Any contact may result in severe shocks, injuries or death.

For your protection and safety, always wear adequate clothes and footwear while operating the equipment.

Always use the safety locks to carry out maintenance operations and to transport the equipment.

To the operator

- Only trained and qualified personnel are allowed to operate the equipment.
- While working or during transportation, only the presence of the operator is allowed on the tractor.
- Do not allow children to play near or over the equipment, while it is operating, during transportation or storage.
- Have full knowledge of the soil before starting to work. Use the speed which is suitable to the conditions of the ground or pathways to be covered. Provide the delineation of obstacles or hazardous locations.
- Use personal protective equipment (PPE).
- Wear appropriate clothes and footwear. Avoid clothes that are either loose or hanging from the body, which may become entangled in moving parts.
- Never operate the equipment without its **protective devices**.
- Be careful while hitching the tractor to the equipment.
- Wear appropriate gloves to work near the disc blades.
- When setting the equipment to transport position, check if there are people or animals close or under the equipment.
- Never attempt to adjust, clean or lubricate the equipment while it is moving.
- In case of emergency, know how to stop the tractor and equipment quickly.
- Always shut down the engine, remove the key and use the handbrake before leaving the tractor seat.
- Be sure that the tractor has enough power to pull the disk harrow.
- Carefully check the transport width on narrow locations.
- Do not drive the equipment under the influence of alcohol or any soothing/ stimulating medicine, as it may result in a serious accident.
- In case of a fire outbreak or any possible hazard, the operator must leave the area as fast as possible and look for a safe place. Always have emergency numbers at hands.
- Do not allow people or animals to get under the equipment at any time.
- Whenever you unhitch the equipment, either in the field or shed, do it on a flat and firm surface and use the parking jacks. Make sure the equipment is properly supported.
- We suggest that you carefully read the manual, as it will be a guide for periodic verifications that need to be done and will allow that you assure the maintenance of your equipment.
- If there is any doubt after reading it, ask your dealer. For more complicated operations, there will be the right person to help you there.
- Please check the general safety instructions on the back cover of this manual.

Transportation over truck or trailer

Marchesan does not advise the equipment traffic on highways, because this practice involves serious security risks in addition to being prohibited by the current existing traffic law. The transportation for long distances should be done on truck, trailer or others by following these safety guidelines:

- Use adequate ramps to load or unload the equipment. Do not make the loading on ditch banks, it can cause a serious accident.
- When lifting with a hoist, use the appropriate points to lift.
- Underpin the equipment appropriately.
- Fasten the moving parts that may get loose and cause accidents.
- Use chock blocks and safety chains to secure the equipment to the truck or trailer during the transport.
- Make sure the SMV (Slow Moving Vehicle) sign, and all the lights and reflectors that are required by the local highway and transport autorithies are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.
- After 8 to 10 km transporting, please inspect the load condition. Repeat this procedure every 80 to 100 km. Give more attention when transporting the equipment on rough roads, slopes and other adverse conditions.
- Always be careful with the load height, especially when passing under electrical power lines, bridges and others.
- Check all laws and regulations regarding the height limits and load width while transporting the equipment on truck or trailer. If necessary use banners, lights and other devices in order to give adequate warning to the other drivers.

Safety decals

The safety decals warn about the equipment points that require more attention and they should be kept in good repair. If these decals become damaged or illegible, replace them. Marchesan provide decals, upon request and indication of the respective serial numbers.

ADVERTÊNCIA / WARNING / ADVERTENCIA

Para evitar acidentes, instale as travas dos cilindros antes do transporte ou antes de efetuar serviços no equipamento.

In order to avoid accidents activate cylinder locks before transportation or carrying out any service on the equipment.

Para evitar accidentes, instale las trabas de los cilindros antes del transporte o antes de efectuar trabajos en el equipo.

05.03.03.1738

PERIGO / DANGER / PELIGRO

05.03.03.1896

Para evitar acidentes, fique longe do equipamento quando o mesmo estiver articulando ou desarticulando.
Falhas mecânicas ou hidráulicas podem fazer com que o equipamento abaixe rapidamente.

In order to avoid accidents, keep away from the equipment when the same is folding or unfolding.
Mechanical or hydraulic failure can make the equipment to fall down quickly.

Para evitar accidentes, quede lejos del equipo cuando el mismo esté articulando o desarticulando.
Fallas mecánicas o hidráulicas pueden hacer con que el equipo baje rapidamente.

LUBRIFICAR E REAPERTAR DIARIAMENTE
LUBRICATE AND TIGHTEN DAILY
LUBRICAR Y REAPRETAR DIARIAMENTE

05.03.03.1827

Model	Serial number	Serial number
GCRO 7010	**GCRO 7010 decal 05.03.03.3943**	**TATU logotype 05.03.03.3933**
GCRO 7012	**GCRO 7012 decal 05.03.03.3944**	

GCRO 7010

Model: ..... **GCRO 7010**
Spacing between disc blades: ..... 270 mm
Disc blades dimension: ..... Ø 26" x 6 mm
..... Ø 26" x 7.5 mm
..... Ø 28" x 7.5 mm
..... Ø 30" x 7.5 mm
Disc blade type: ..... Concave notched and/or concave plain
Bearings - Length: ..... 262 mm
- Type: ..... Oil bath bearing
Spacer spools - Length: ..... 263 mm
- Type: ..... Iron cast
Axle diameter: ..... Ø 41.3 mm (1.5/8"), Ø 44.45 mm (1.3/4") or Ø 54 mm (2.1/8")
Hitching type: ..... Drawbar
Tires: ..... Check 'tires inflation' page
Working speed: ..... 5 - 7 km/h

Model	Number of disc blades	Cutting width (mm)	Net weight (kg)	Tractor required (cv)
GCRO 7010 Non folding	28	3,620	4,880	230 - 240
	32	4,120	5,180	240 - 250
	36	4,625	5,430	250 - 260
	40	5,135	5,500	260 - 270
	44	5,645	6,155	270 - 280
	48	6,150	6,440	280 - 300
GCRO 7010 Folding wings	44	5,530	6,645	290 - 300
	48	6,160	7,820	300 - 320
	52	6,.730	8,180	320 - 340
	56	7,240	8,405	340 - 360
	60	7,772	9,420	360 - 380
GCRO 7010 Lateral frames	72	9,540	14,120	420 - 450
	76	10,065	14,325	450 - 480
	80	10,445	14,755	480 - 510

NOTE **• The weights above were obtained using Ø 28" x 7.5 mm disc blades.**

Data sheet

GCRO 7012

Model: ..... **GCRO 7012**

Spacing between disc blades (mm): 300

Disc blades dimension: ..... Ø 30" x 7.5 mm

..... Ø 32" x 7.5 mm

..... Ø 32" x 9 mm

Disc blade type: .....Concave notched and/or concave plain

Bearings - Length: .....292 mm

- Type: .....Oil bath bearing

Spacer spools - Length: .....292 mm

- Type: .....Iron cast

Axle diameter: .....Ø 41.3 mm (1.5/8") or Ø 54 mm (2.1/8")

Hitching type: ..... Drawbar

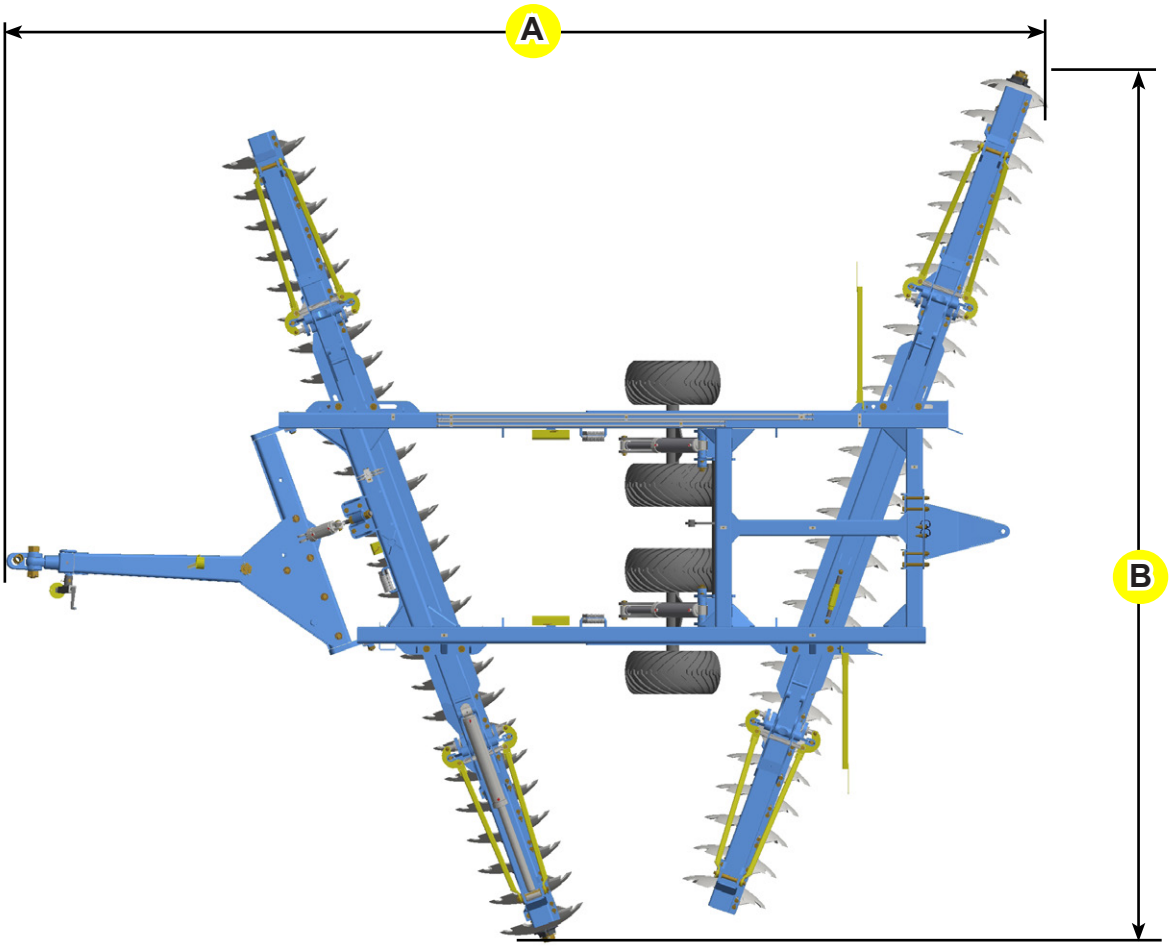
Tires: .....Check 'tires inflation' page

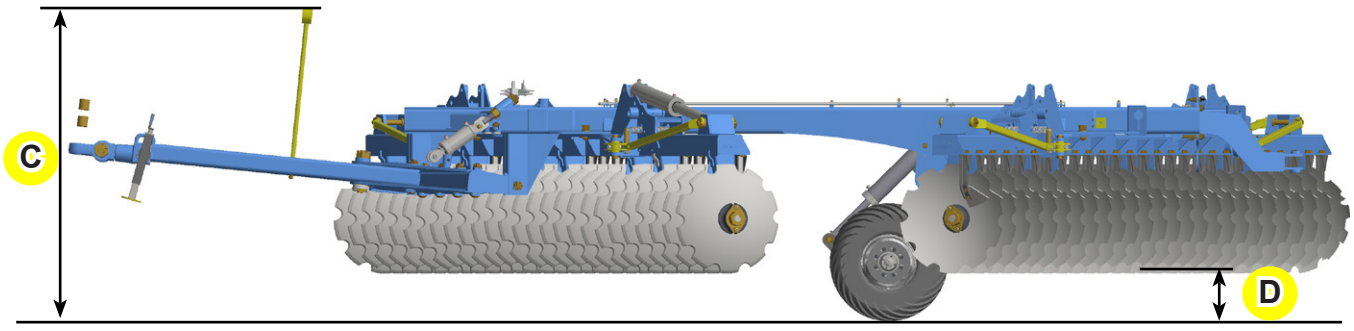
Working speed: .....5 - 7 km/h

Model	Number of disc blades	Cutting width (mm)	Net weight (Kg)	Tractor required (cv)
GCRO 7012 Non folding	28	3,985	5,800	250 - 270
	32	4,555	6,705	270 - 290
	36	5,115	6,905	290 - 310
	40	5,665	7,560	310 - 330
	44	6,225	8,100	330 - 350
	48	6,785	8,450	350 - 370
GCRO 7012 Folding wings	50	7,080	9,430	420 - 450
	52	7,380	9,695	450 - 480
	56	7,940	10,020	480 - 510

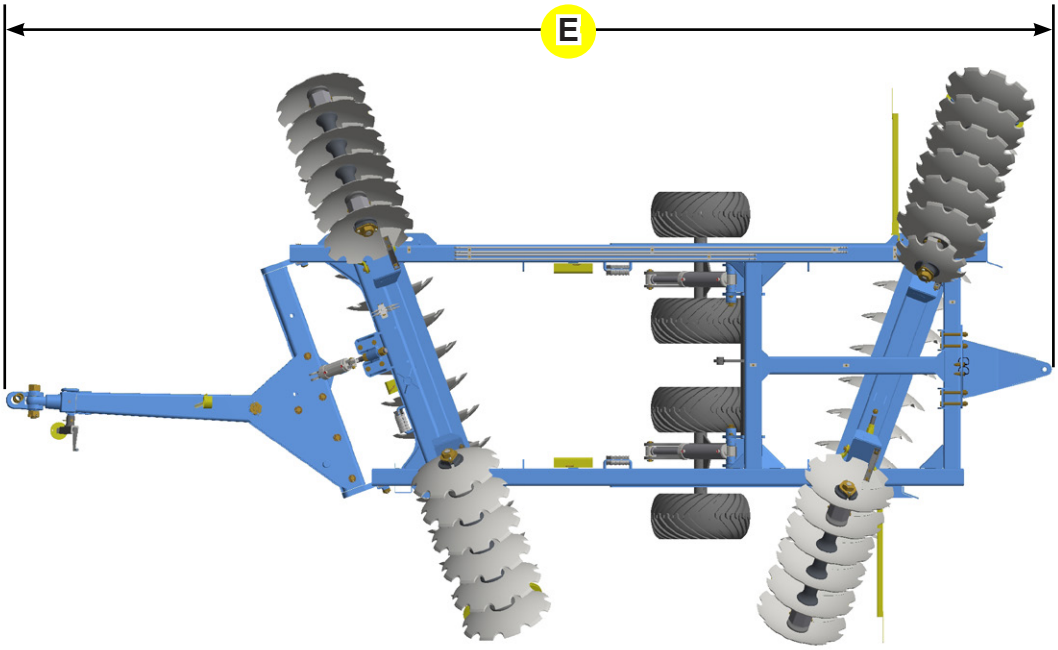
NOTE **• The weights above were obtained using Ø 32" x 9 mm disc blades.**

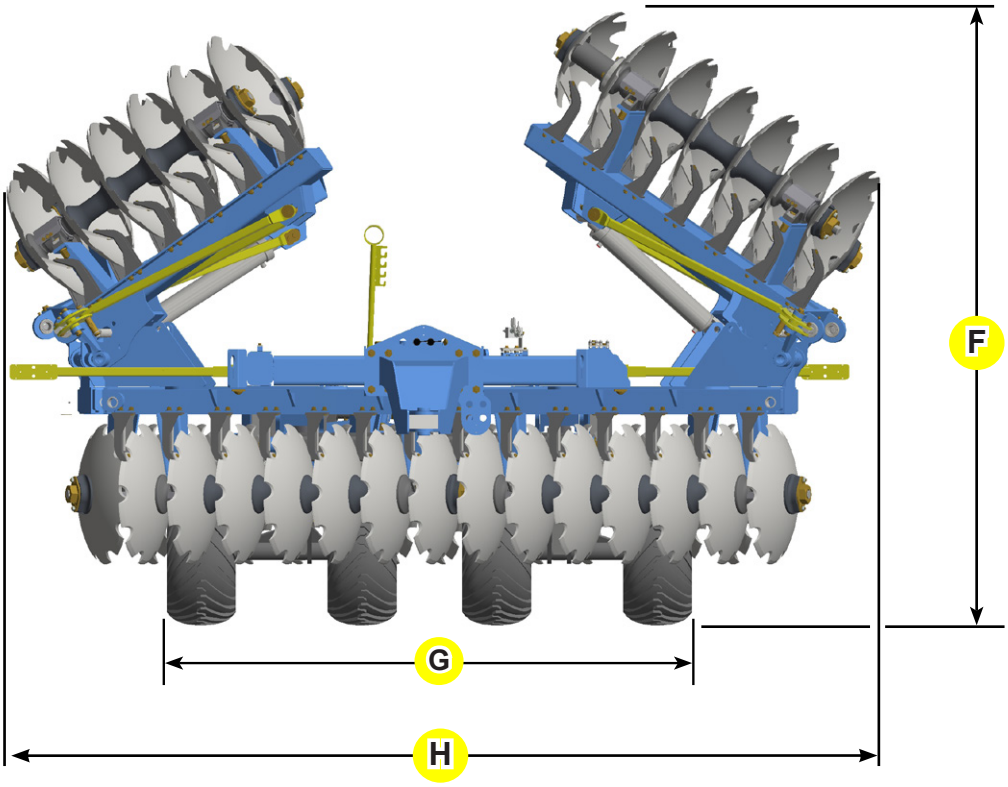
General dimensions





General dimensions





NOTE

- * For these models, there are two versions that feature the measures below:
- Disk harrow with 52 disc blades - Height (F): 3435 or 3640;
- Disk harrow with 56 disc blades - Width (H): 4400 or 4855.

General dimensions

Model	Number of disc blades	Dimensions							
		A	B	C	D	E	F	G	H
GCRO 7010	28	8630	4870	2020	430	----	----	2790	----
	32	8630	4870	2020	430	----	----	2790	----
	36	8630	5060	2020	430	----	----	2790	----
	40	8670	5390	2020	430	----	----	2790	----
	44	8670	5955	2020	430	----	----	3050	----
	44D	9345	5820	2020	430	8760	3440	2470	3550
	48	8690	6480	2020	430	----	----	3050	----
	48D	9390	6520	2020	430	9310	3510	3050	3465
	52	9480	7025	2020	430	9325	3660	3050	4340
	56	9555	7535	2020	430	9290	3830	3050	4325
	60	9640	8120	2020	430	9325	3750	3050	4675
	72	10720	9650	2115	465	10775	4505	3550	6245
	76	10840	10175	2115	465	10860	4790	3550	6310
	80	11025	10860	2230	500	11025	5030	3550	6385

Model	Number of disc blades	Dimensions							
		A	B	C	D*	E	F	G	H
GCRO 7012	28	8635	4870	2000	330	----	----	3050	----
	32	8630	5025	2050	375	----	----	3050	----
	36	9305	5600	2050	375	----	----	3050	----
	40	9300	6155	2050	375	----	----	3050	----
	44	9410	6705	2050	375	----	----	3050	----
	48	9500	7270	2050	375	----	----	3050	----
	50	9580	7600	2050	375	9315	3565	3050	4865
	52	9615	7865	2050	375	9305	3570	3050	5390
	56	9725	8435	2050	375	9305	3750	3050	5125

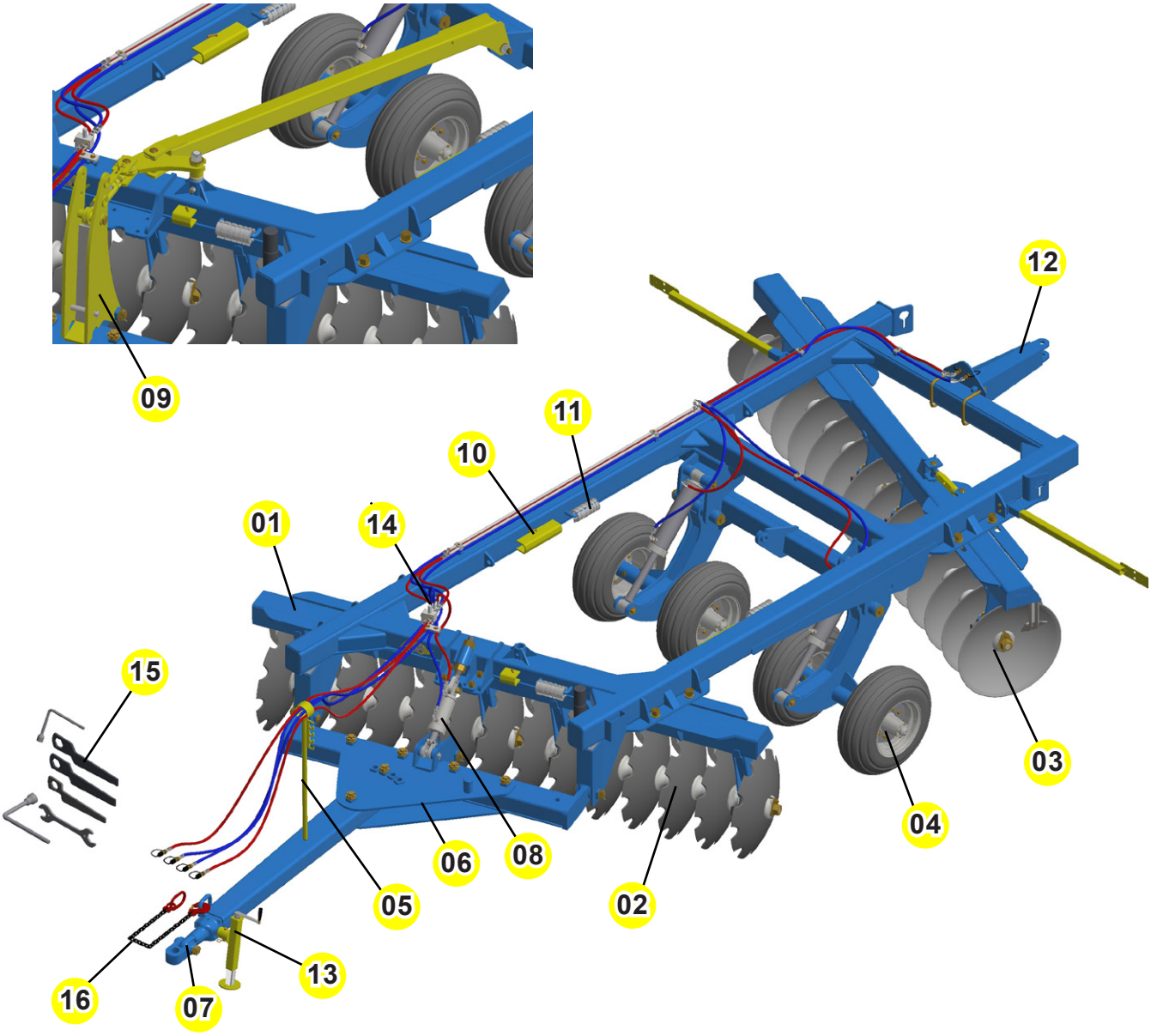
NOTE

- **The "B" measure corresponds to the TOTAL WIDTH of the disk harrow (being the disc blades lowered for the folding wings type).**
- **The measures are approximated values.**
- **Disk harrow 28, 32, 36, 40, 44 and 48 - Non folding wings.**
- **Disk harrow 44D, 48D, 50, 52, 56 and 60 - Folding wings.**
- **Disk harrow 72, 76 and 80 - Lateral frames.**

Components

GCRO 7010 / 7012 - Non folding wings

01 - Frame
02 - Front disc gang
03 - Rear disc gang
04 - Wheelset system
05 - Hose support
06 - Drawbar
07 - Tractor hitch
08 - Leveling system - Hydraulic (Optional)
09 - Leveling system - Mechanical
10 - Transport lock
11 - Cylinder stops
12 - Rear hitch (Optional)
13 - Parking jack
14 - Hydraulic system
15 - Wrenches
16 - Safety chain



GCRO 7010 / 7012 - Folding wings

01 - Frame
02 - Front disc gang
03 - Rear disc gang
04 - Wheelset system
05 - Hose support
06 - Drawbar
07 - Tractor hitch
08 - Leveling system - Mechanical
09 - Leveling system - Hydraulic (Optional)
10 - Transport lock
11 - Cylinder stops
12 - Rear hitch (Optional)
13 - Parking jack
14 - Hydraulic system
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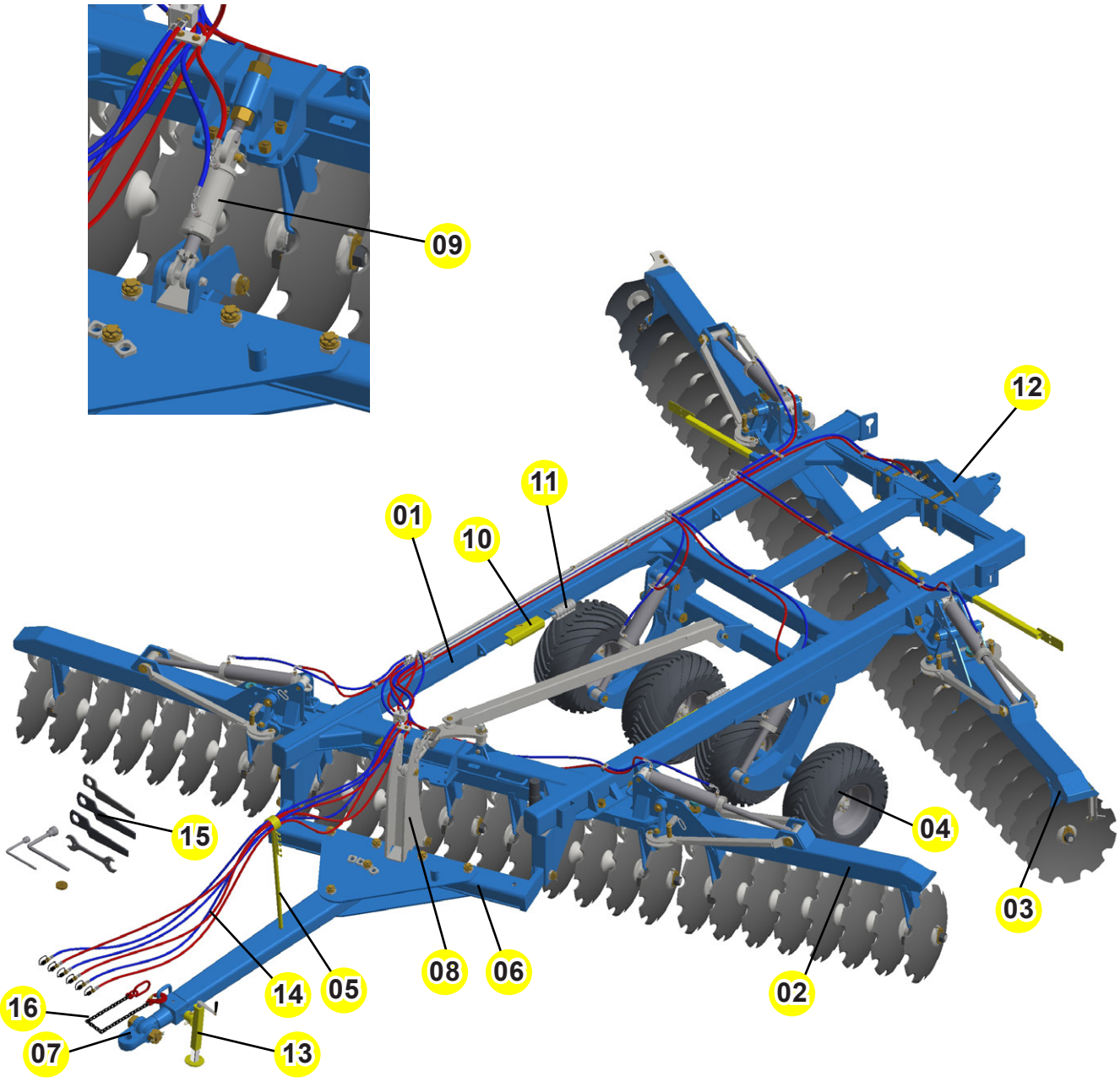
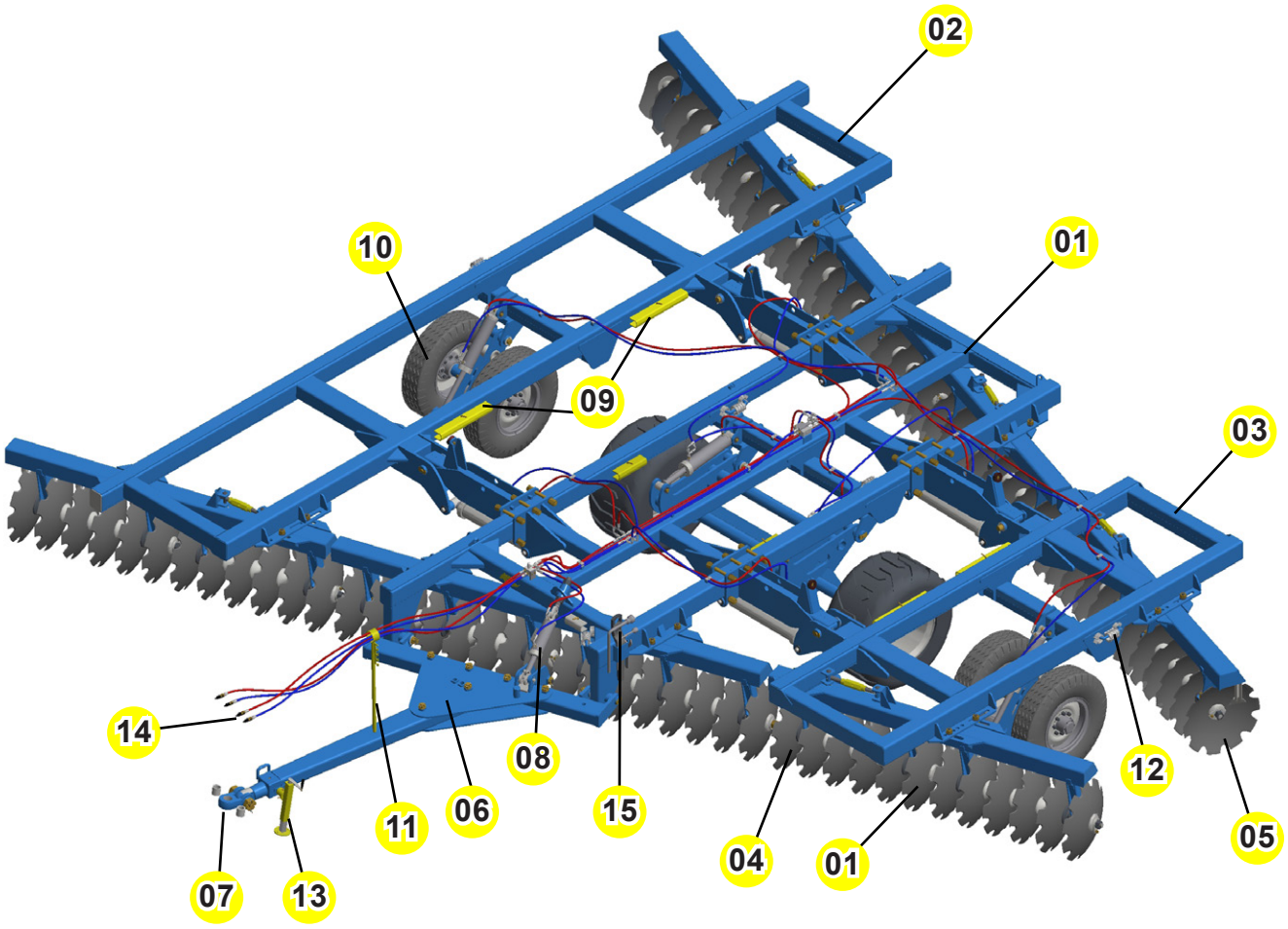


GCRO 7010 - Folding frame

01 - Central frame
02 - Right lateral frame
03 - Left lateral frame
04 - Front disc gang
05 - Rear disc gang
06 - Drawbar
07 - Tractor hitch
08 - Leveling system - Hydraulic
09 - Transport lock
10 - Wheelset system
11 - Hose support
12 - Cylinder stops
13 - Parking jack
14 - Hydraulic system
15 - Wrenches



Assembly

First of all, put the parts in a clean place to identify them easier. Check the parts using the list that comes inside the packing box.

Using the set of wrenches

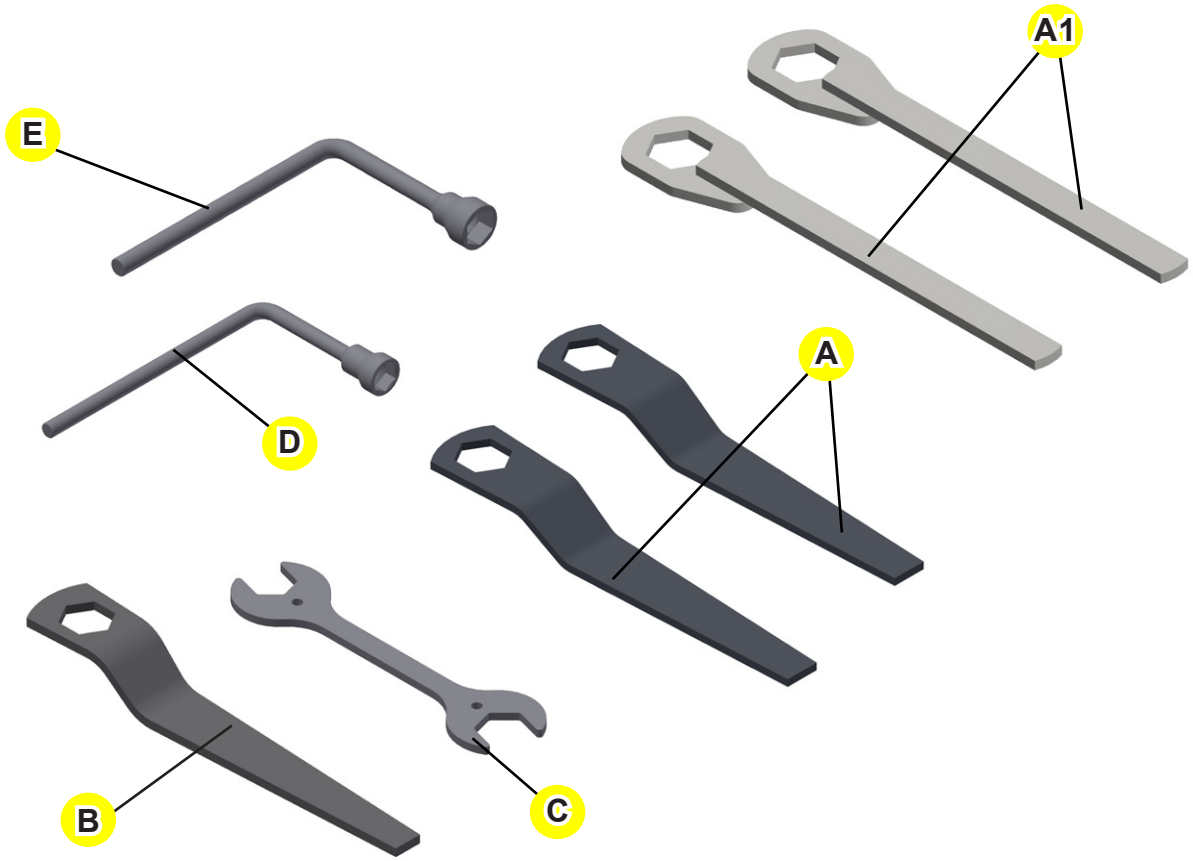
• Use two box-end wrenches (A and A1) to tighten the nuts of the disc gangs, one to hold the axle nut on one side while the other tight the nut to the other end, thereby preventing the axle from rotating.

• Use the box-end wrench (B) to tighten the nuts from the traction set.

• Use the open-end wrench (C) to adjust the nut on the rear stabilizer.

• Use the L-type socket wrench (D) to tighten the nuts on the disc gangs.

• Use the L-type socket wrench (E) to tighten the nuts on the bearing bolts.



NOTE

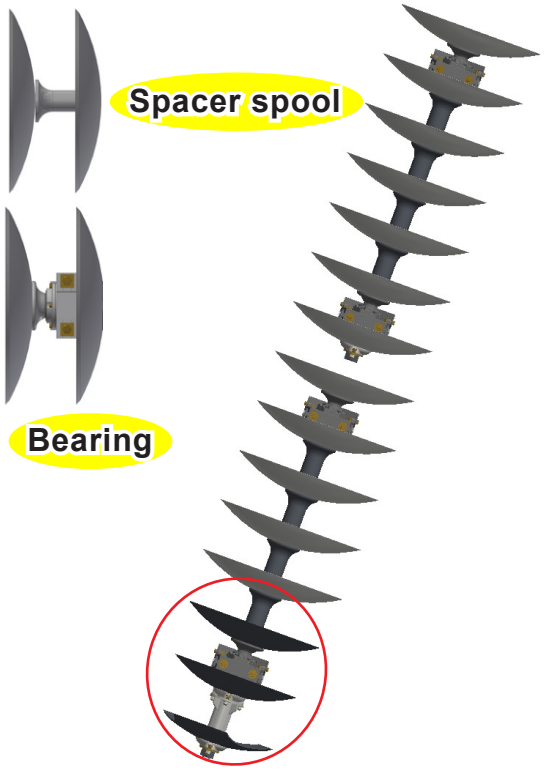
• We recommend wearing gloves, especially while assembling the disc gangs.

• The wrenches (A1) are used on 2.1/8" axles.

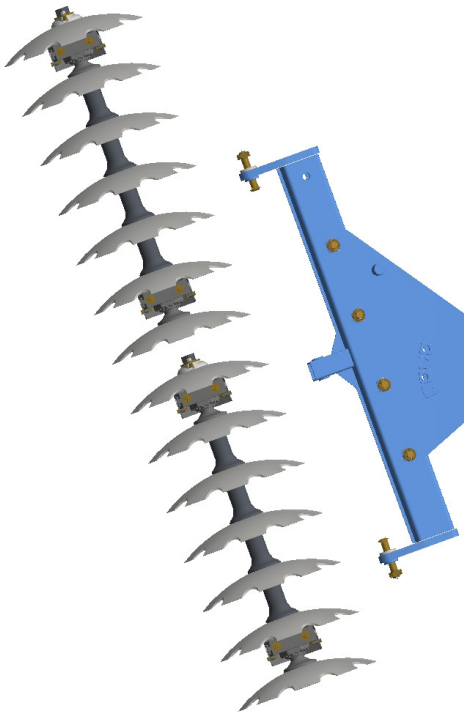
Disc gangs assembly

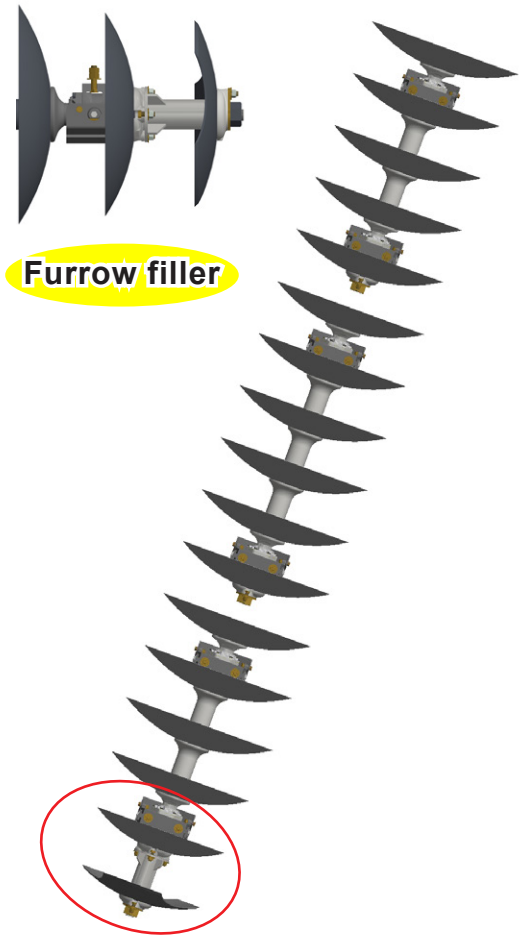
Before starting to assemble the disc gangs, check the correct position of the bearings and spacer spools.

Assembly of bearings and spacer spools (GCRO 28 - 60)

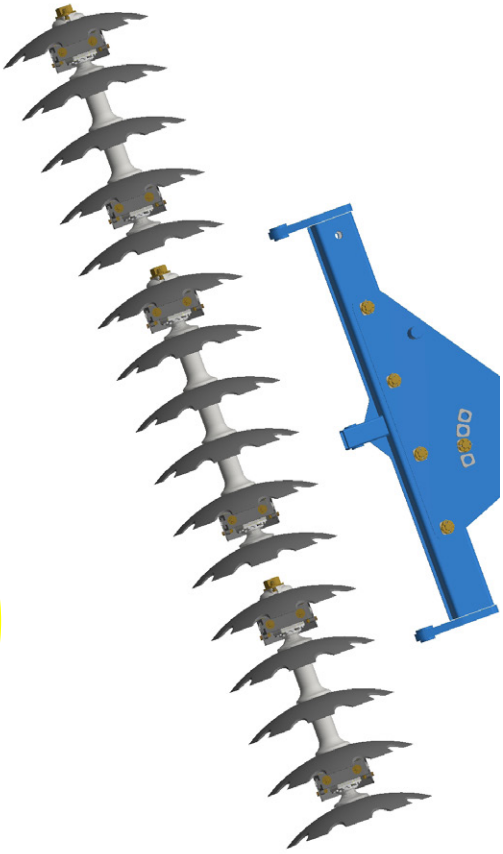


GCRO 7010
(Ø1.5/8" axle)
GCRO 7012
(Ø2.1/8" axle)
28 disc blades,
8 bearings
16 spacer spools
1 furrow filler

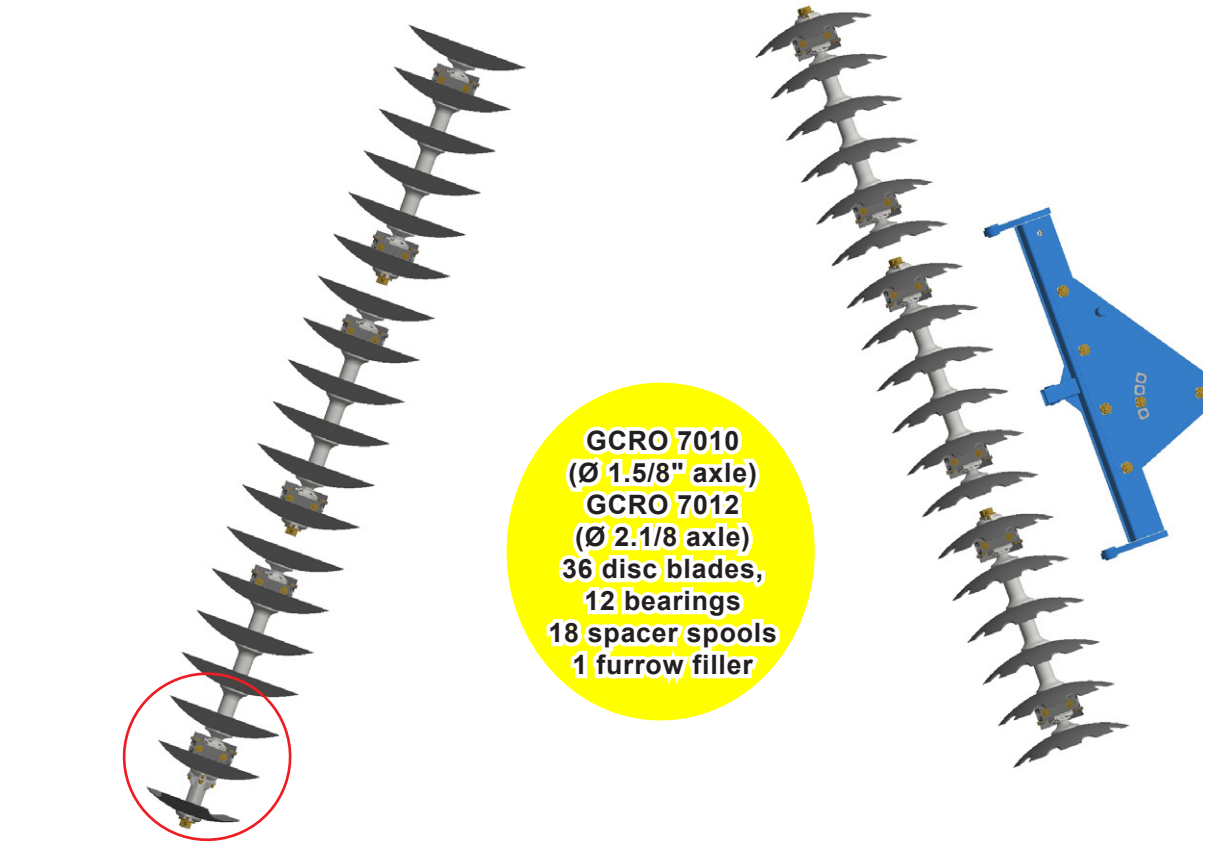




GCRO 7010
(Ø 1.5/8" axle)
GCRO 7012
(Ø 2.1/8" axle)
32 disc blades
12 bearings
14 spacer spools
1 furrow filler



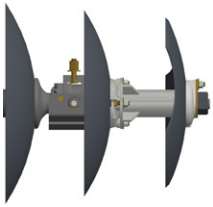
Assembly of bearings and spacer spools (GCRO 28 - 60)



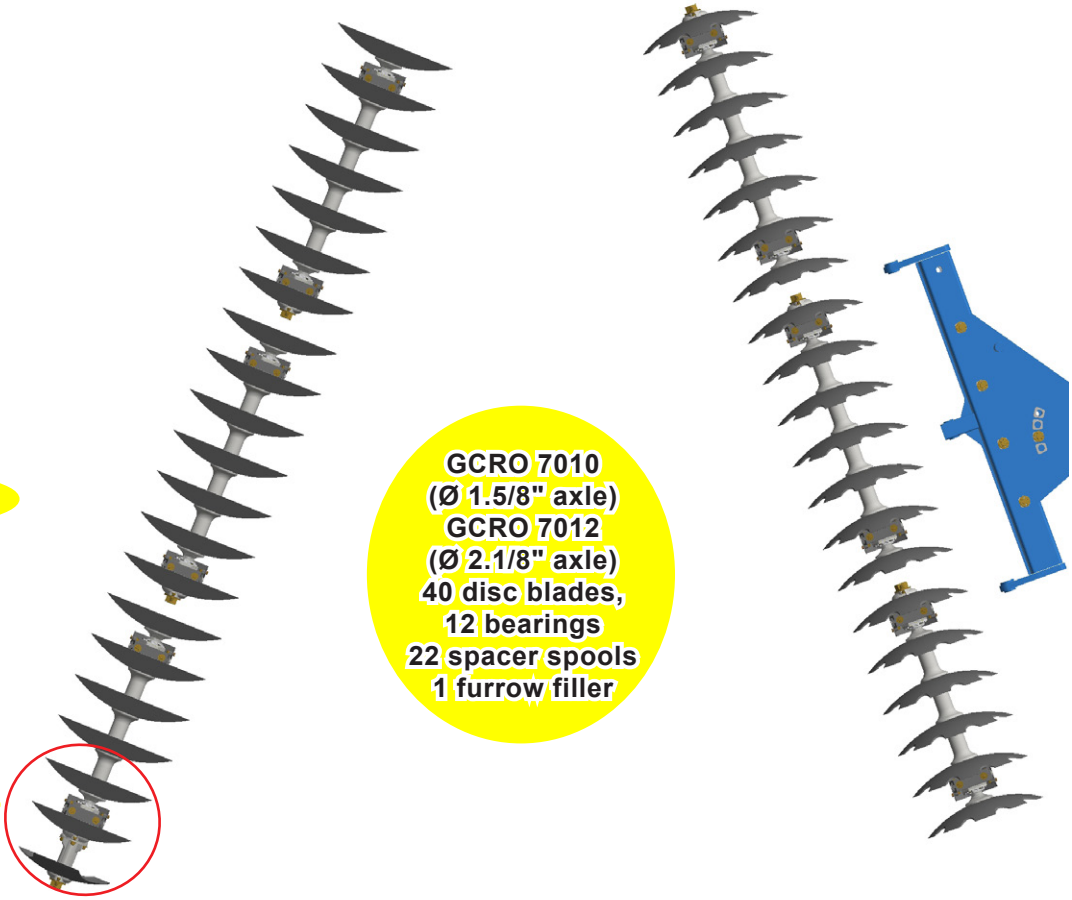
GCRO 7010
(Ø 1.5/8" axle)
GCRO 7012
(Ø 2.1/8 axle)
36 disc blades,
12 bearings
18 spacer spools
1 furrow filler

Bearing

Spacer spool

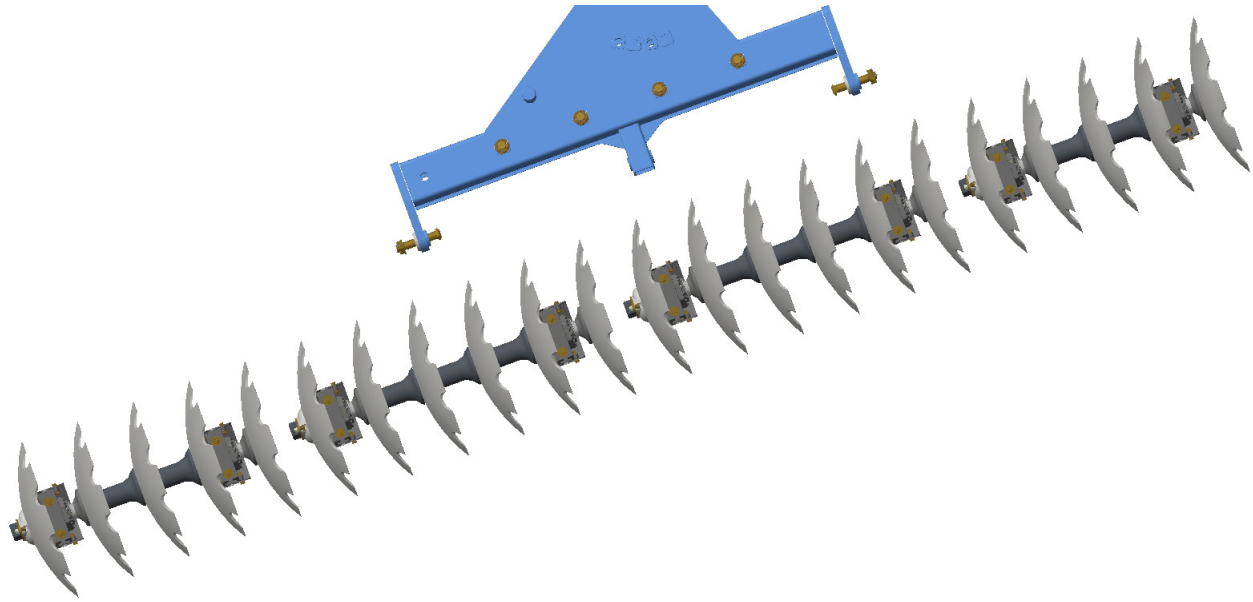


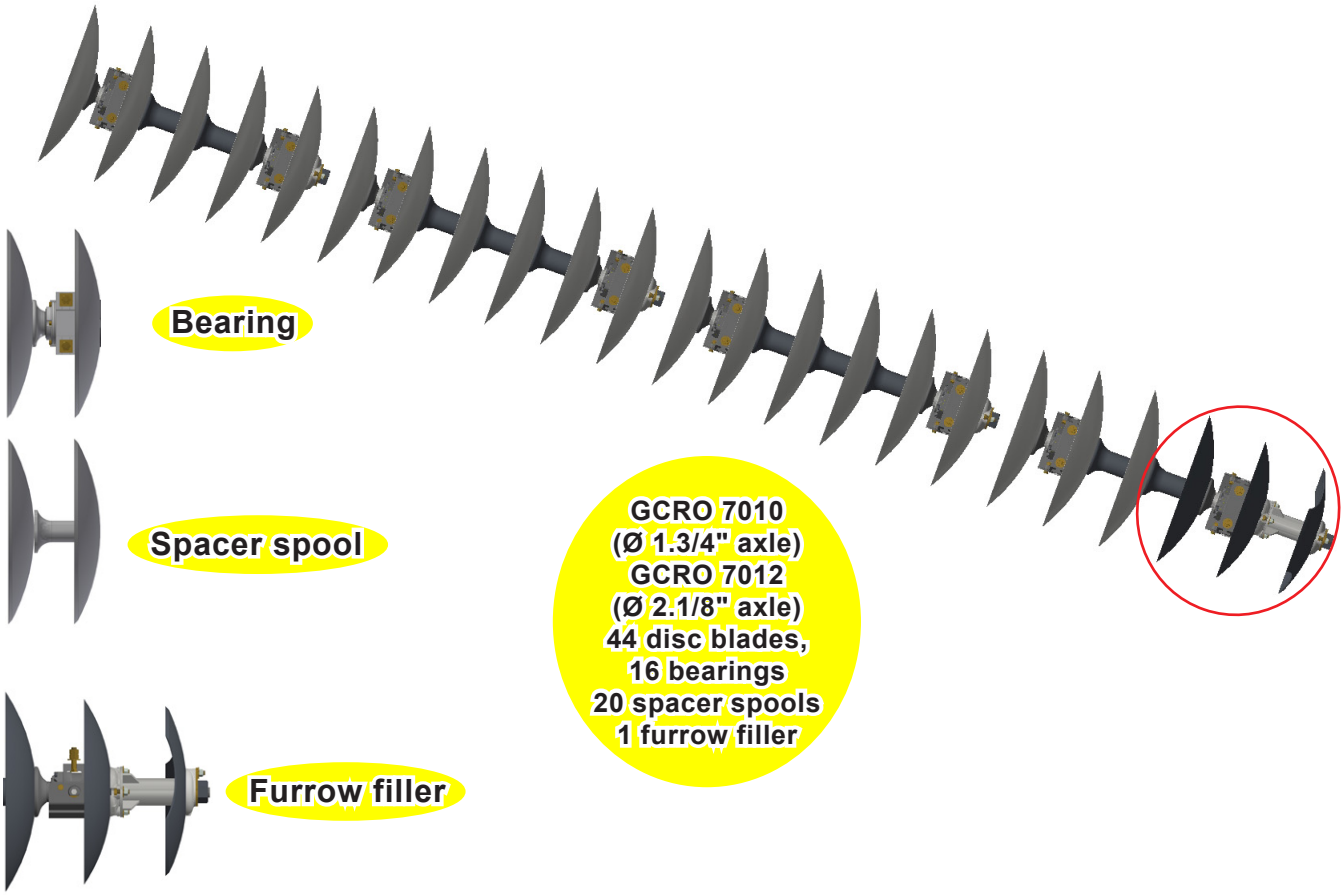
Furrow filler



GCRO 7010
(Ø 1.5/8" axle)
GCRO 7012
(Ø 2.1/8" axle)
40 disc blades,
12 bearings
22 spacer spools
1 furrow filler

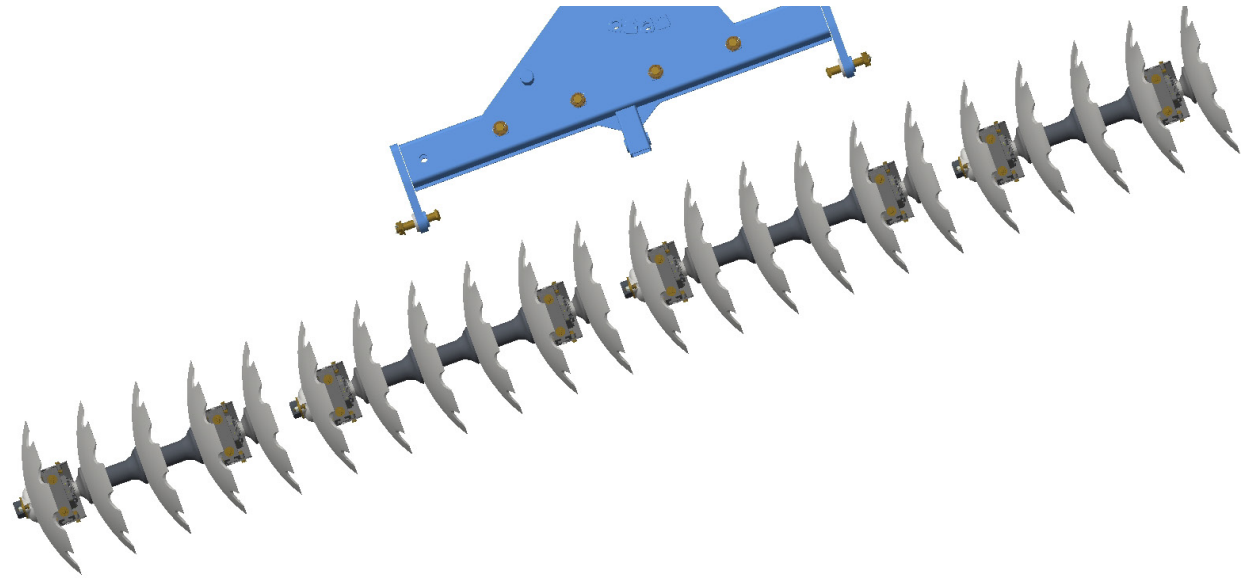
Assembly of bearings and spacer spools (GCRO 28 - 60)

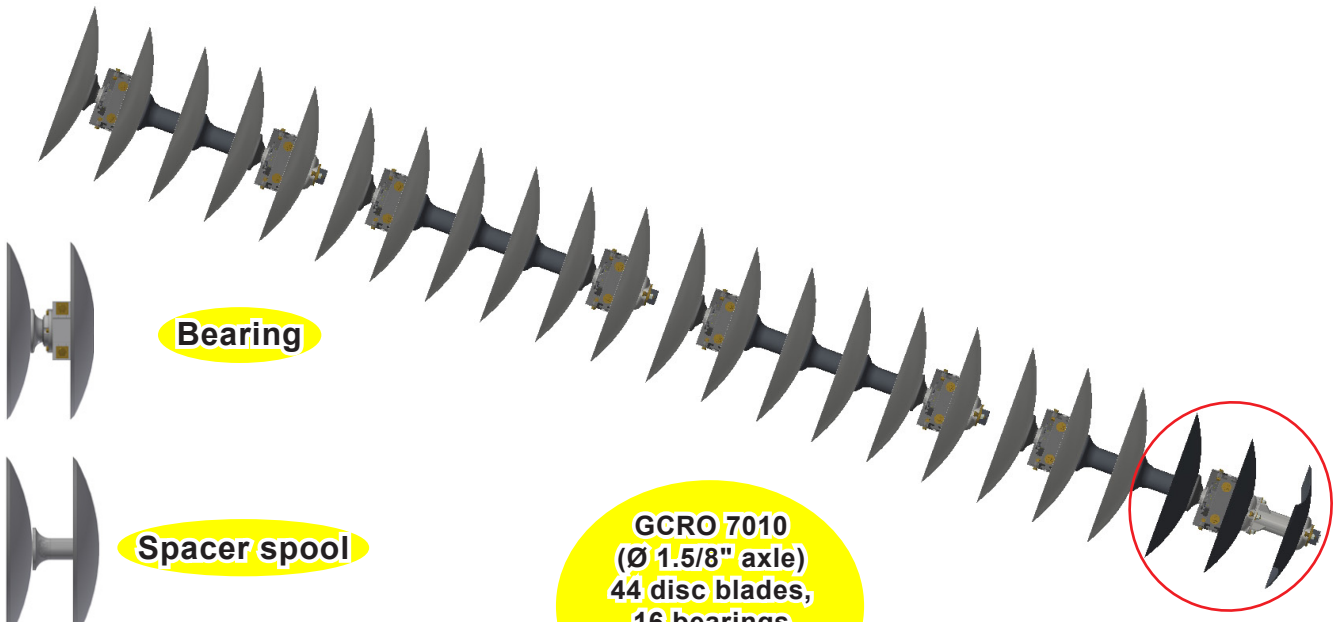




Assembly of bearings and spacer spools (GCRO 28 - 60)

Assembly of bearings and spacer spools (GCRO 28 - 60)

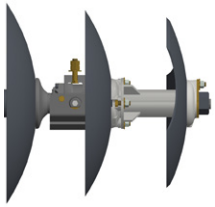




Bearing

Spacer spool

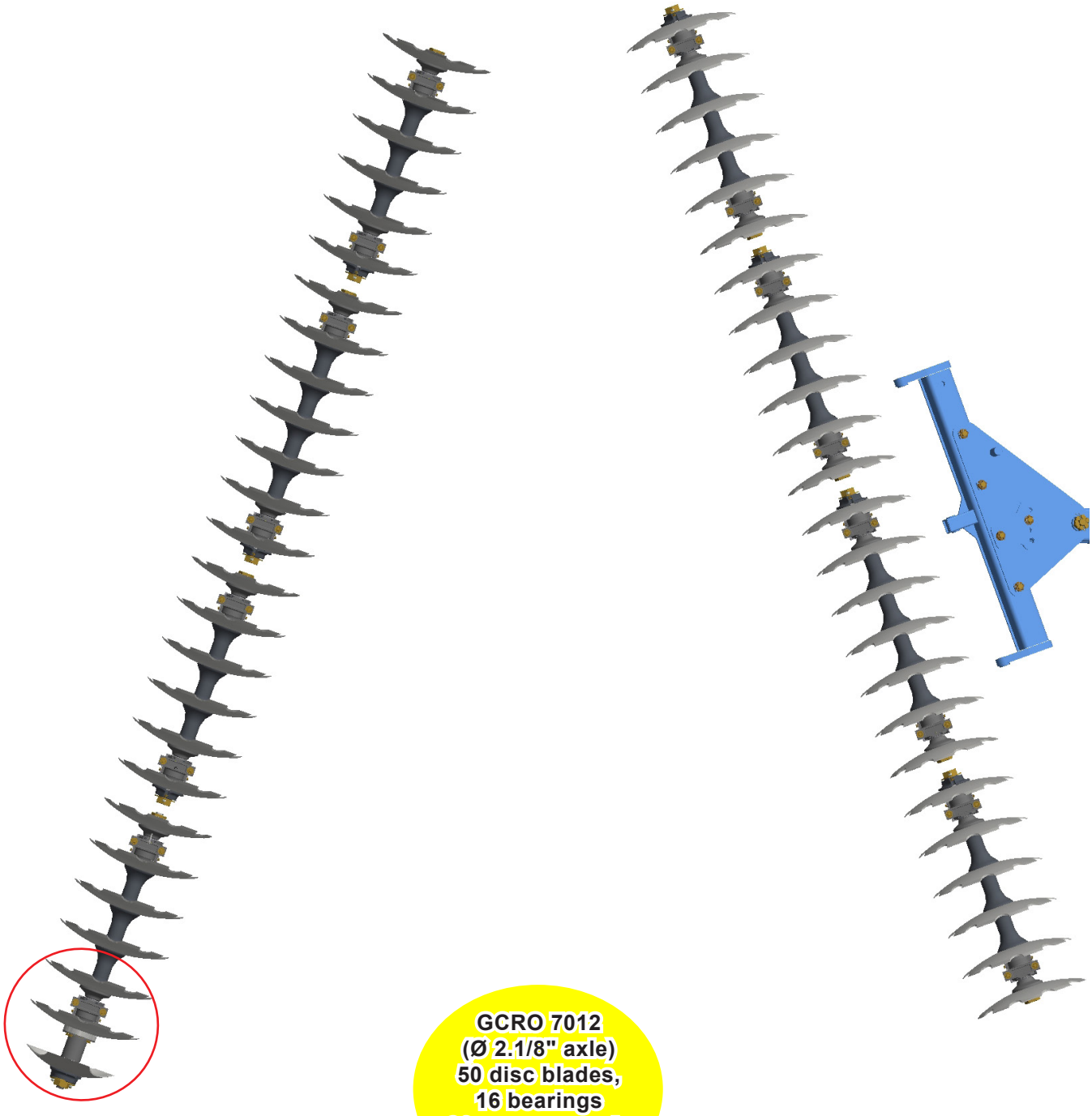
GCRO 7010
(Ø 1.5/8" axle)
44 disc blades,
16 bearings
20 spacer spools
1 furrow filler



Furrow filler

Assembly of bearings and spacer spools (GCRO 28 - 60)

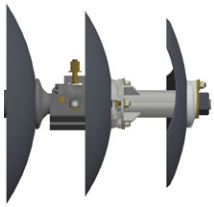
Assembly of bearings and spacer spools (GCRO 28 - 60)



GCRO 7012
(Ø 2.1/8" axle)
50 disc blades,
16 bearings
26 spacer spools
1 furrow filler

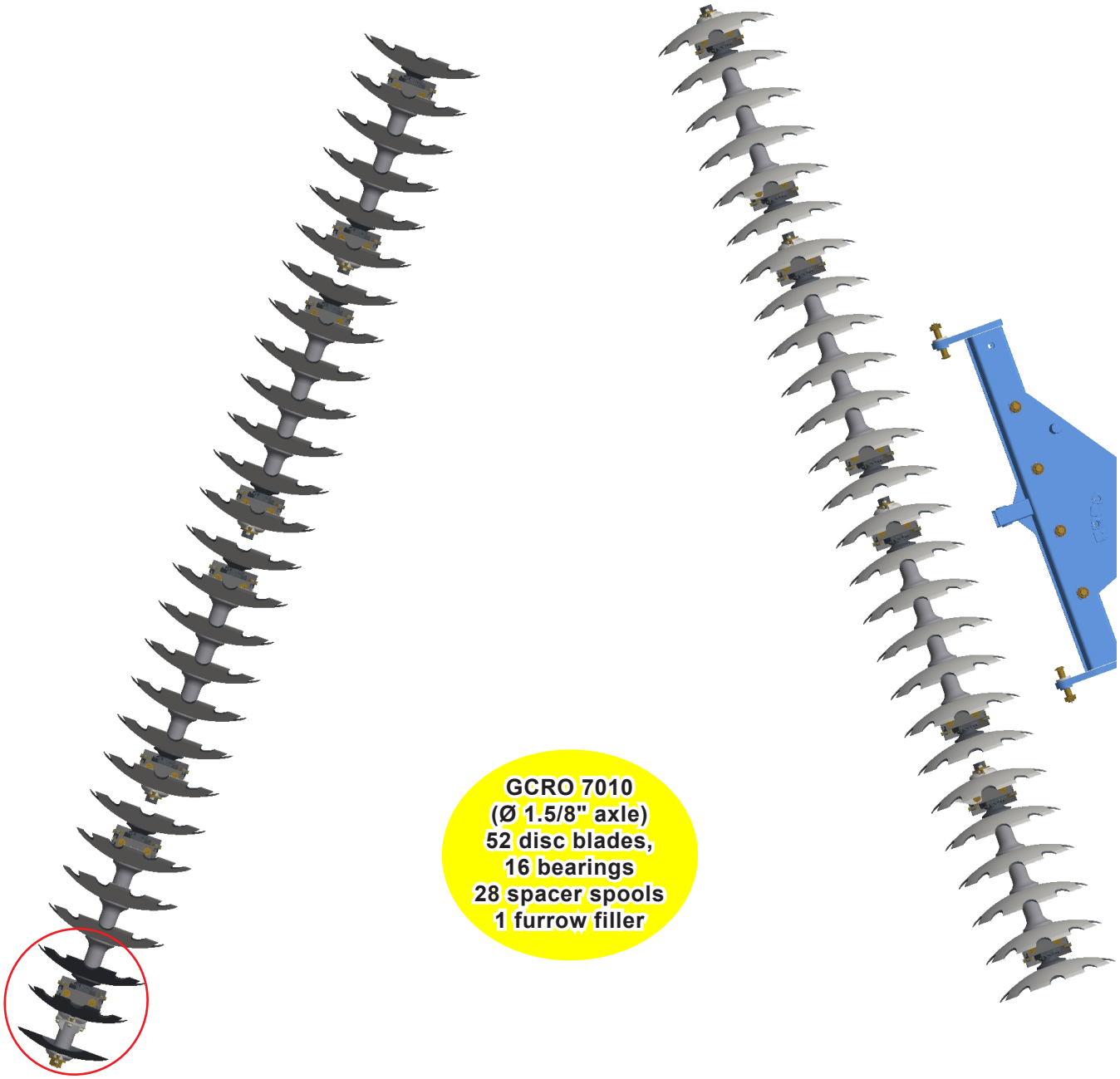
Bearing

Spacer spool

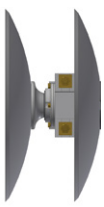


Furrow filler

Assembly of bearings and spacer spools (GCRO 28 - 60)

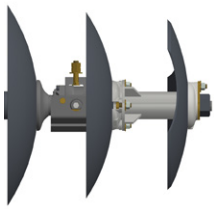


GCRO 7010
(Ø 1.5/8" axle)
52 disc blades,
16 bearings
28 spacer spools
1 furrow filler



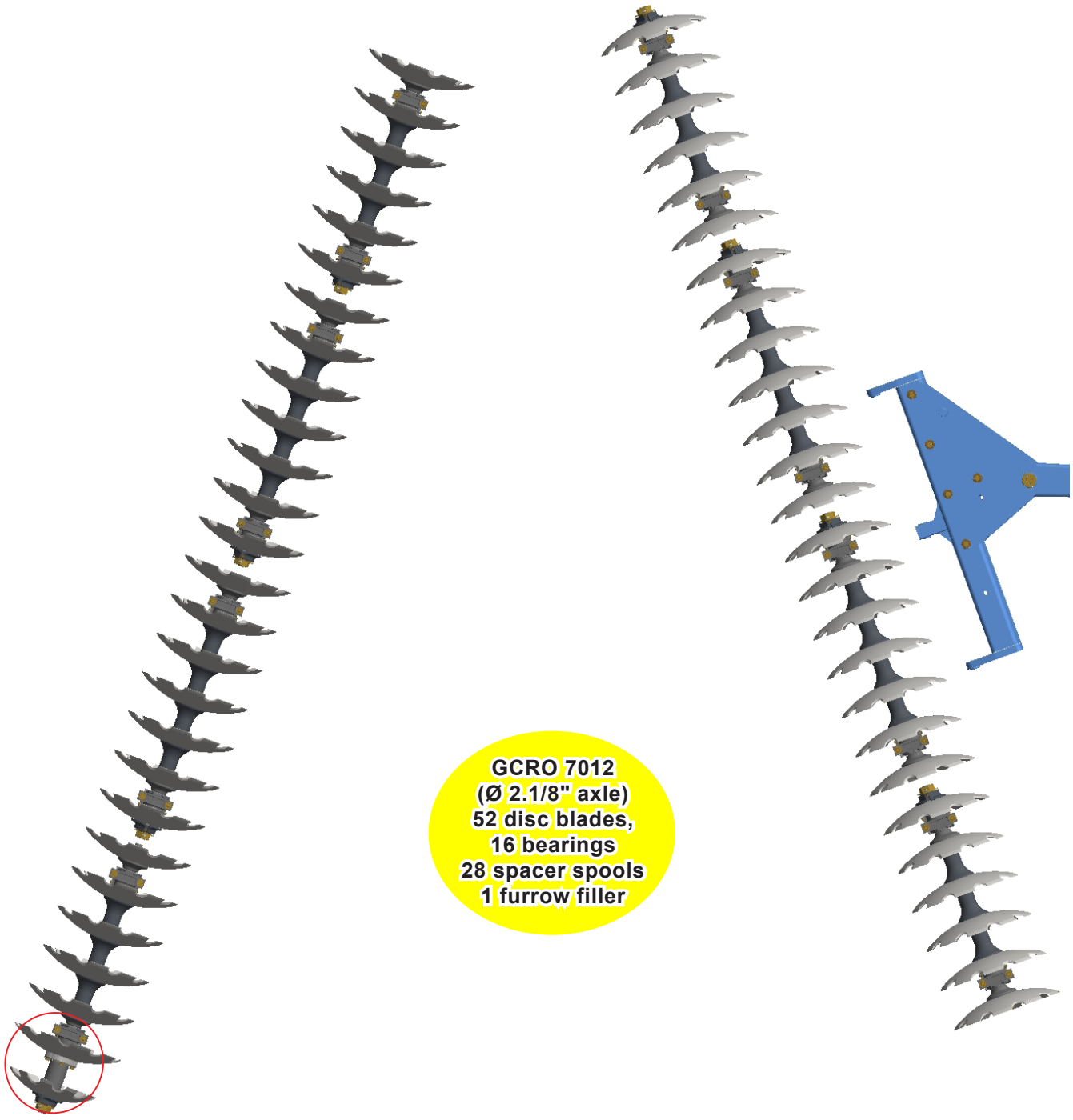
Bearing

Spacer spool



Furrow filler

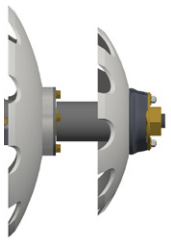
Assembly of bearings and spacer spools (GCRO 28 - 60)



GCRO 7012
(Ø 2.1/8" axle)
52 disc blades,
16 bearings
28 spacer spools
1 furrow filler

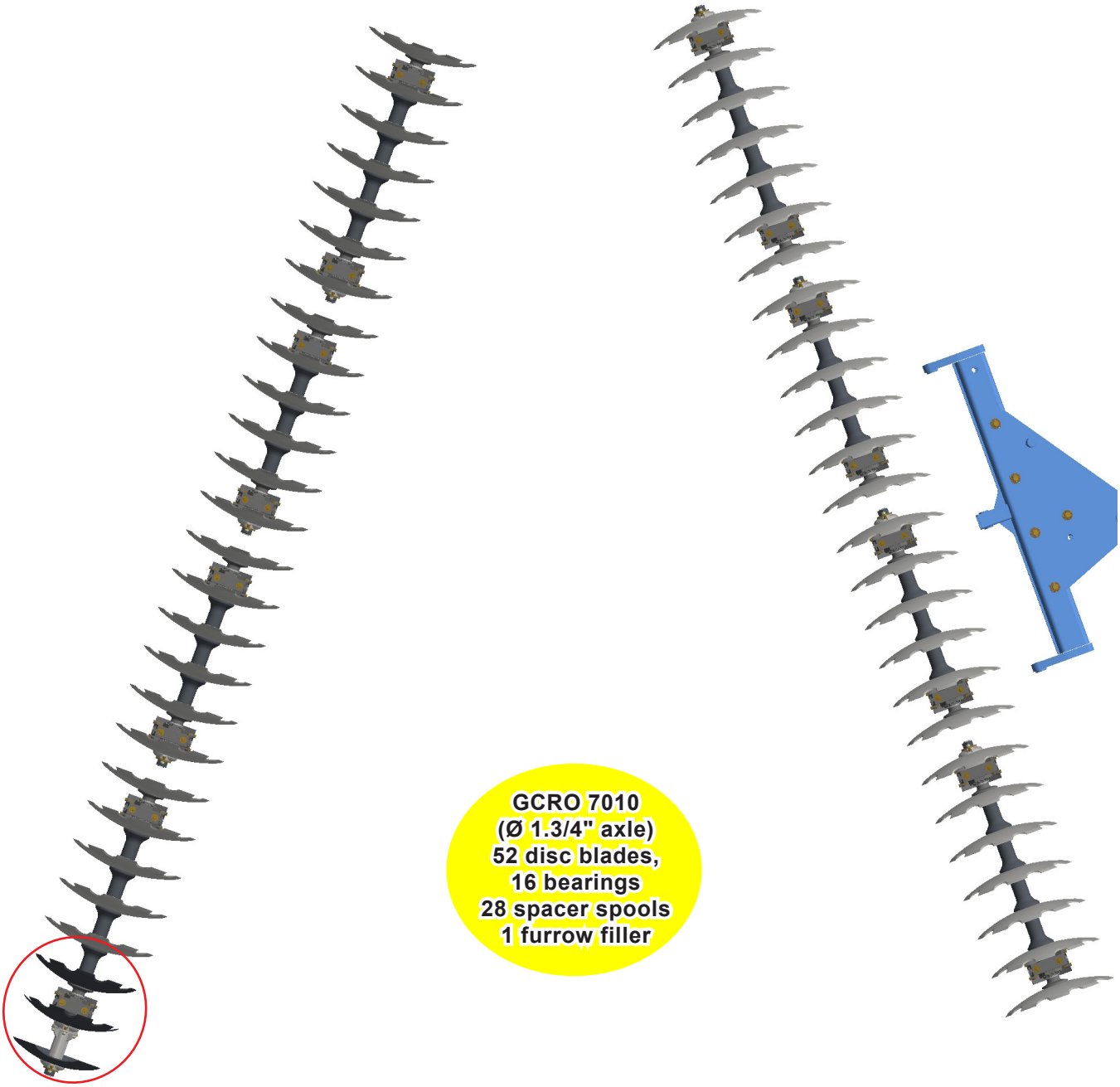
Bearing

Spacer spool



Furrow filler

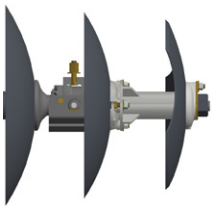
Assembly of bearings and spacer spools (GCRO 28 - 60)



GCRO 7010
(Ø 1.3/4" axle)
52 disc blades,
16 bearings
28 spacer spools
1 furrow filler

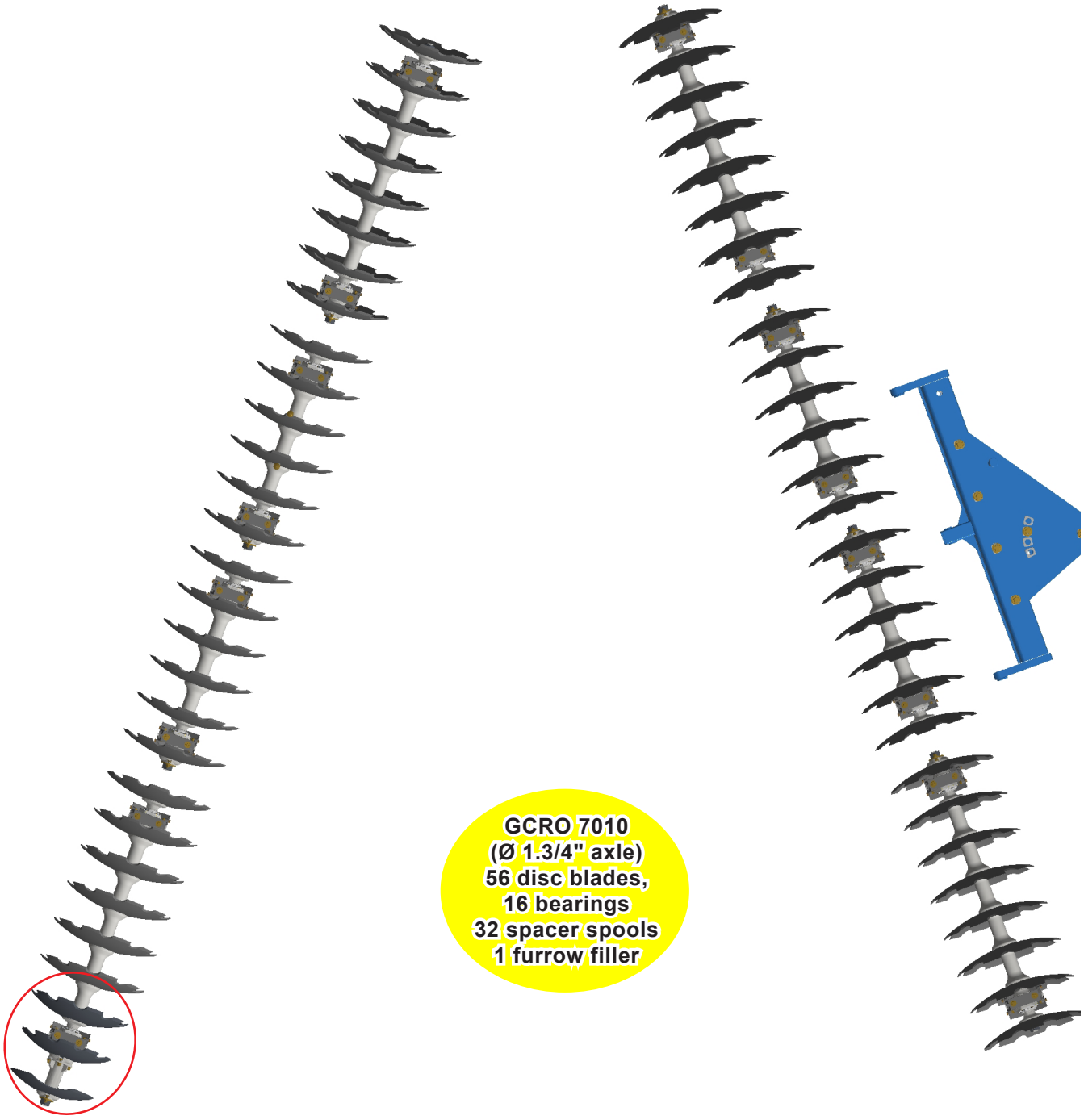
Bearing

Spacer spool



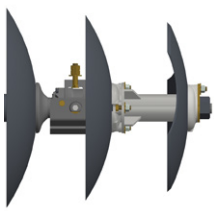
Furrow filler

Assembly of bearings and spacer spools (GCRO 28 - 60)



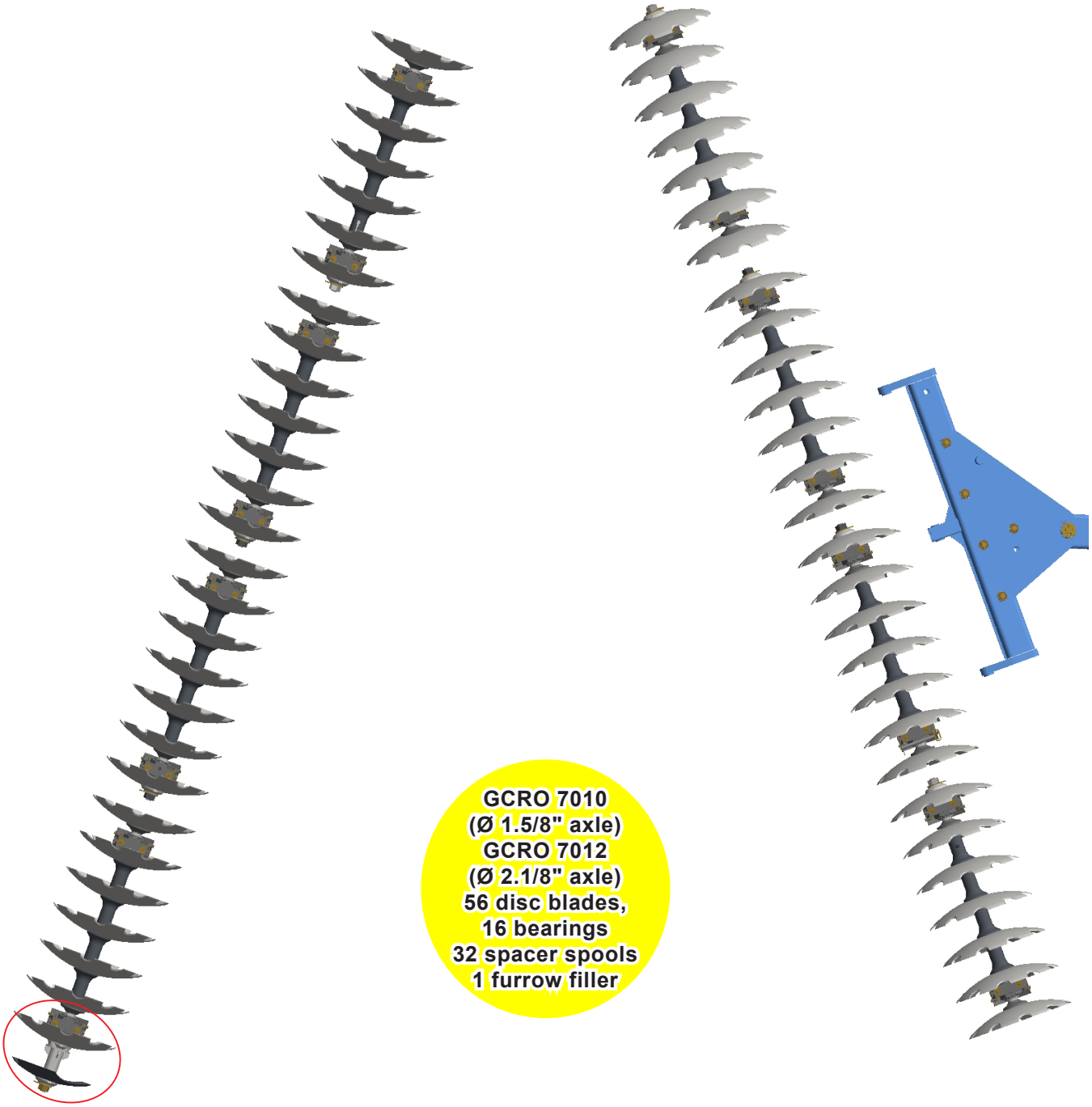
Bearing

Spacer spool



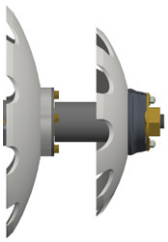
Furrow filler

Assembly of bearings and spacer spools (GCRO 28 - 60)

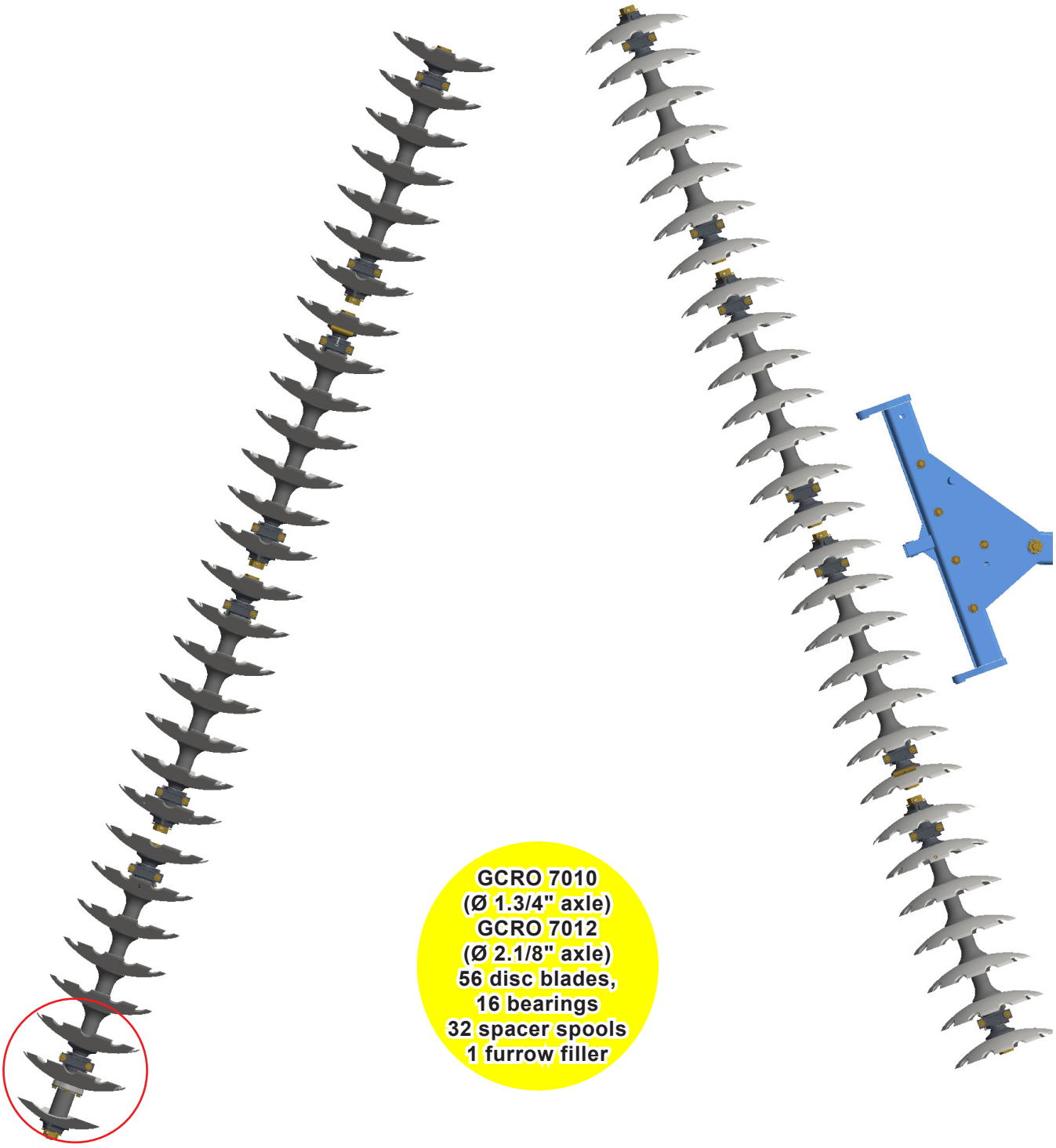



Bearing


Spacer spool


Furrow filler

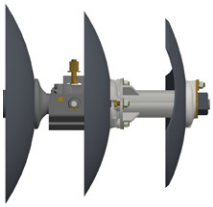
Assembly of bearings and spacer spools (GCRO 28 - 60)



GCRO 7010
(Ø 1.3/4" axle)
GCRO 7012
(Ø 2.1/8" axle)
56 disc blades,
16 bearings
32 spacer spools
1 furrow filler

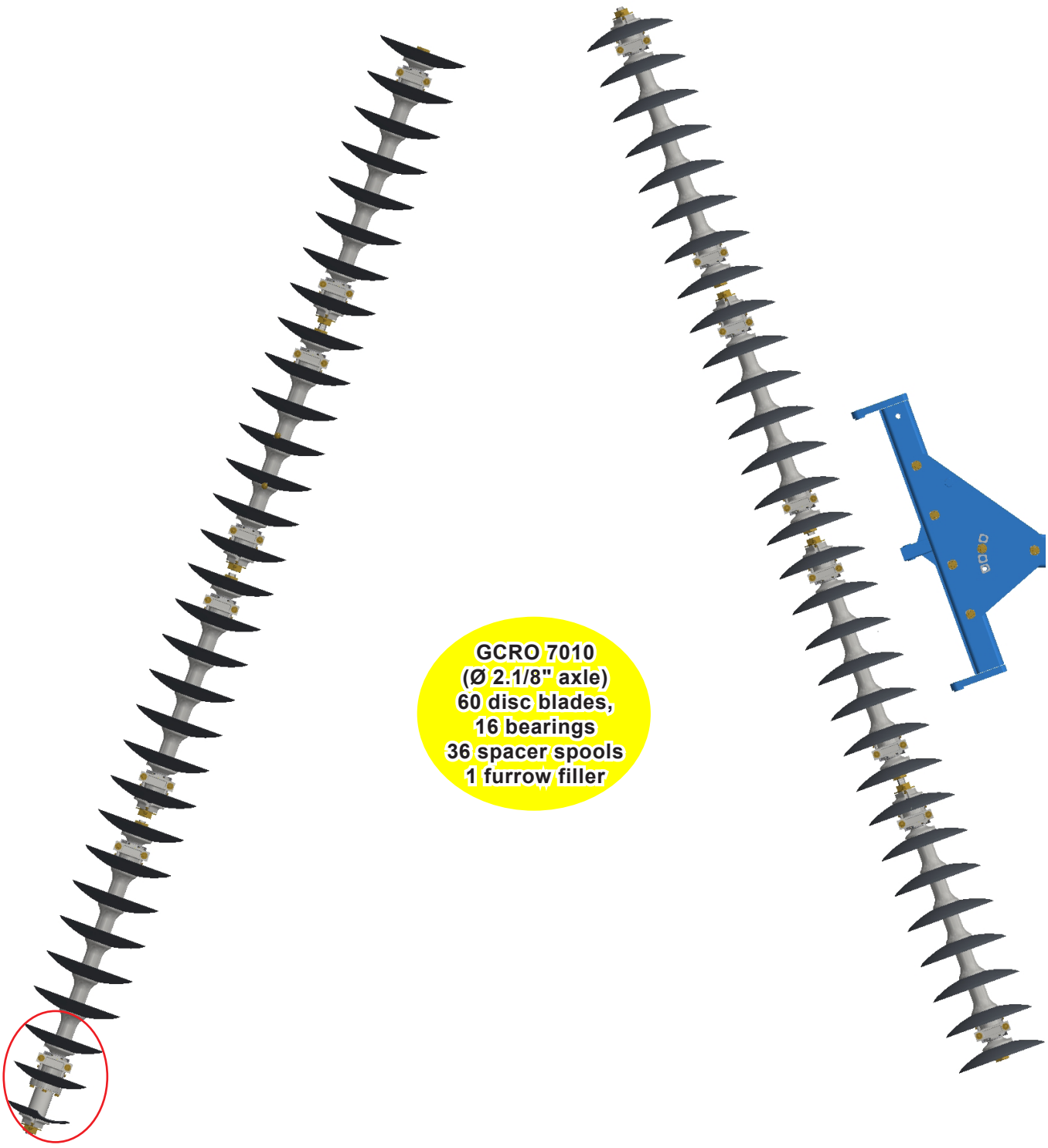
Bearing

Spacer spool



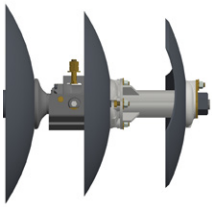
Furrow filler

Assembly of bearings and spacer spools (GCRO 28 - 60)

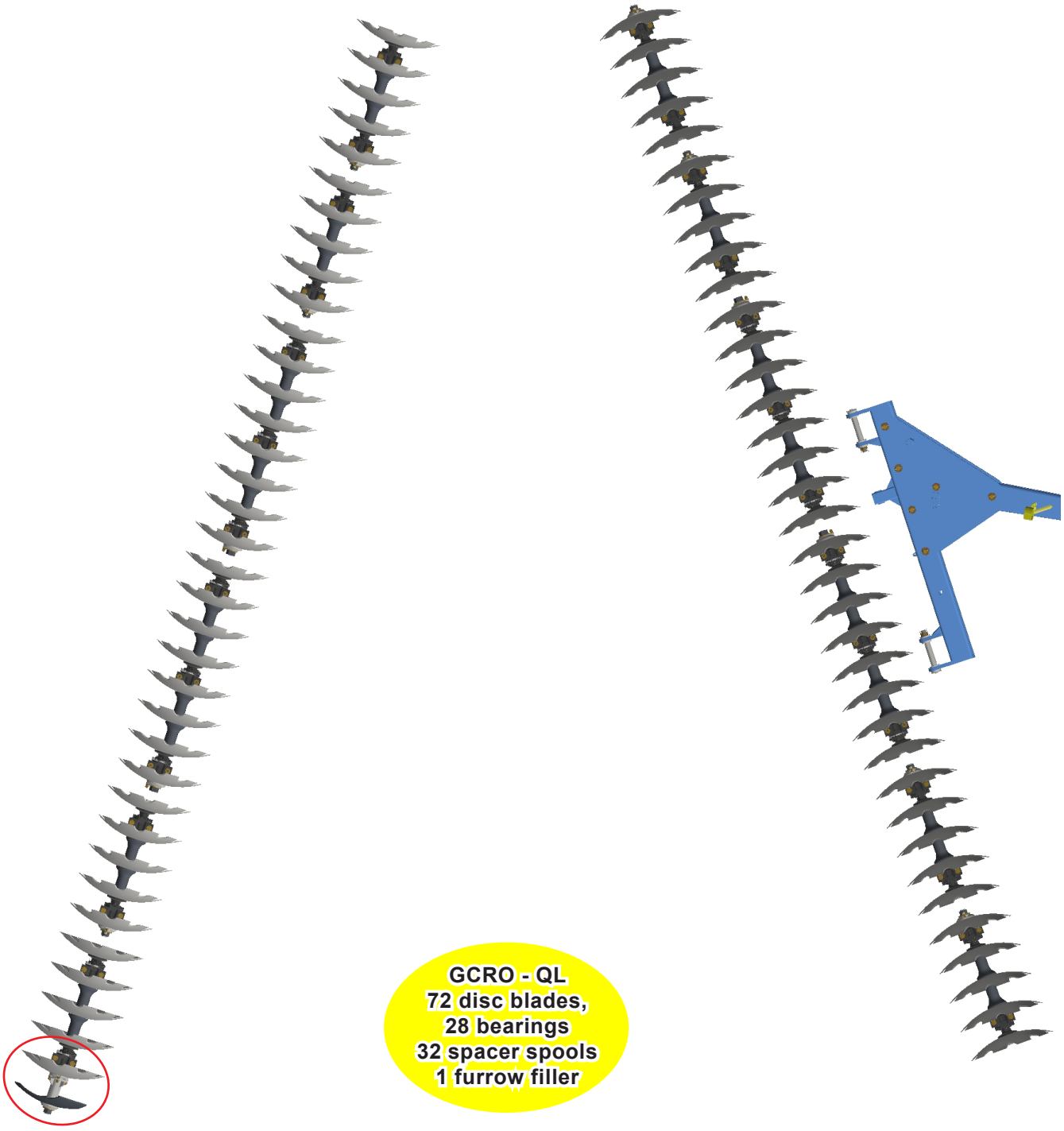



Bearing


Spacer spool


Furrow filler

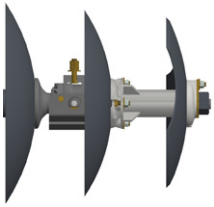
Assembly of bearings and spacer spools (GCRO 72 - 80)



GCRO - QL
72 disc blades,
28 bearings
32 spacer spools
1 furrow filler

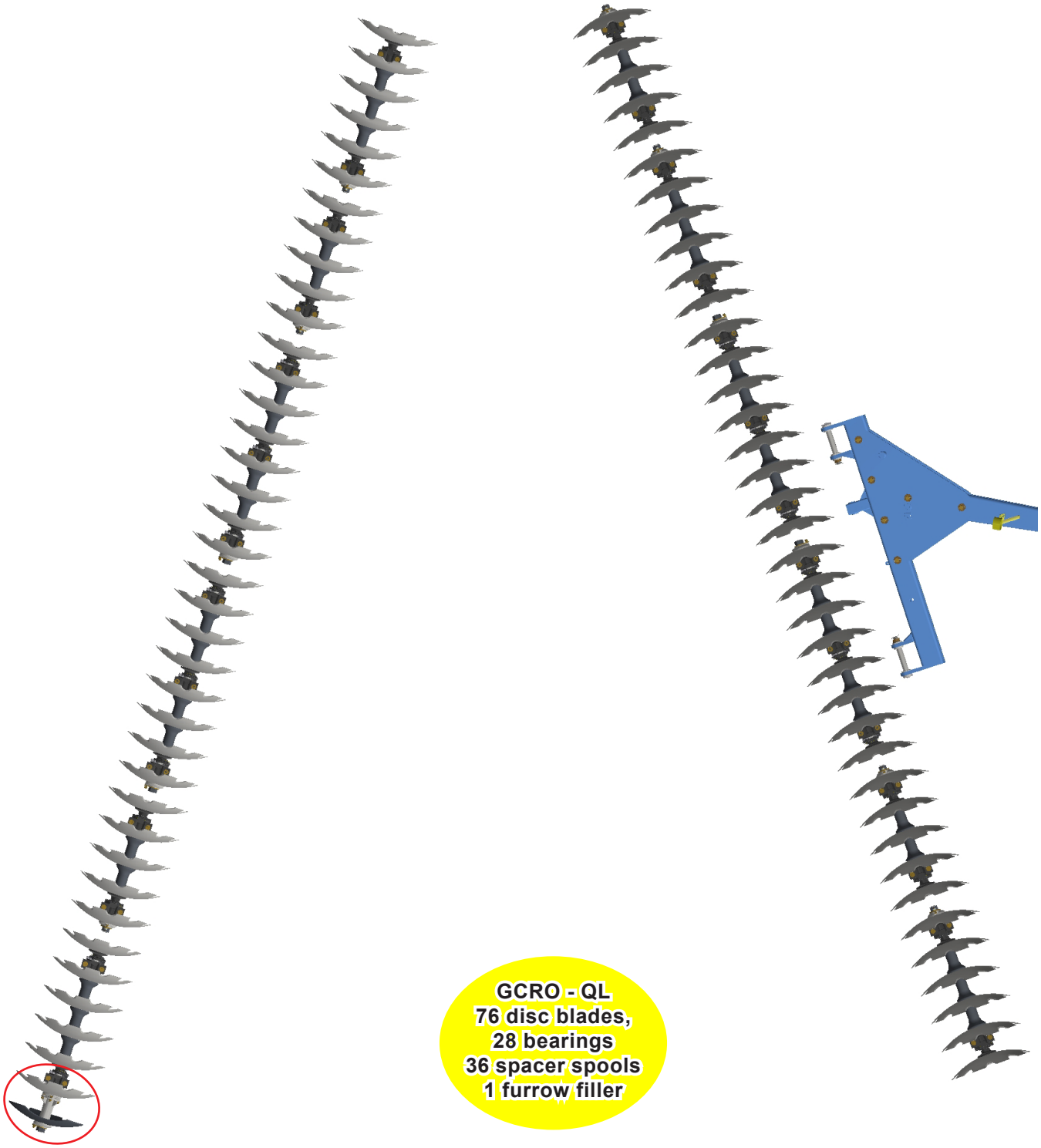
Bearing

Spacer spool



Furrow filler

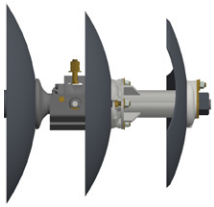
Assembly of bearings and spacer spools (GCRO 72 - 80)



GCRO - QL
76 disc blades,
28 bearings
36 spacer spools
1 furrow filler

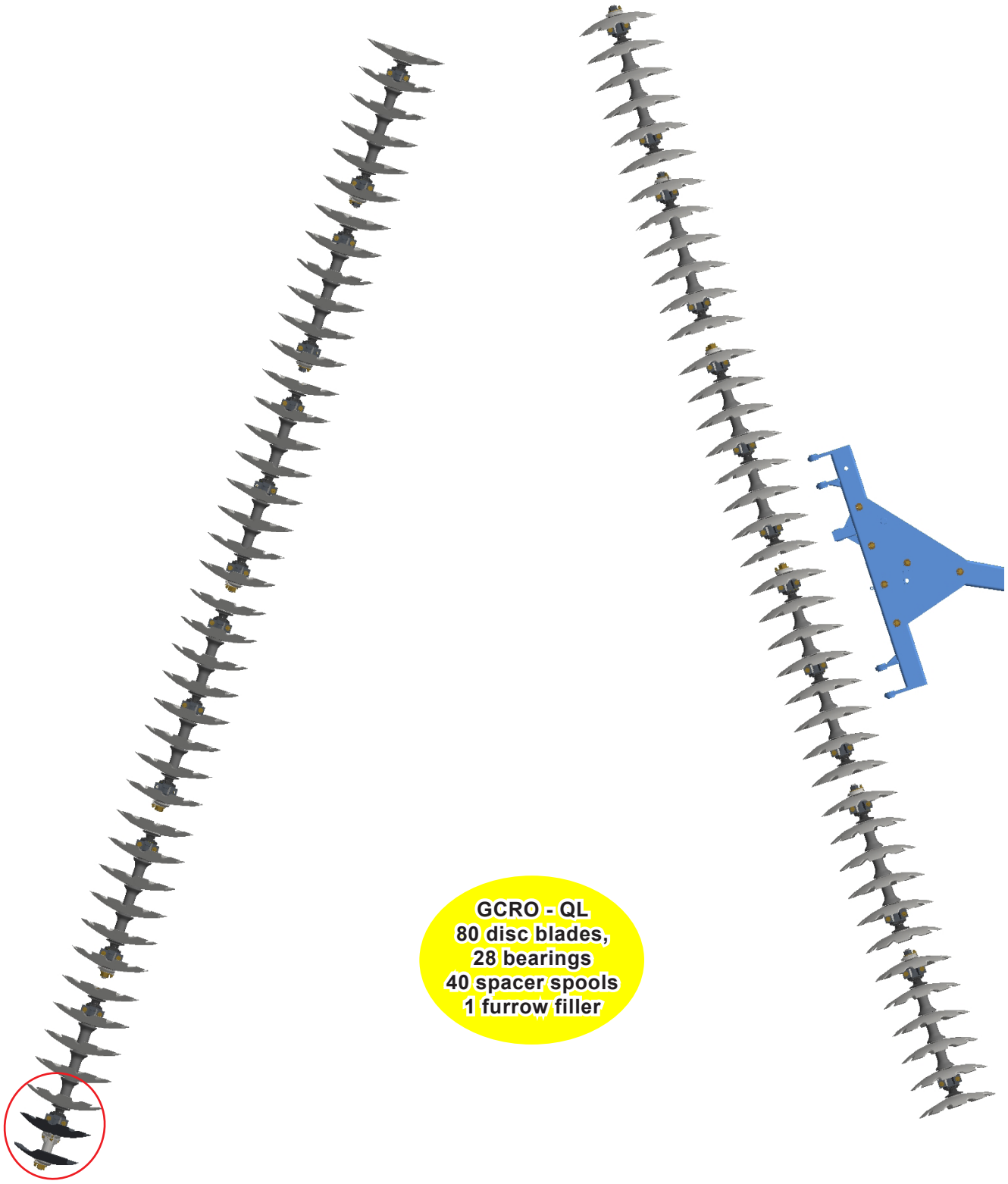
Bearing

Spacer spool



Furrow filler

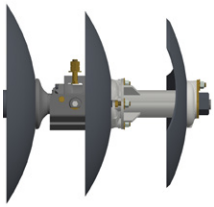
Assembly of bearings and spacer spools (GCRO 72 - 80)



GCRO - QL
80 disc blades,
28 bearings
40 spacer spools
1 furrow filler

Bearing

Spacer spool



Furrow filler

Disc gangs assembly sequence

Place the outer lock (A) along with the axle (B).

Tighten the nut (C) passing 5 mm from the axle face.

Place the disc blades (D), bearings (E) and spacer spools (F), following the instructions on the previous pages.

Place the inner lock (G) and nut (C-1).

Place the bolt (H) that holds the lock nut (I), along with a spring washer and nut, only on the outer side of the gangs.

Use the wrenches to tighten the gangs as follows:

1) Place one of the wrenches in the outer side of the gangs (locked side), supporting it on the ground. (As shown on the next page).

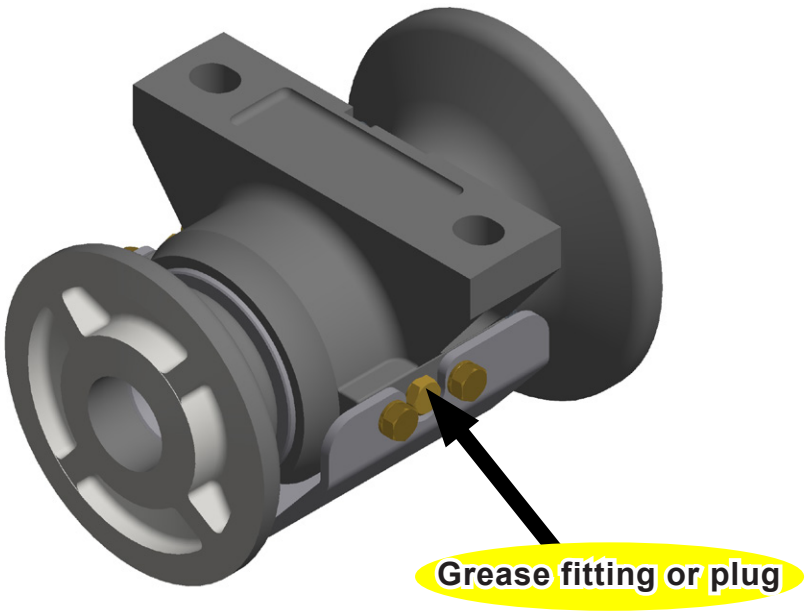
2) On the inner side, use the other wrench and tighten the gangs to get maximum torque.

3) To tighten the gangs, underpin them using a piece of wood or another object, thus preventing them from moving. (As shown on the next page).

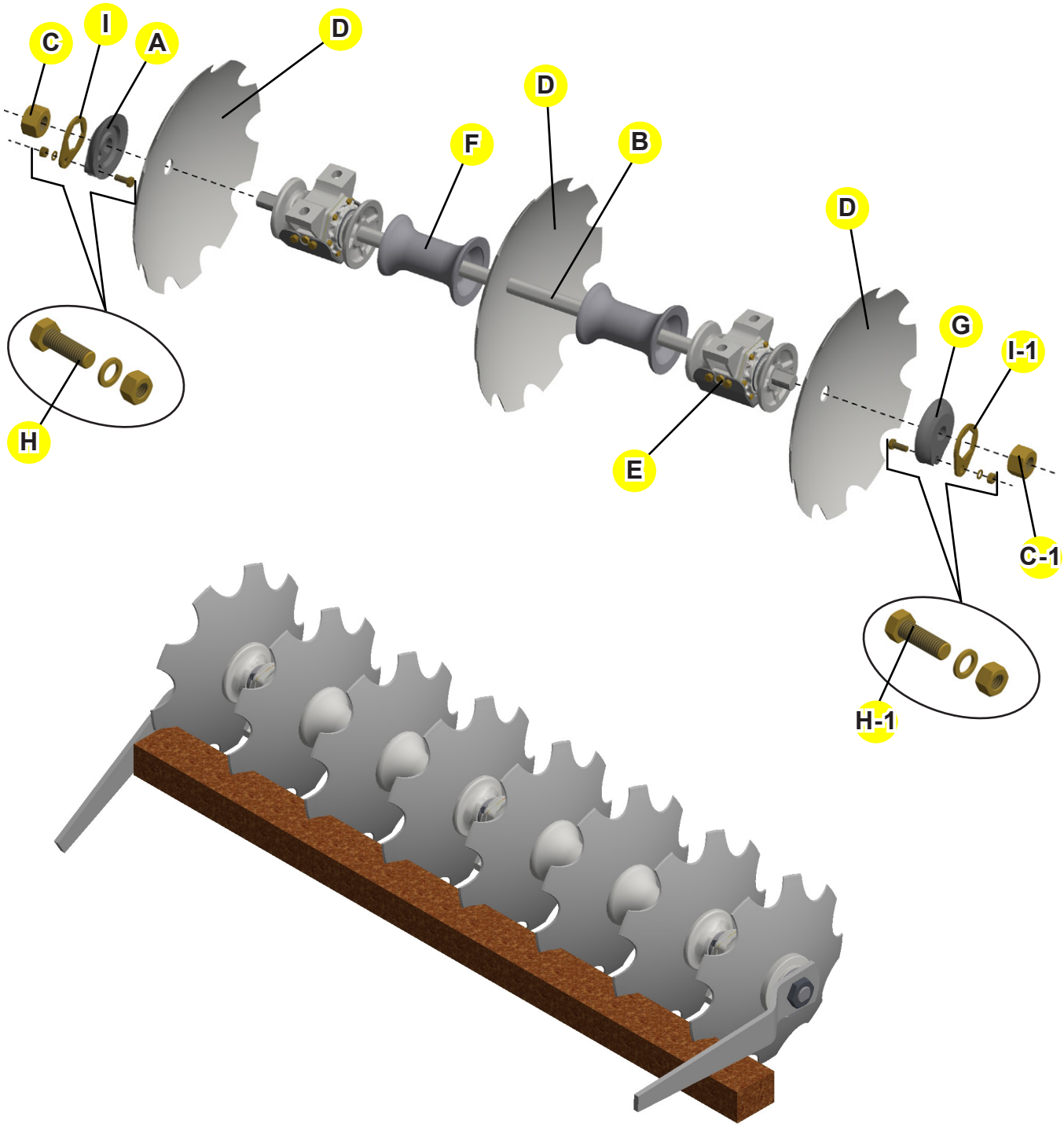
Lastly, put the bolt (H-1) and position the lock nut (I-1), fastening with a spring washer and nut.

IMPORTANT

- **Check the correct side of the bearings and spacer spools according to the disc blades concavity.**



Disc gangs assembly sequence



Axle torque	
Axle diameter	Ft. - lbs.
1.1/2"	2670
1.5/8"	2890
2.1/8"	3300
2.1/2"	3500

NOTE

- **The axle threads (B) must be greased before assembled.**
- **Consult the torque table.**

Disc gangs assembly sequence (with furrow filler)

Place the outer lock (A) along with the axle (B).

Tighten the nut (C) passing 5 mm from the axle face.

Place the disc blades (D), small disc (E), bearings (F) and spacer spools (G), following the illustration on the next page.

Place the inner lock (H) and nut (C1).

Place the bolt (I) that fasten the lock nut (J), along with spring washer and nut, only on the outer side of the gangs.

Right after, underpin the disc blades to prevent their movement and tighten as shown on the next page, using the wrenches (A or A1).

On the outer side of the gangs, couple the spacer spool (K) to the outer lock (A) using bolts (I1) and fastening with spring washers and nuts.

Fasten the furrow filler (L) to the spacer spool (K) and place the outer lock (M) on the spacer spool axle.

Then, fasten the nut (C2) to the spacer spool (K) axle.

Use the wrenches (A or A1) and tighten the gangs, as follows:

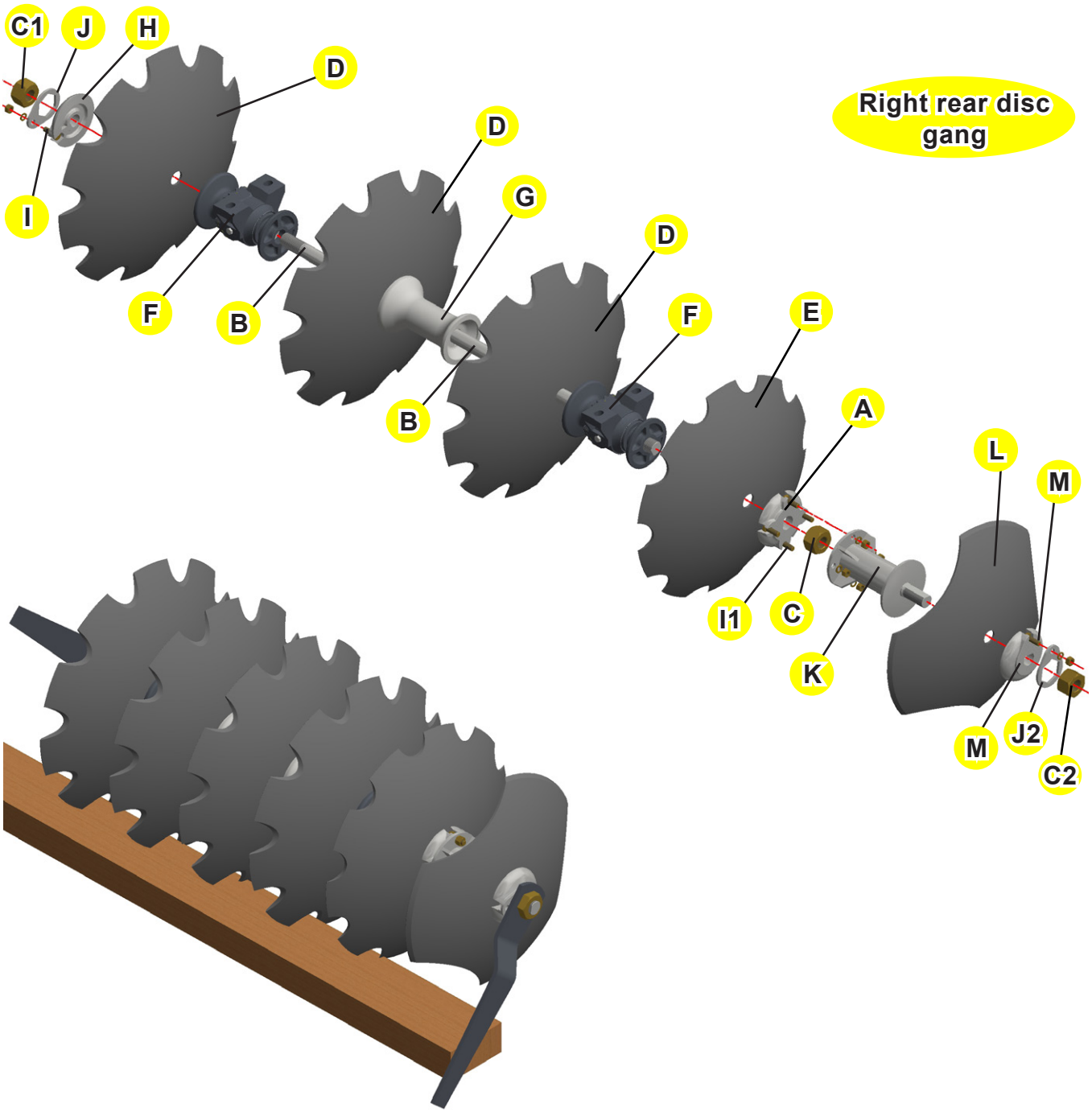
1) Place one of the wrenches on the outer side of the gangs and support it on the soil. (As shown on the next page).

2) On the inner side, use the other wrench and tighten the gangs to get maximum torque.

3) To tighten the gangs, underpin them using a piece of wood or another object to prevent their movement. (As shown on the next page).

Lastly, place the bolt (I2) and position the lock nut (J1), fastening with spring washer and nut.

Disc gangs assembly sequence (with furrow filler)



Axle torque	
Axle diameter	**Ft. - lbs.**
1.1/2"	2670
1.5/8"	2890
2.1/8"	3300
2.1/2"	3500

NOTE

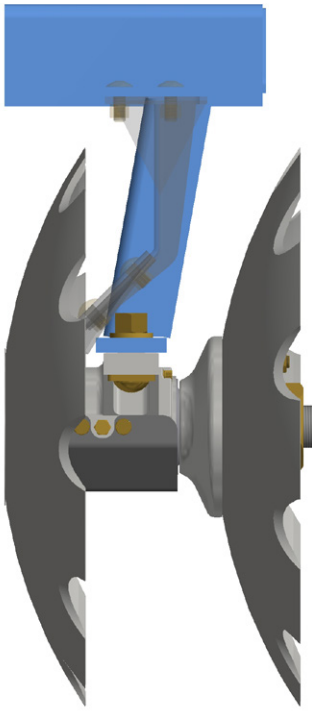
- **The axle threads (B) must be greased before assembled.**
- **Consult the torque table.**

Assembly of the disc gangs on the frame

IMPORTANT

• The rear gang turns earth to the left and the front gang turns earth to the right.

In the gang assembly to the carriers, the bearing hangers should remain facing the disc blades concavity.

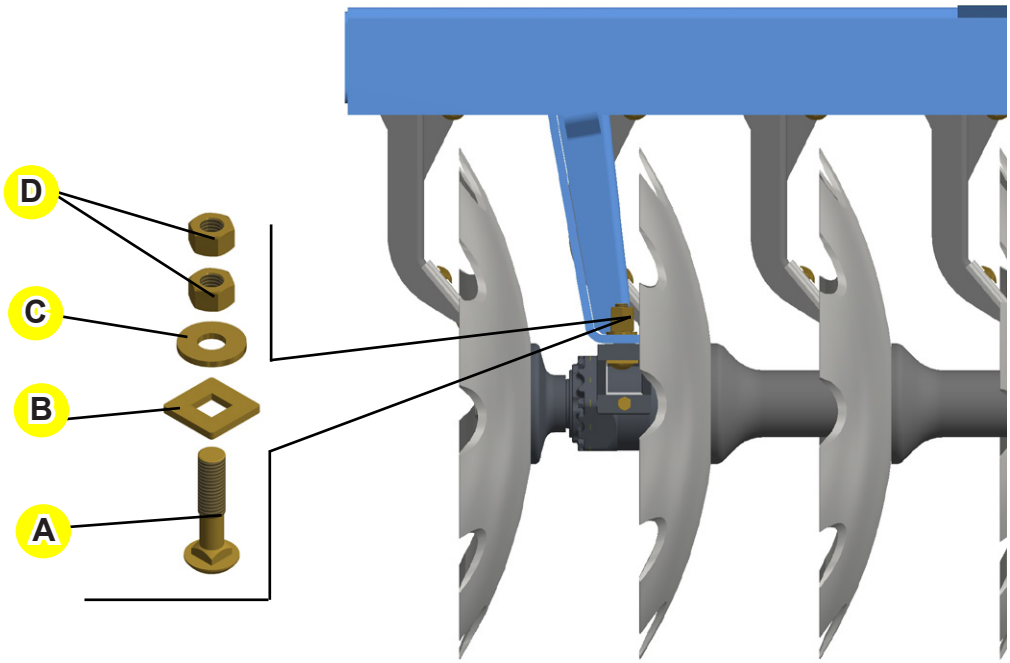


Procedures:

In the illustration below it is possible to see the assembly sequence, being:

• Place the bolt (A) with square washer (B) and pass it through the bearing housing and through the bearing hanger hole. On top, place a flat washer (C) and nuts (D);

• Repeat this operation for other bearings.

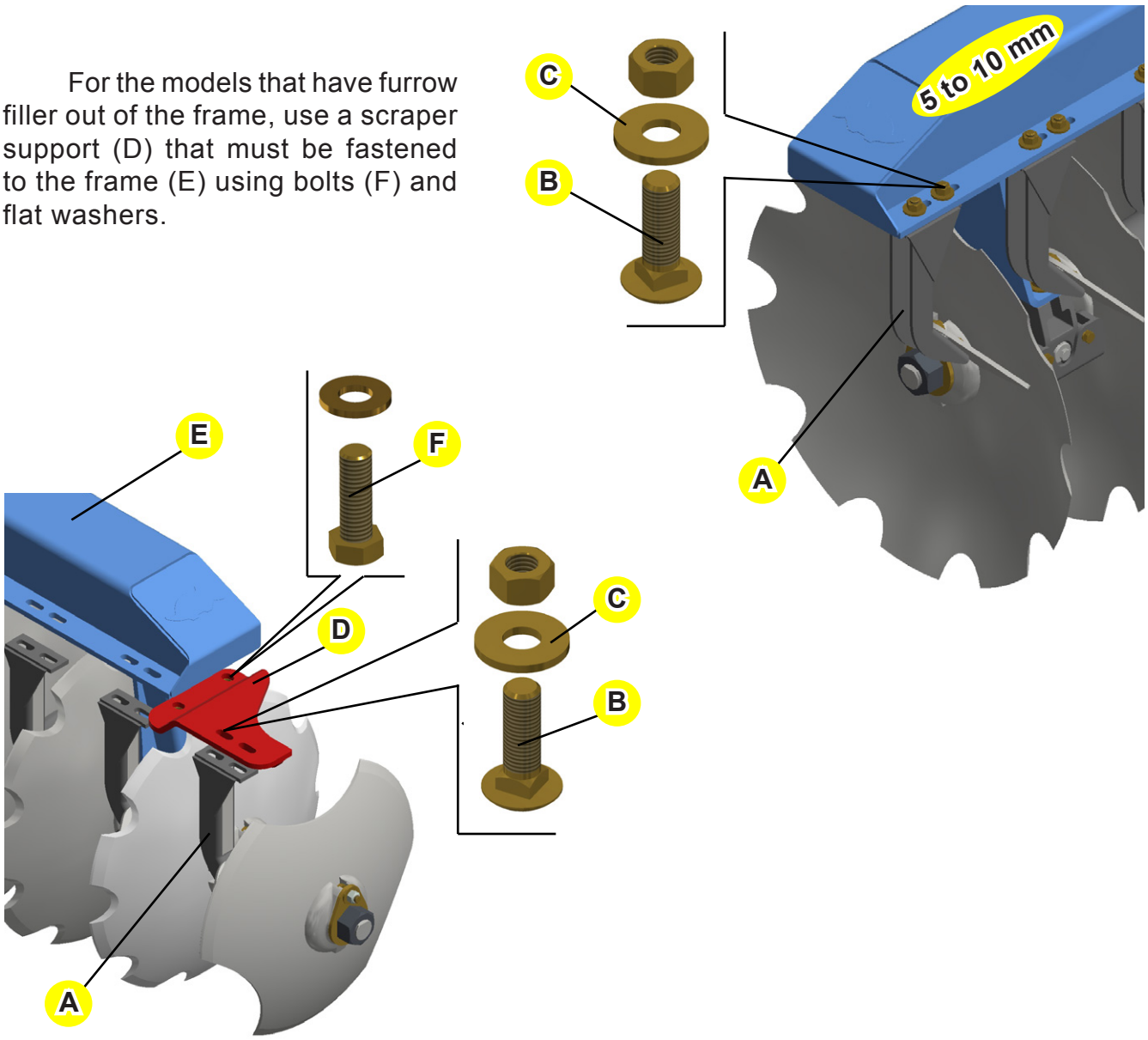


Scrapers assembly

Note the fixing point of the scrapers with the end facing the concave side of the disc blades.

Assemble the scrapers (A) using the bolts (B), which are placed underneath the fixation plate. On top, place spring washers (C) and nuts.

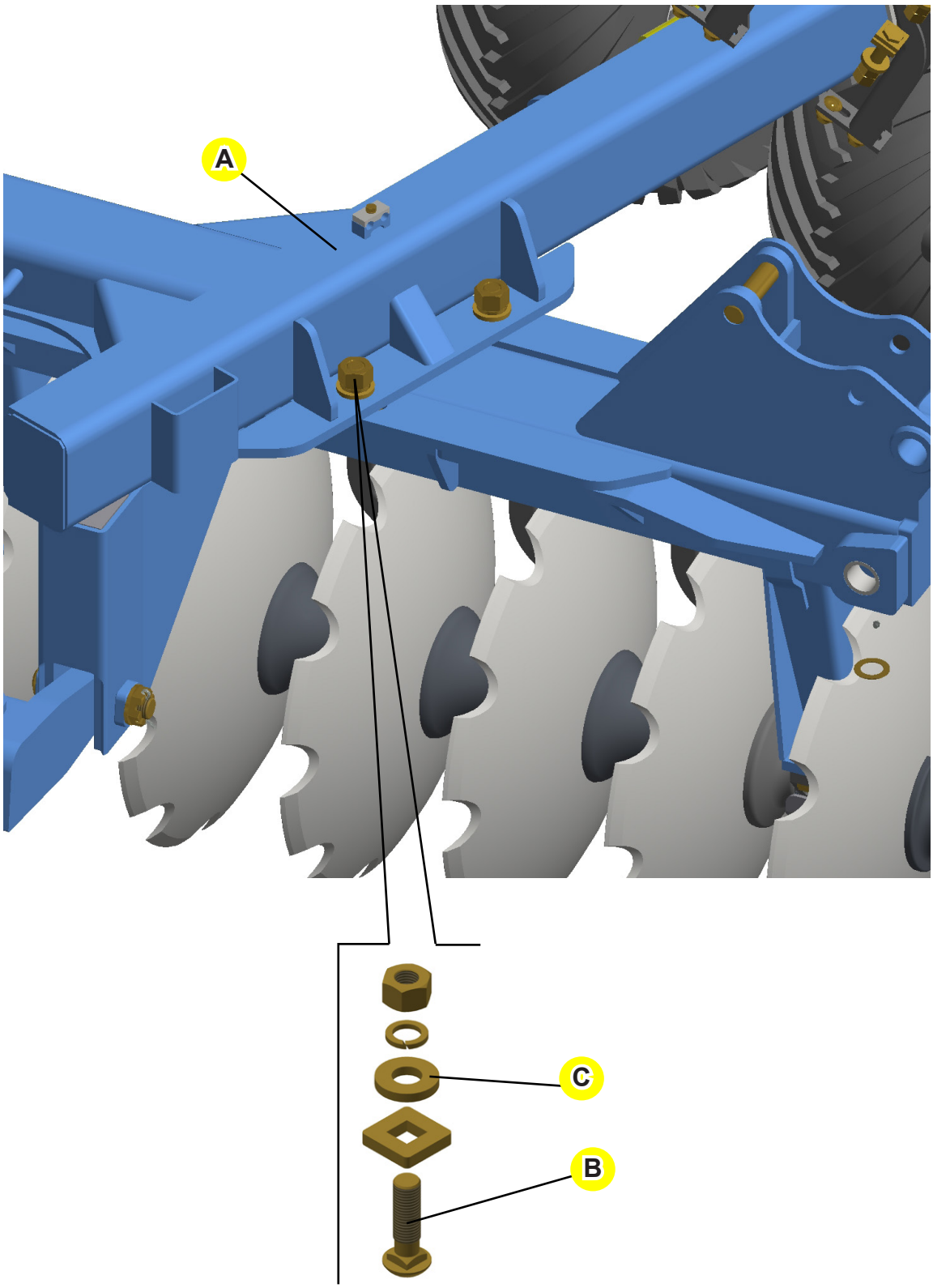
For the models that have furrow filler out of the frame, use a scraper support (D) that must be fastened to the frame (E) using bolts (F) and flat washers.



NOTE **The scrapers feature an adjustment to approach or distance them from the disc blades; it ranges from 5 mm (minimum) to 10 mm (maximum).**

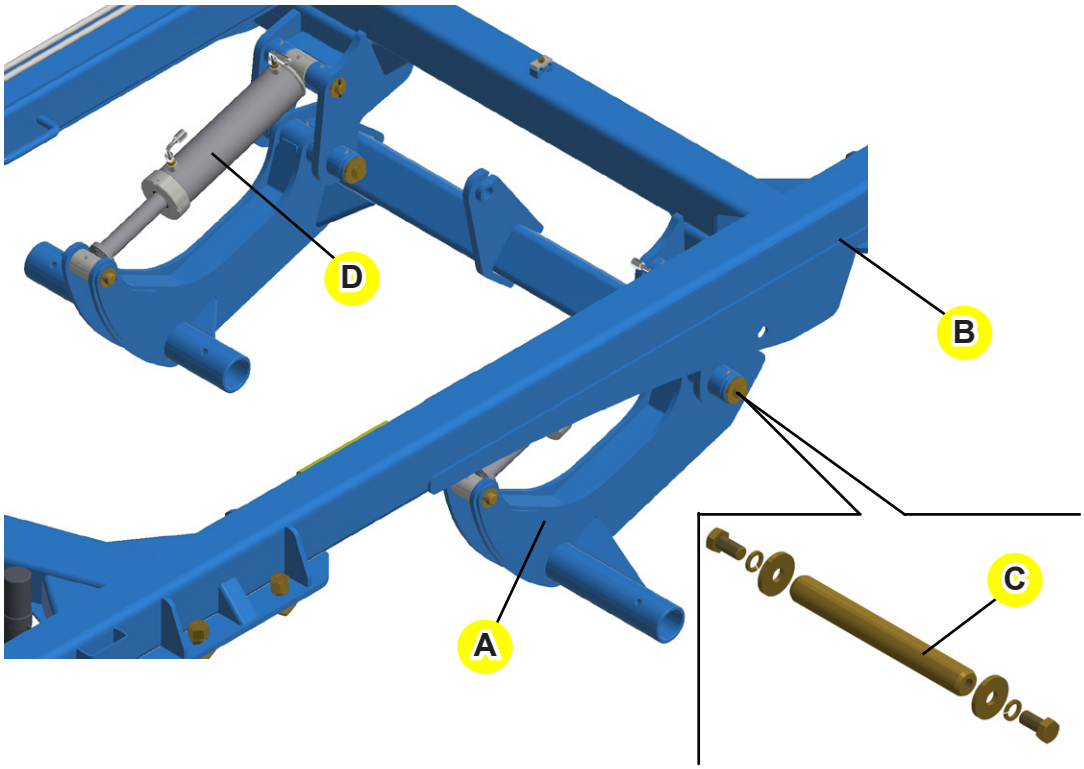
Disc gang carrier assembly to the frame

Fasten the front and rear disc gang carriers to the frame (A) using bolts (B) and square washer, placing these parts from the bottom to top. Right after, lock using flat washer (C), spring washer and nuts.



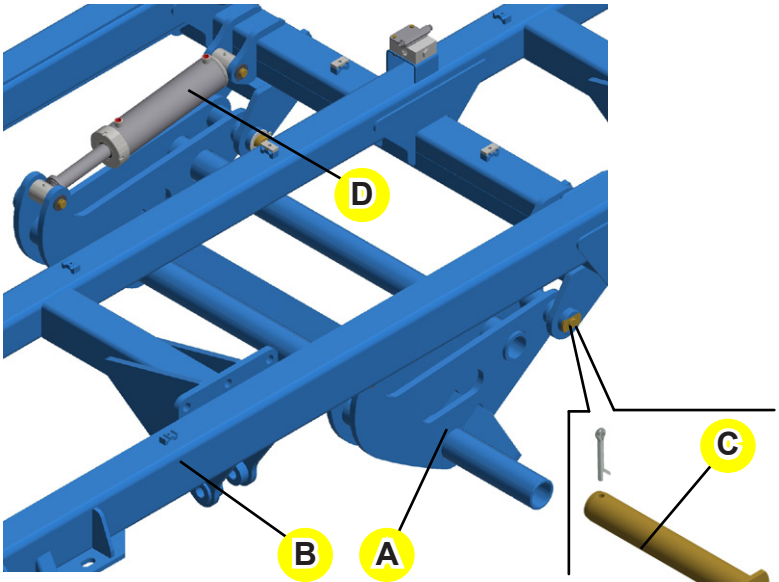
Wheelset assembly (28 - 60 disc blades)

Fasten the wheelset (A) to the frame (B) using a junction axle (C), flat washers, spring washer and bolts. Right after, fasten the cylinders (D) to the wheelset (A) locking with articulation axle, flat washers and elastic pins.

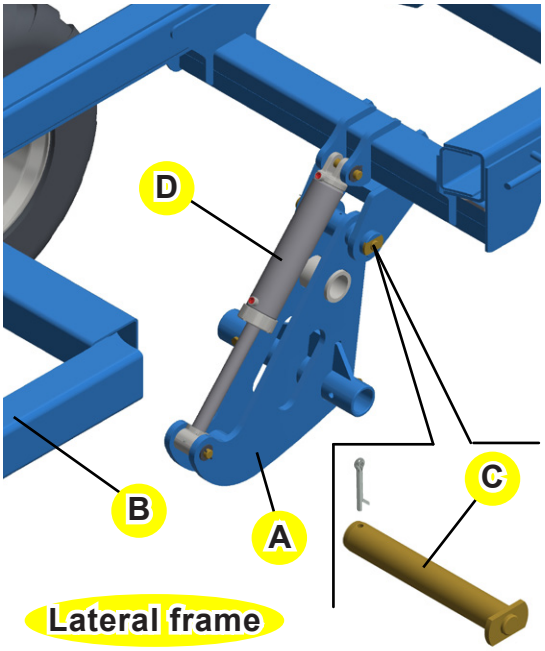


Wheelset assembly (72 - 80 disc blades)

Lock the wheelset (A) to the frame (B) using a junction axle (C), flat washers, spring washers and bolts. Then, fasten the cylinders (D) to the wheelset (A) locking with articulation axles, flat washers and elastic pins.



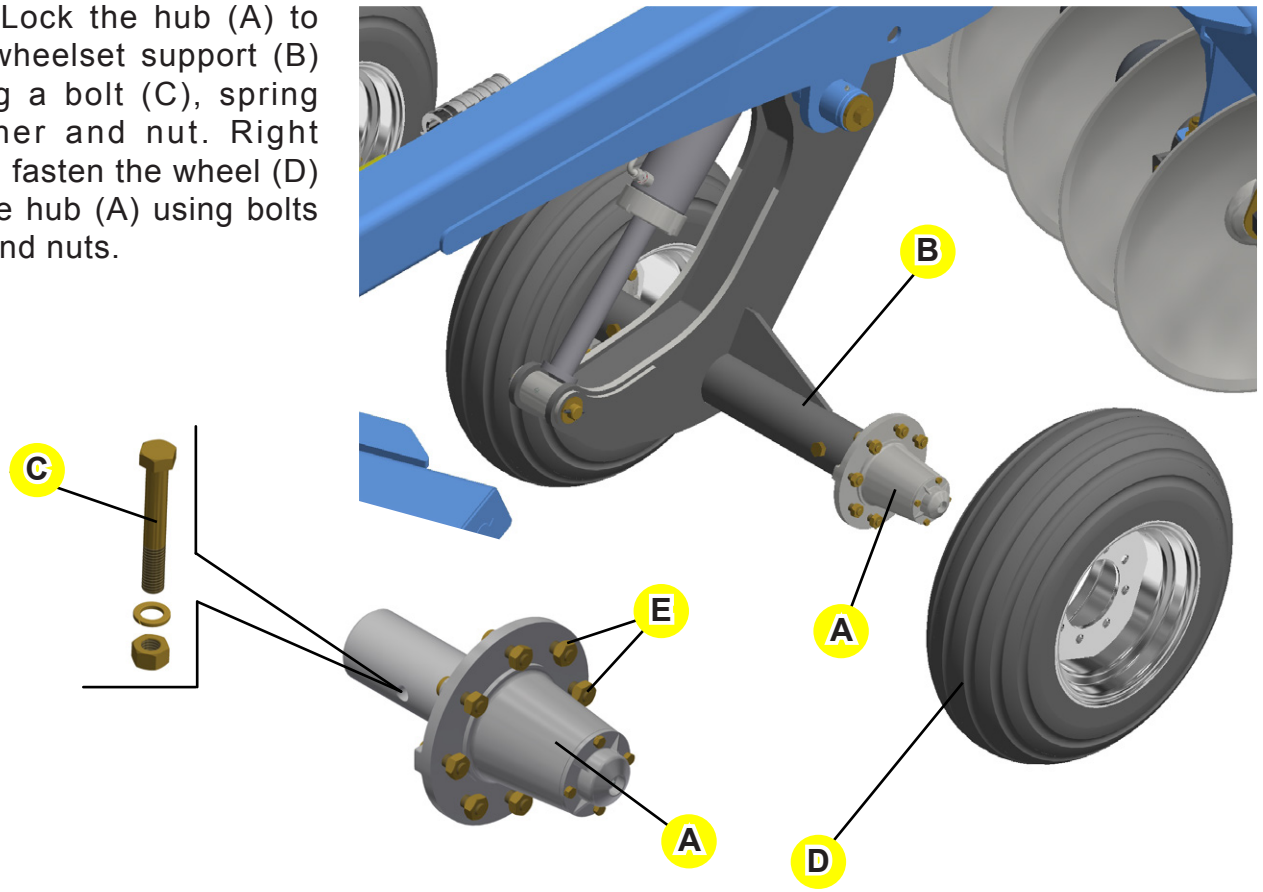
Central frame



Lateral frame

Tires assembly

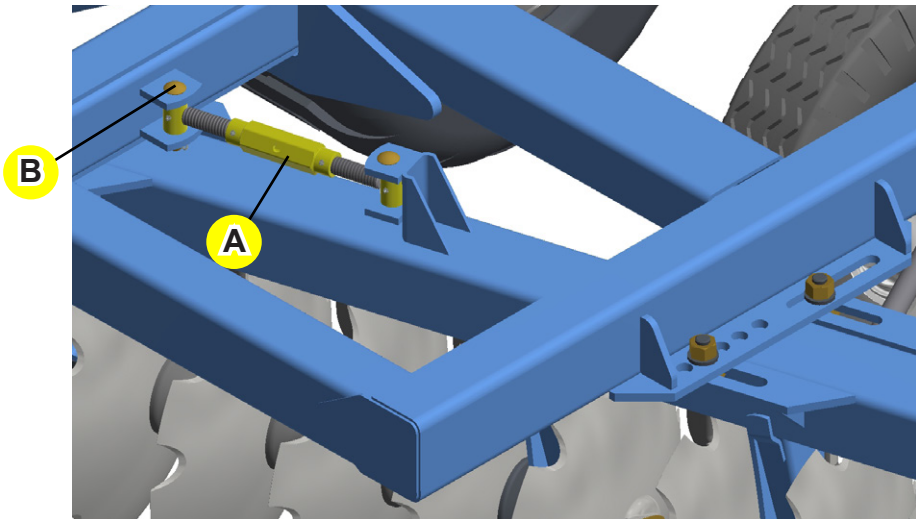
Lock the hub (A) to the wheelset support (B) using a bolt (C), spring washer and nut. Right after, fasten the wheel (D) to the hub (A) using bolts (E) and nuts.



Stabilizer assembly

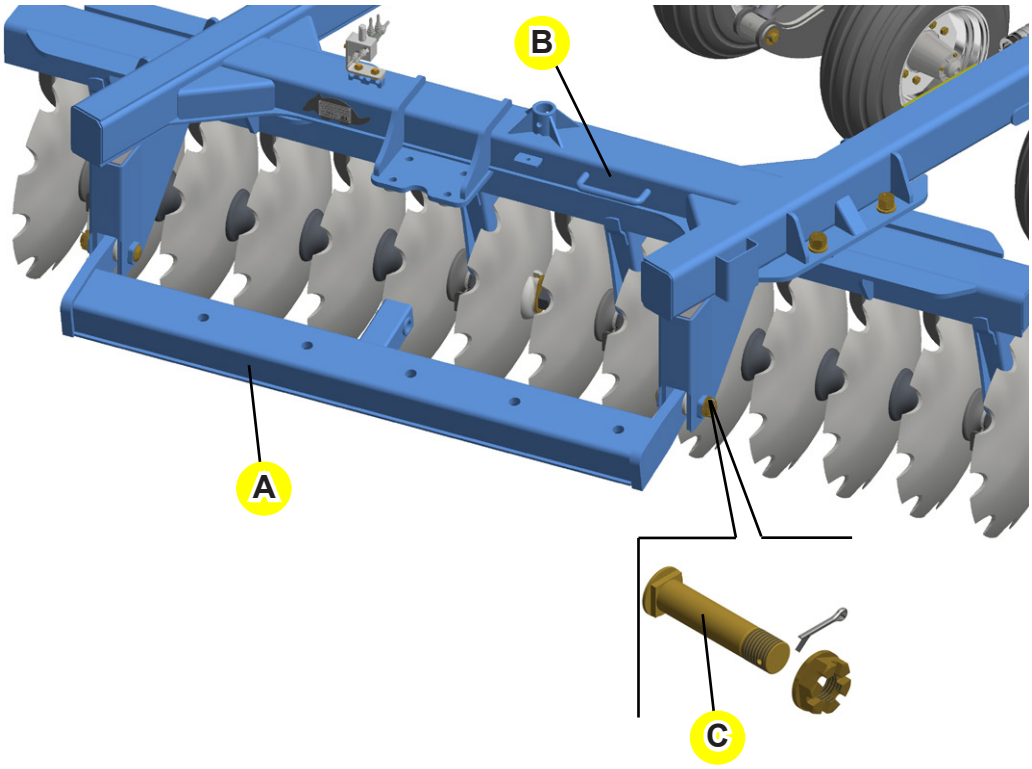
The GCRO disk harrow allows a lateral displacement of 150 mm on the rear disc gang carrier. The adjustment is done through the adjusting nut of the stabilizer (A). To lift the disk harrow totally, note the stabilizer leveling.

To mount the stabilizer, fasten it to the support using pins (B) and cotter pins.



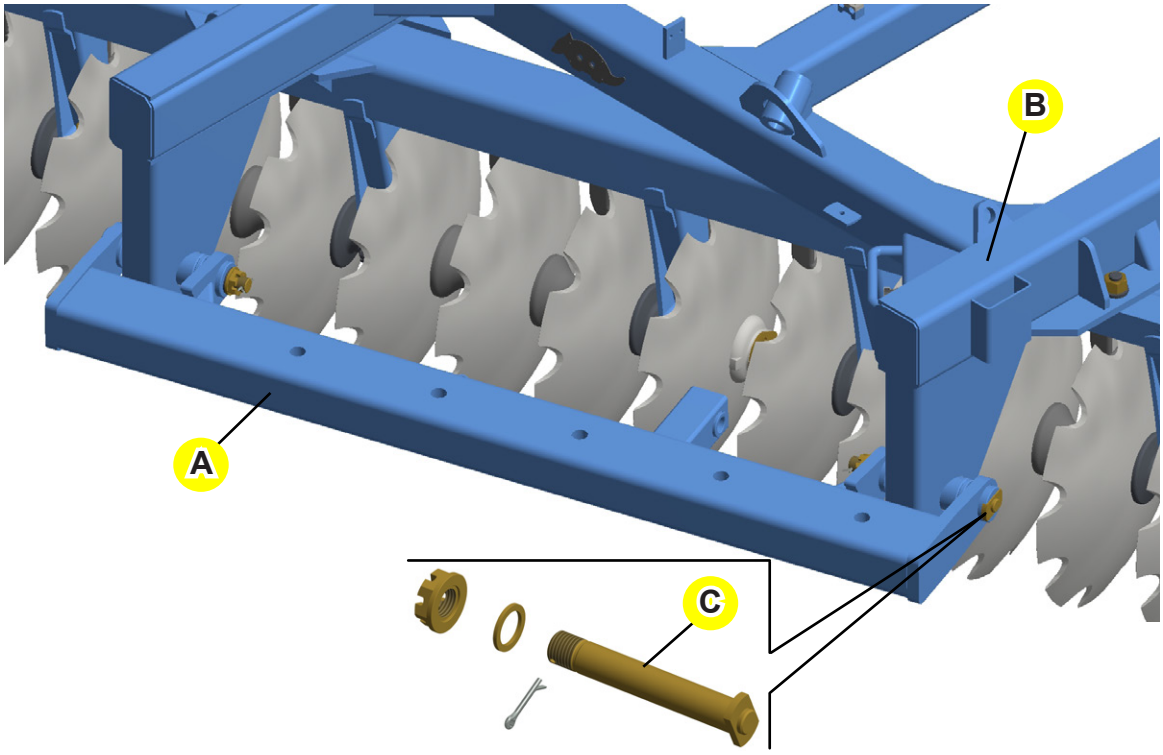
Hitch bar assembly (28 - 60 disc blades)

Couple the hitch bar (A) to the frame (B) arms and lock using a junction axle (C), castle nut and cotter pin.



Hitch bar assembly (72 - 80 disc blades)

Couple the hitch bar (A) to the frame (B) arms and lock using an axle with lock (C), flat washer, castle nut and cotter pin.



Hydraulic traction set assembly

Assemble the upper (A) and lower (B) plates to the hitch bar (C) using junction axle (D), flat washer, castle nut and cotter pin, carefully observing the correct position of the plates and bolts. Avoid to assemble them inverted.

Assemble the drawbar (E). Note that all castle nuts are on the upper part of the plates, locked and with cotter pins.

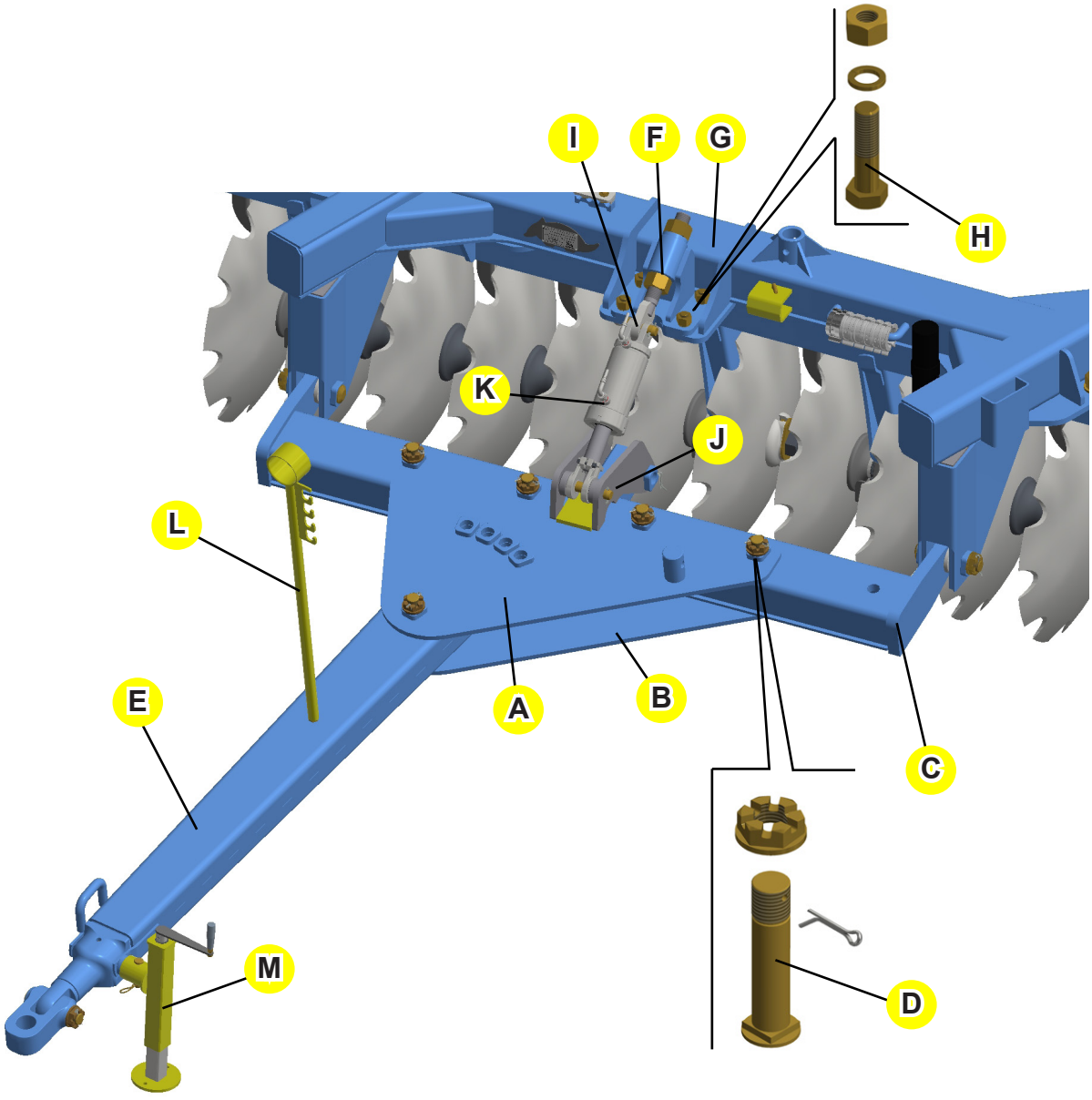
Assemble the cylinder fastener (F) to the frame (G) using bolts (H), spring washer and nuts.

Assemble the spindle (I) to the fastener (F) using nuts.

Assemble the articulator (J) to the hitch bar (C) using an axle, castle nut and cotter pin.

Fasten the hydraulic cylinder (K) to the spindle (I) and to the articulator (J) with its respective axles and cotter pins.

Assemble the hose support (L) and the parking jack (M) to the drawbar (E).



Mechanical traction set assembly

Fasten the upper (A) and lower (B) plates to the hitch bar (C) using a junction axle (D), flat washer, castle nut and cotter pin; carefully observe the position of the plates and bolts. Avoid to mount them inverted.

Assemble the drawbar (E). Note that all castle nuts are on the upper part of the plates, locked and with cotter pins.

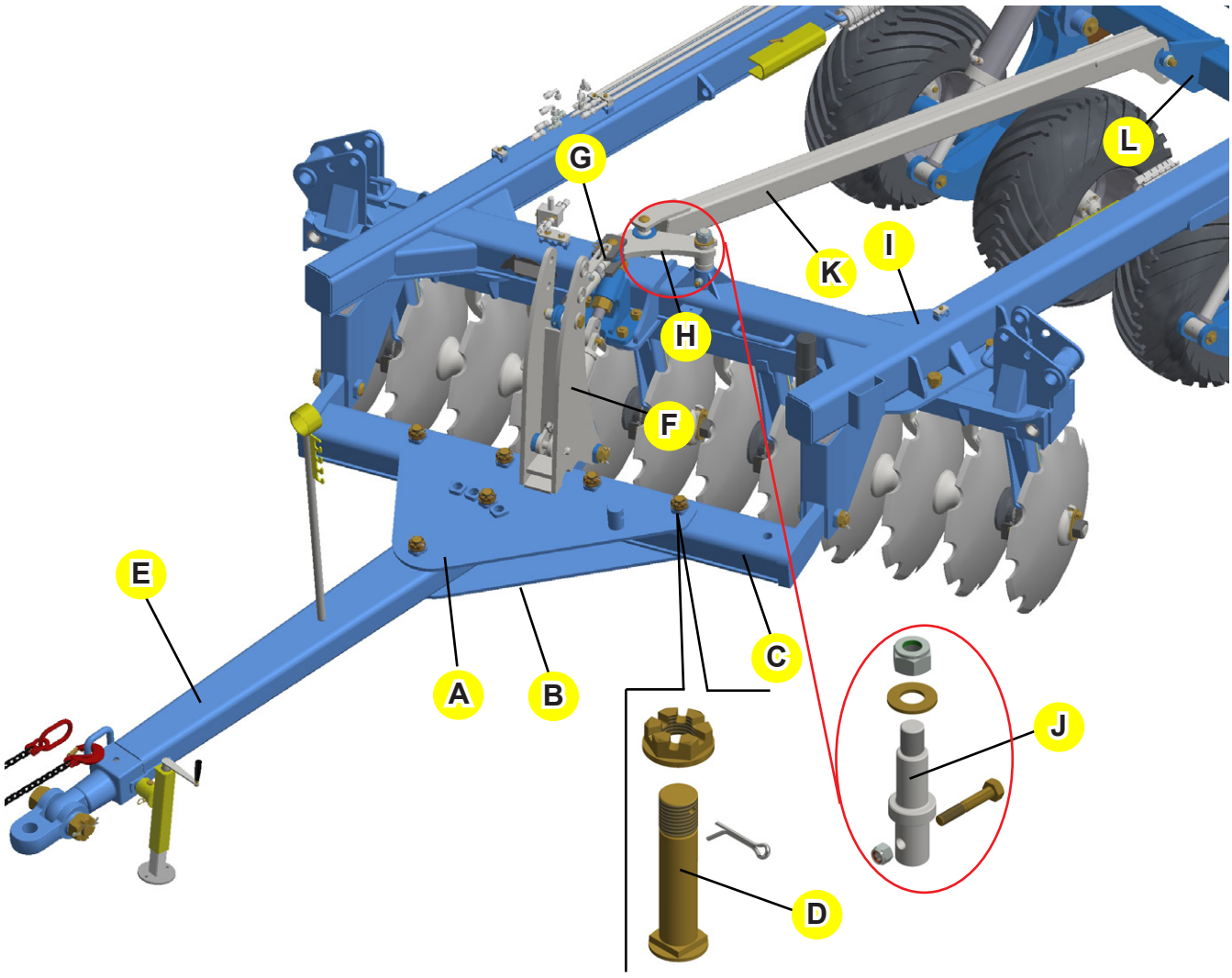
Assemble the drawbar articulator (F) to the hitch bar (C) using a bolt, castle nut and cotter pin.

Fasten the adjustment extensor (G) to the stabilizer bar (F) using a bolt, flat washer and hex nut; on the other end of the extensor (G), couple the articulator (H) to the stabilizer bar using a junction axle and cotter pin.

Fasten the articulator (H) to the frame (I) using an axle (J) and then lock it using a bolt and hex nut.

Fasten the articulator (H) to the stabilizer bar (K) using junction axle and cotter pin.

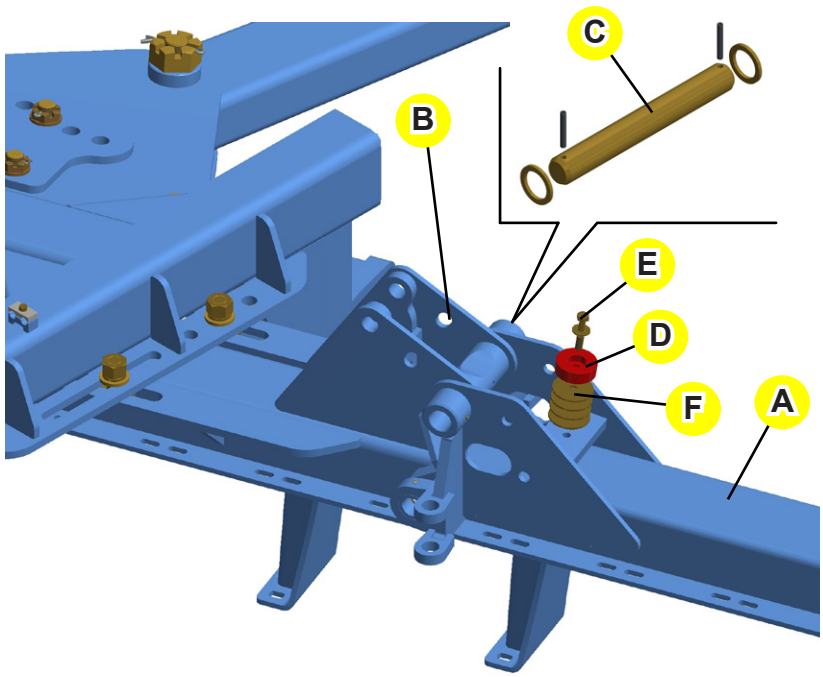
Couple the stabilizer bar (K) to the wheelset (L) using a bolt, flat washer and hex nut.



Folding wings assembly

Approach the wing (A) to the central frame (B). After that, join them using a pin (C) and elastic pins.

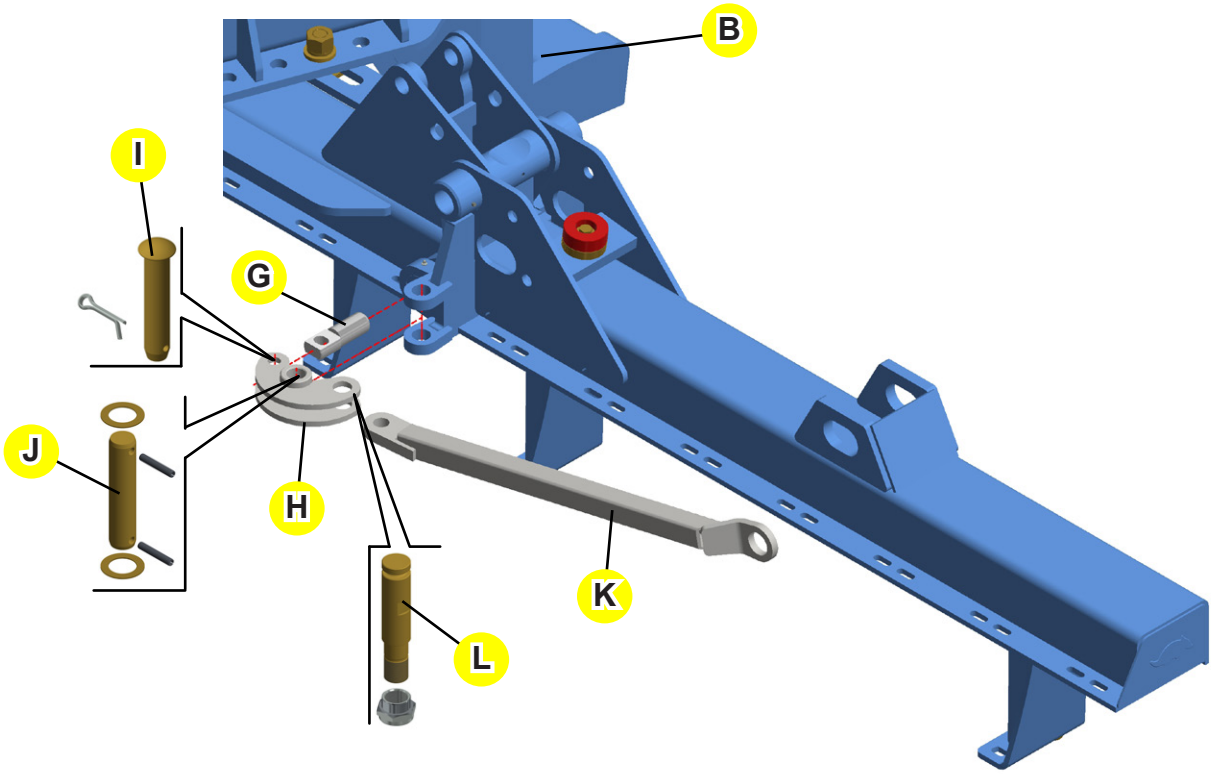
Assemble the shock absorber (D) to the wing (A) using a bolt (E), flat washer and spacing flat washers (F).



Fasten the axle lock (G) to the central frame (B) and lock it to the articulator (H) using a pin (I) and cotter pin. Also place the pin (J), flat washers and elastic pins to lock the articulator (H) to the wing (A).

Lock the arm (K) to the articulator (H) using an axle lock, spring fastener (L) and nut.

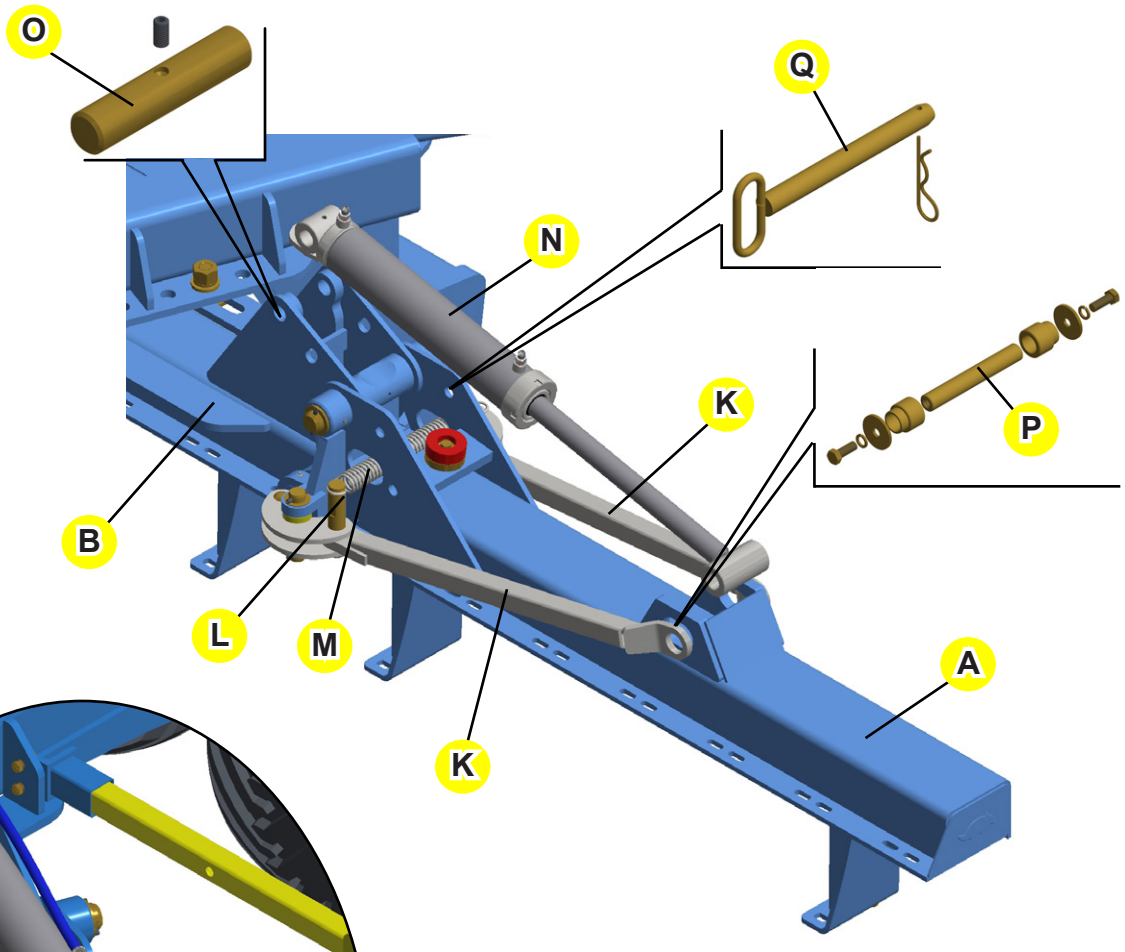
Repeat the same procedure on the other side of the frame.

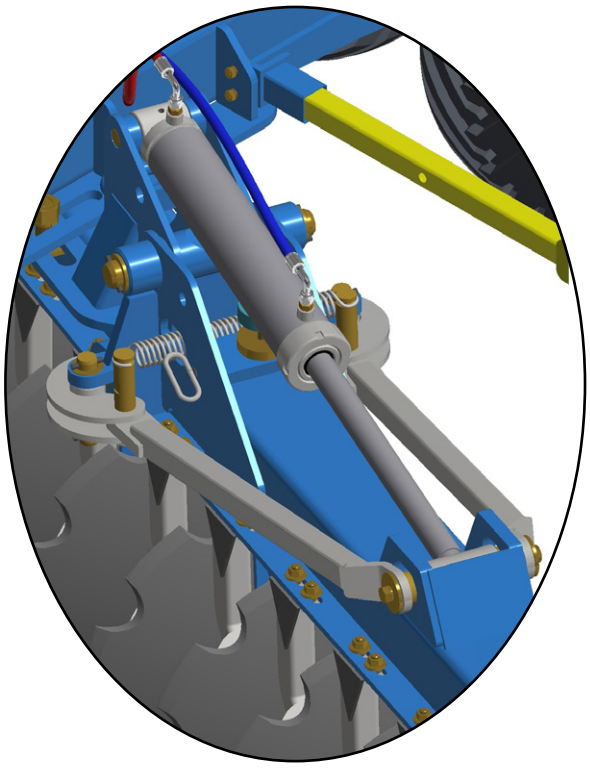


Folding wings assembly

Assemble the spring (M) passing it through the frame (A) holes and locking with axles (L).

Couple the hydraulic cylinder (N) to the central frame (B) using a pin (O) and bolts; lock the cylinder (N) rod end to the wing (A) using an axle (P), bushings, flat washers, spring washers and bolts, locking the cylinder and the arms (K).





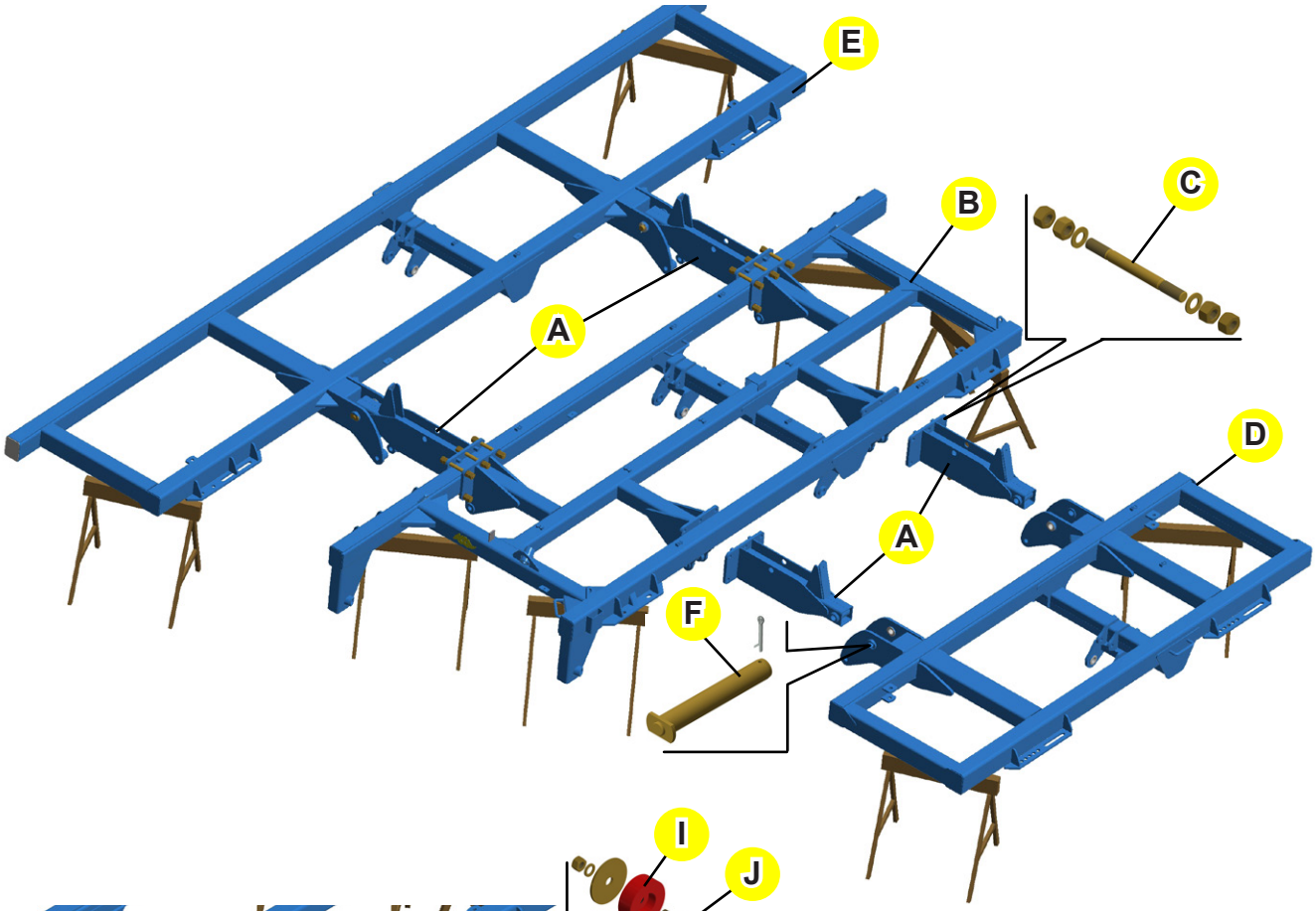
Detail

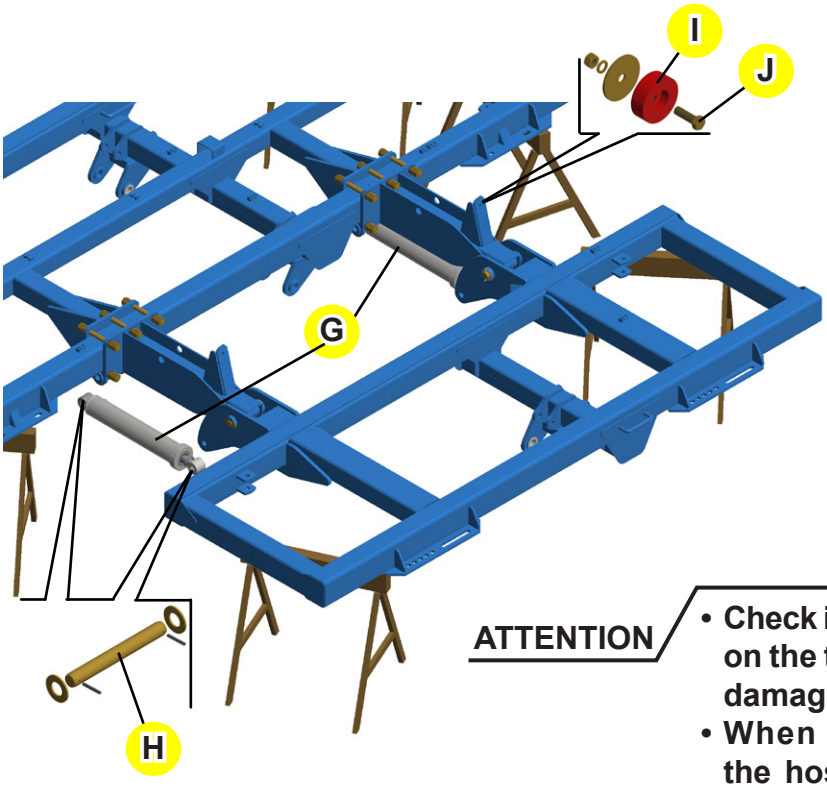
NOTE • **The lock pin (Q) is used only to lock the wing (A) on the central frame (B) for transportation.**

Lateral frames assembly

Lock the lateral frame arms (A) to the central frame (B) using double end threaded studs (C), flat washers, nuts and counter nuts.

Being the frames supported on a trestle, join the lateral frames (D and E) on the articulator (A) and lock using an axle (F) with lock and cotter pin.





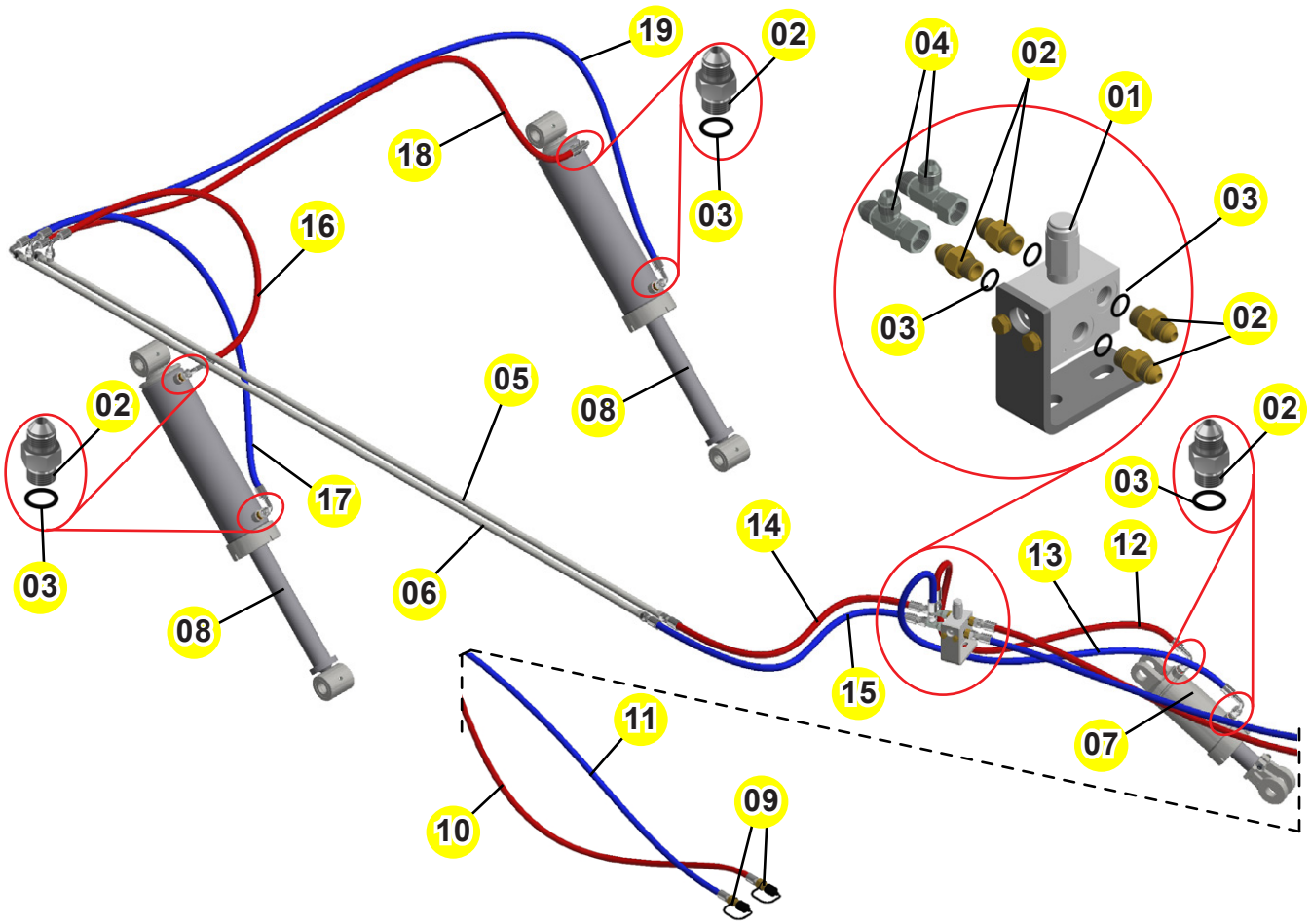
Being the frames supported on trestles, assemble the cylinders (G) and lock the cylinder barrel on the central frame (B); also lock the cylinder rod on the lateral frames (D and E) using an axle (H), flat washers and elastic pins.

Assemble the shock absorber (I) to the articulator (A) using a bolt (J), flat washer, spring washer and nut.

ATTENTION

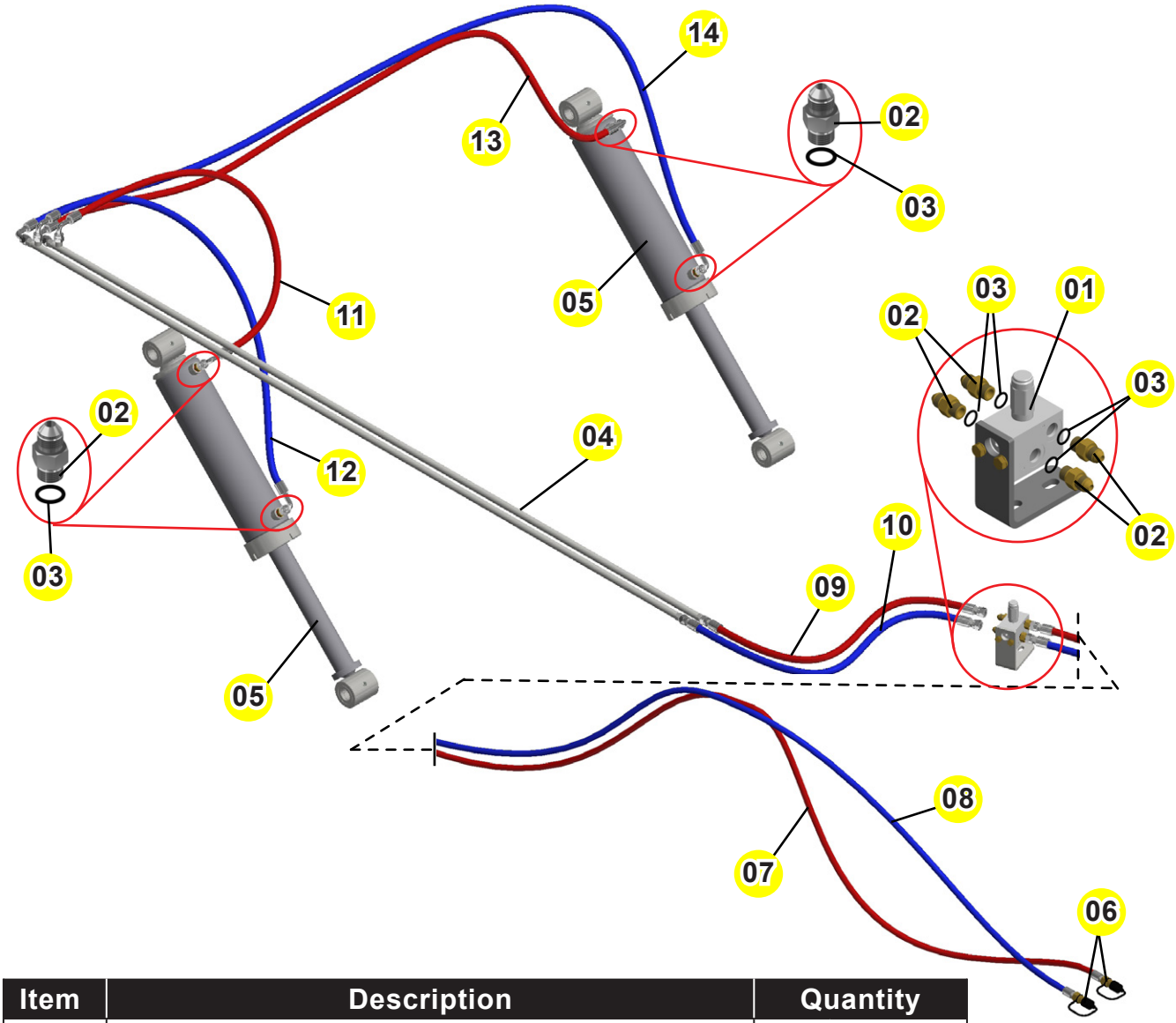
- **Check if the frames are properly supported on the trestles to avoid falls and therefore damages to the equipment.**
- **When assembling the cylinders (G), the hose ports must be installed facing backwards to avoid dirt accumulation.**

Wheelset hydraulic circuit



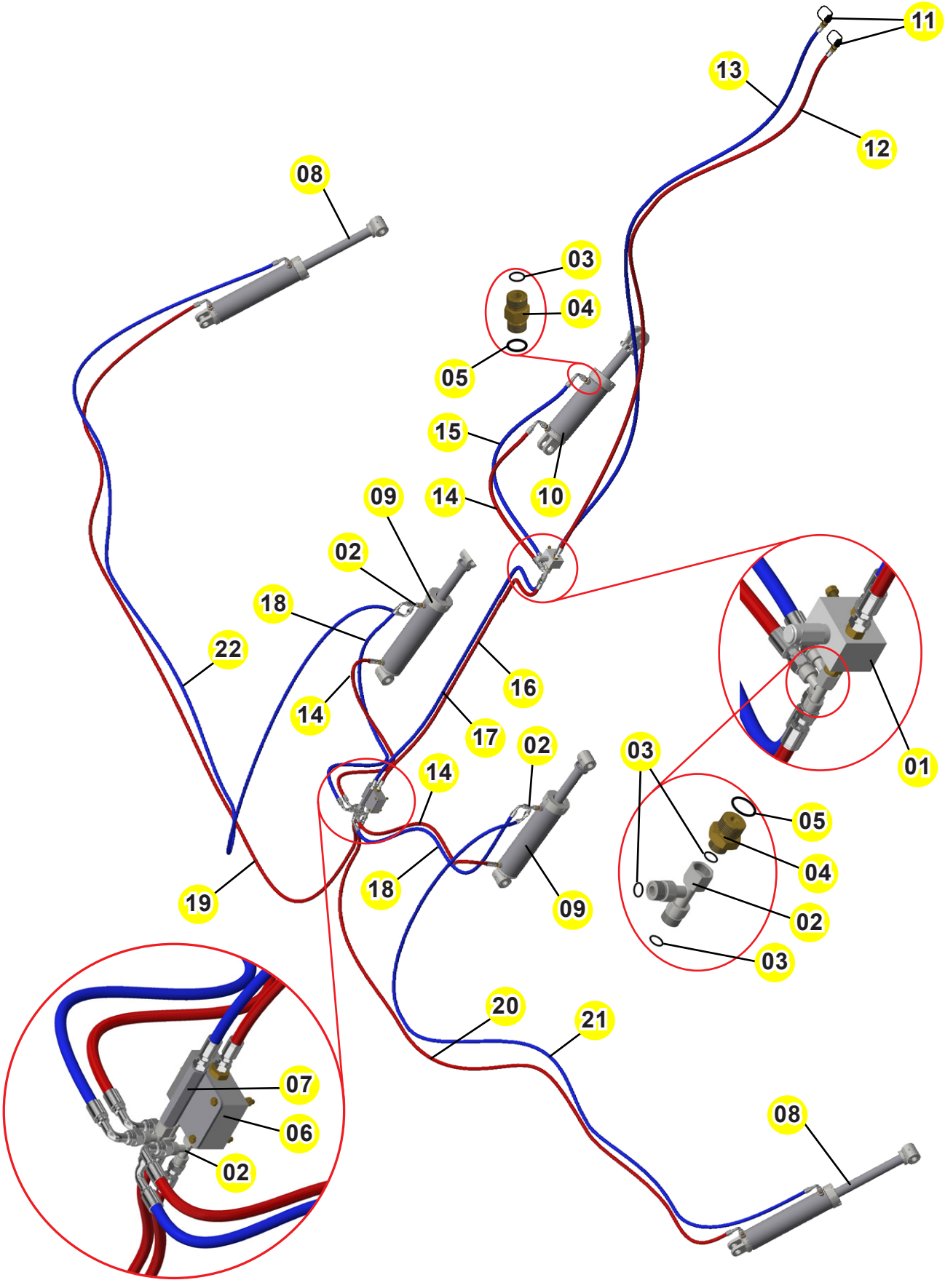
Item	Description	Quantity	
01	Relief valve	01	
02	Nipple 3/4" UNF (Hex. 7/8" x 44)	08	
03	O' Ring 2-114 N 3006-9B	08	
04	T adapter with swivel nut 3/4" 8R6X-S	02	
05	Oil distributor 2150 (3 outlets R.3/4 JIC)	01	
06	Oil distributor 2650 (3 outlets R.3/4 JIC)	01	
07	Hitch bar hydraulic cylinder	01	
08	Wheelset cylinders	02	
09	Male quick coupler 1/2 Npt with cap	02	
10	3/8" x 5500 TR-TM hose	01	Pressure
11	3/8" x 5500 TR-TM hose	01	Return
12	3/8" x 1300 TR-TC hose	01	Pressure
13	3/8" x 1500 TR-TC hose	01	Return
14	3/8" x 800 TR-TR hose	01	Pressure
15	3/8" x 800 TR-TR hose	01	Return
16	3/8" x 800 TC-TC hose	01	Pressure
17	3/8" x 1200 TC-TC hose	01	Return
18	3/8" x 2000 TC-TC hose	01	Pressure
19	3/8" x 2400 TC-TC hose	01	Return

Wheelset hydraulic circuit with stabilizer bar



Item	Description	Quantity	
01	Relief valve	01	
02	Nipple 3/4" UNF (Hex. 7/8" x 44)	08	
03	O' Ring 2-114 N 3006-9B	08	
04	Oil distributor 2380 (03 outlets R.3/4"JIC)	02	
05	Hydraulic cylinder	02	
06	Male quick coupler 1/2 Npt with cap	02	
07	3/8" x 5500 TR-TM hose	01	Pressure
08	3/8" x 5500 TR-TM hose	01	Return
09	3/8" x 800 TR-TR hose	01	Pressure
10	3/8" x 800 TR-TR hose	01	Return
11	3/8" x 800 TC-TC hose	01	Pressure
12	3/8" x 1200 TC-TC hose	01	Return
13	3/8" x 2000 TC-TC hose	01	Pressure
14	3/8" x 2400 TC-TC hose	01	Return

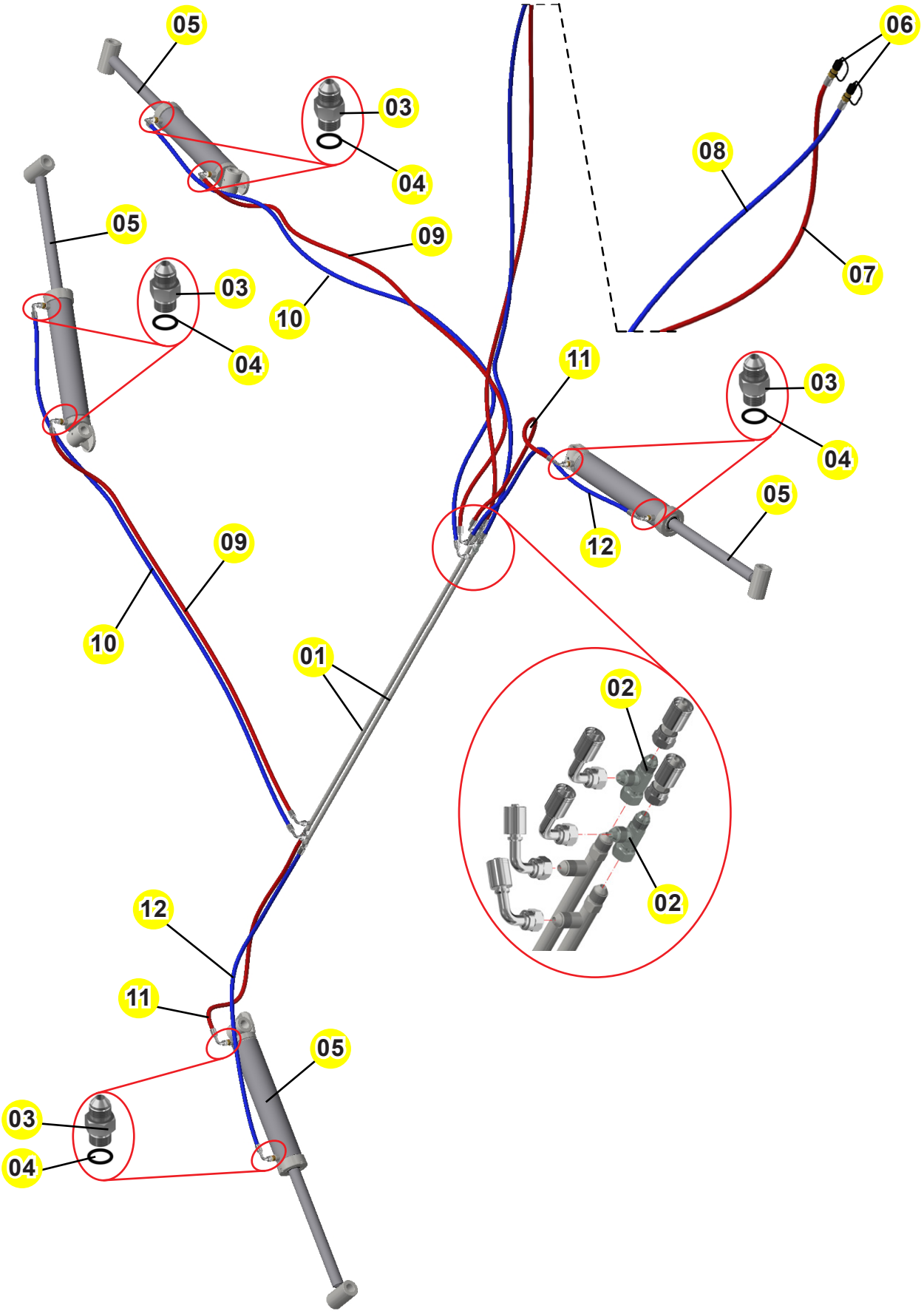
Wheelset hydraulic circuit - GCRO with lateral frames (72 - 80)



Wheelset hydraulic circuit - GCRO with lateral frames (72 - 80)

Item	Description	Quantity	
01	Relief valve	01	
02	T male adapter 1/2" OFS swivel nut	07	
03	O' Ring 2-014 N 3006-9B	32	
04	Nipple R.3/4"UNF x 13/16" UNC OFS x 40	10	
05	O' Ring 2-114 N 3006-9B	10	
06	Flow divider valve FD524512TN66	01	
07	Oil distributor (R.13/16" OFS)	01	
08	Lateral wheelset hydraulic cylinder	02	
09	Central wheelset hydraulic cylinder	02	
10	Drawbar hydraulic cylinder	01	
11	Male quick coupler 1/2" NPT with cap	02	
12	1/2" x 5500 TR-TM hose	01	Pressure
13	1/2" x 5500 TR-TM hose	01	Return
14	1/2" x 1330 TR-TC hose	03	Pressure
15	1/2" x 1000 TR-TC hose	01	Return
16	1/2" x 3200 TR-TR hose	01	Pressure
17	1/2" x 3200 TR-TR hose	01	Return
18	1/2" x 1630 TC-TC hose	02	Return
19	1/2" x 5700 TR-TC hose	01	Pressure
20	1/2" x 4000 TR-TC hose	01	Pressure
21	1/2" x 4500 TC-TC hose	01	Return
22	1/2" x 6000 TC-TC hose	01	Return

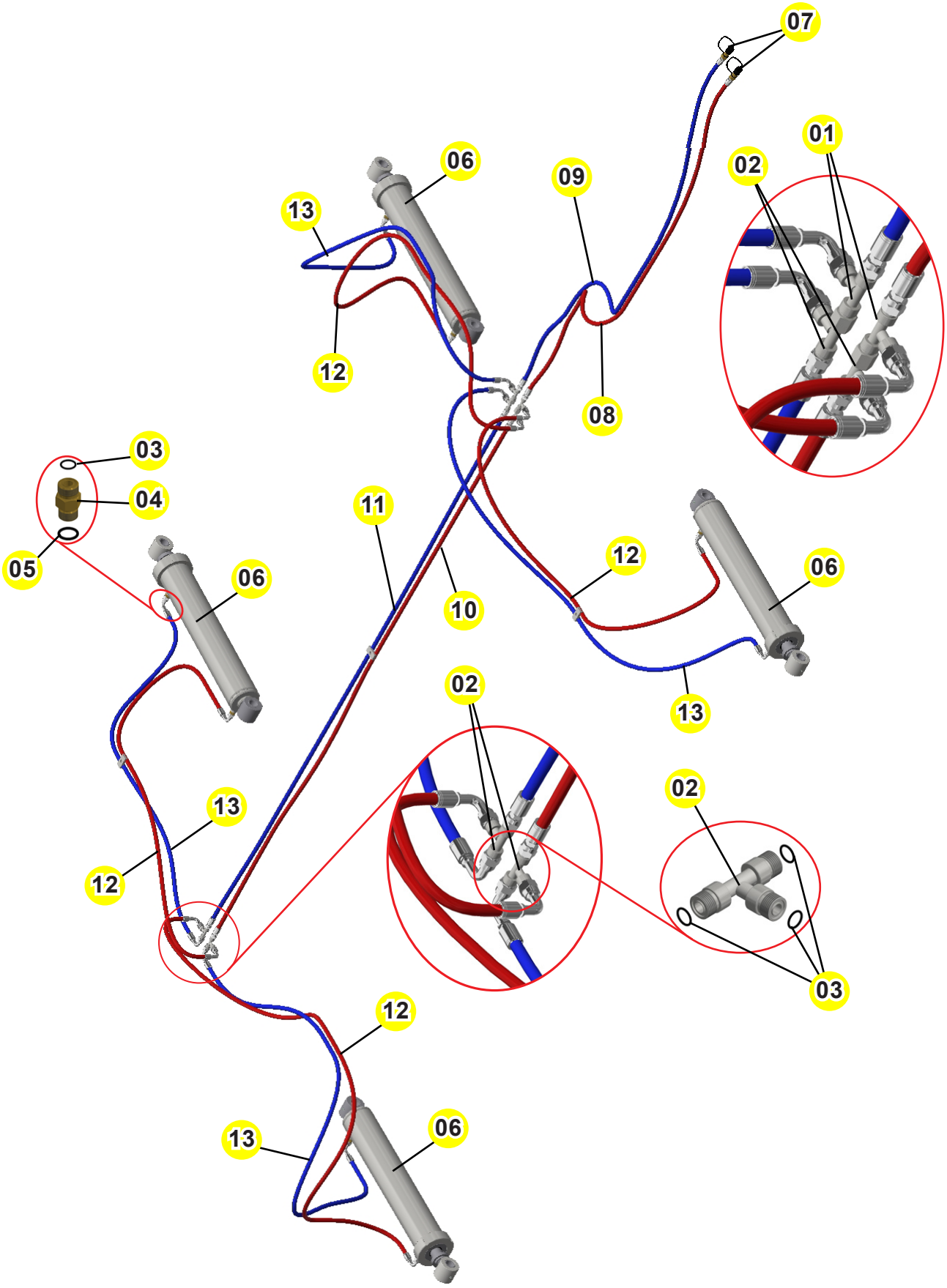
Frame articulation hydraulic circuit - GCRO (44 - 60)



Frame articulation hydraulic circuit - GCRO (44 - 60)

Item	Description	Quantity	
01	Oil distributor 3450(04 outlets R.3/4"JIC)	02	
02	T adapter with swivel nut 3/4" 8R6X-S	02	
03	Nipple 3/4" UNF (Hex. 7/8" x 44)	08	
04	O' Ring 2-114 N 3006-9B	08	
05	Frame articulation hydraulic cylinders	04	
06	Male quick coupler 1/2" NPT with cap	02	
07	3/8" x 6100 TC-TM hose	01	Pressure
08	3/8" x 6100 TC-TM hose	01	Return
09	3/8" x 3600 TC-TC hose	02	Pressure
10	3/8" x 4200 TC-TC hose	02	Return
11	3/8" x 1800 TR-TC hose	02	Pressure
12	3/8" x 2300 TR-TC hose	02	Pressure

Frame articulation hydraulic circuit - GCRO with lateral frames (72 - 80)



Frame articulation hydraulic circuit - GCRO with lateral frames (72 - 80)

Item	Description	Quantity	
01	T male adapter 1/2" OFS	02	
02	T male adapter 1/2" OFS with swivel nut	04	
03	O' Ring 2-014 N 3006-9B	18	
04	Nipple R.3/4"UNF x 13/16" UNC OFS x 40	04	
05	O' Ring 2-114 N 3006-9B	04	
06	Lateral frames hydraulic cylinders	04	
07	Male quick coupler 1/2" NPT with cap	02	
08	1/2" x 6800 TR-TM hose	01	Pressure
09	1/2" x 6800 TR-TM hose	01	Return
10	1/2" x 2600 TR-TR hose	01	Pressure
11	1/2" x 2600 TR-TR hose	01	Return
12	1/2" x 2200 TC-TC hose	04	Pressure
13	1/2" x 2350 TC-TC hose	04	Pressure

Set-up instructions

The following instructions must be carefully observed in order to get the best working performance.

Preparing the tractor

• The addition of water ballasts in the tires and a set of weights on the front part and rear wheels of the tractor are the most used ways to increase the soil traction and give greater stability to the tractor. Check if the tractor is in full conditions before using it.

Preparing the disk harrow

• Check the conditions of all parts retightening nuts and bolts, especially the ones on the disc gangs. If they work loose, there may be damages to the axles and other components;

• Check the tires inflation, always keep the same pressure on the tires;

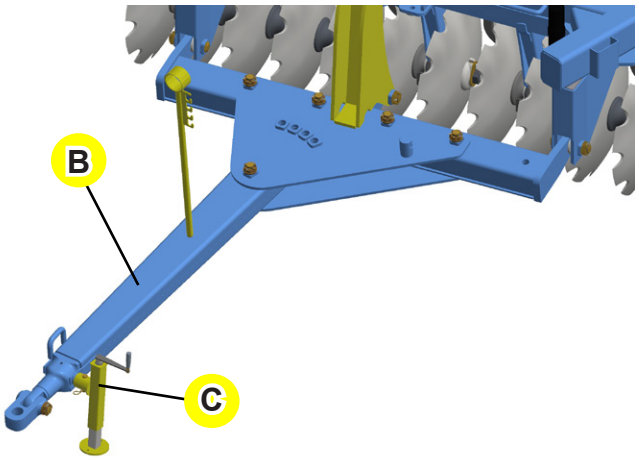
• Lubricate all grease fittings appropriately. (Check the lubrication page).

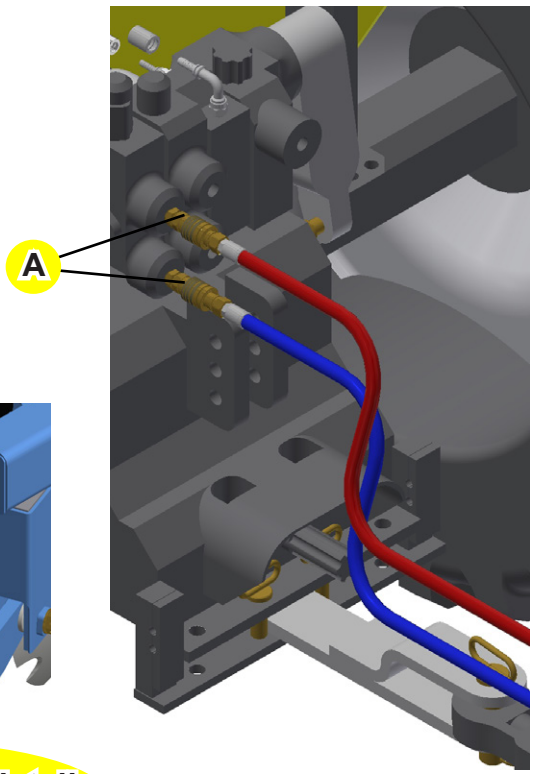
Hitching to the tractor

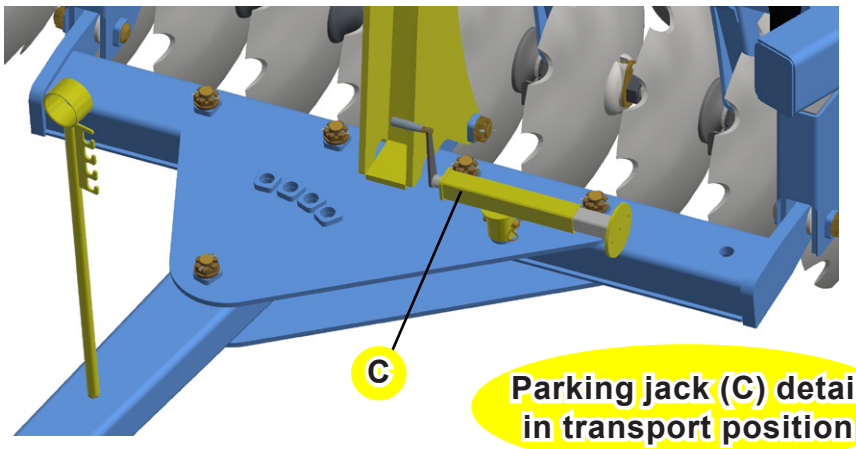
• Approach the tractor and couple the hoses (A) to the quick couplers. To do so, shut down the engine, relieve the control valve pressure by activating the lever a couple times and check if the couplers are clean.

• Activate the control valve to lift the tires until the drawbar is leveled with the tractor bar.

• Couple the drawbar (B) to the tractor drawbar and properly lock it. To facilitate coupling, use the parking jack (C) adjustment.







Parking jack (C) detail in transport position

Tractor PTO

Important recommendations

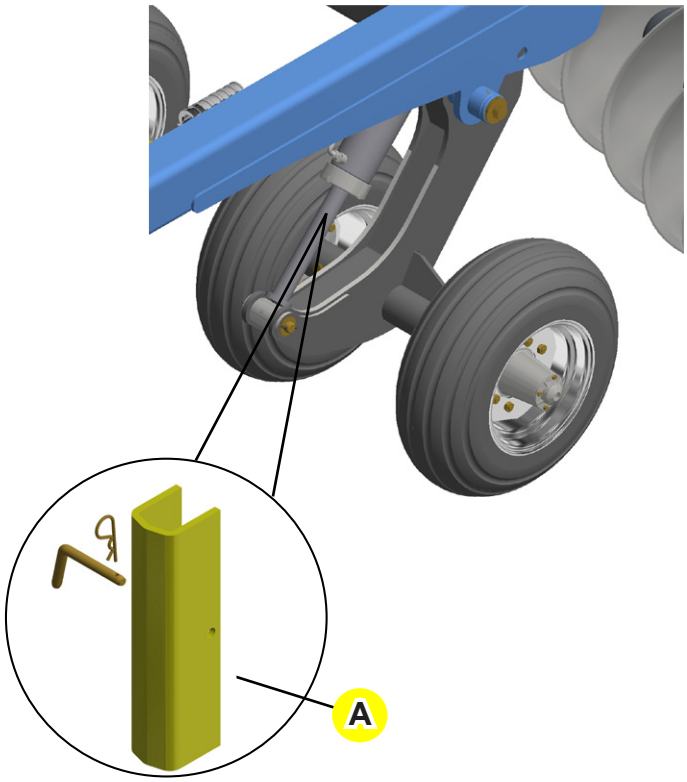
• The tractor drawbar must remain loose during work and fixed during transportation.

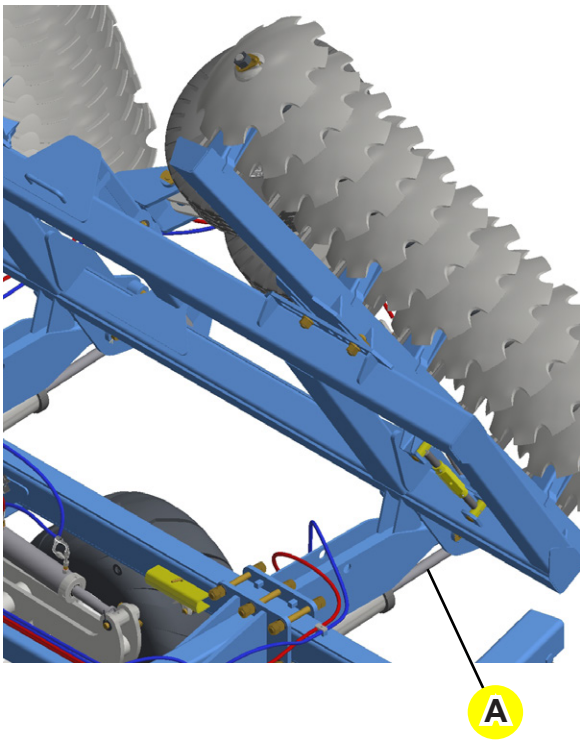
• Never remove the hoses before relieving the control valve pressure.

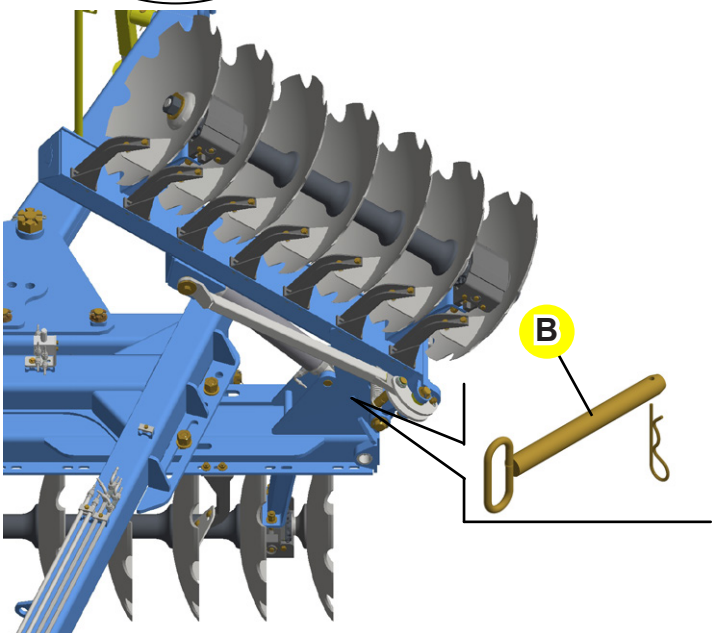
• Before starting working, check the conditions of all parts and retighten nuts and bolts, especially the ones on the disc gangs. If the gangs work loose, it may lead to damages to the axles and other fixation components.

• Lubricate all grease fittings appropriately. (See lubrication instructions).

• To transport the disk harrow over great distances, it is necessary to use the transport locks (A), which are coupled on the hydraulic cylinder rods.







• To transport the disk harrow over great distances, it is necessary to use the axle locks (B), which are coupled to the central frame and to the folding wing.

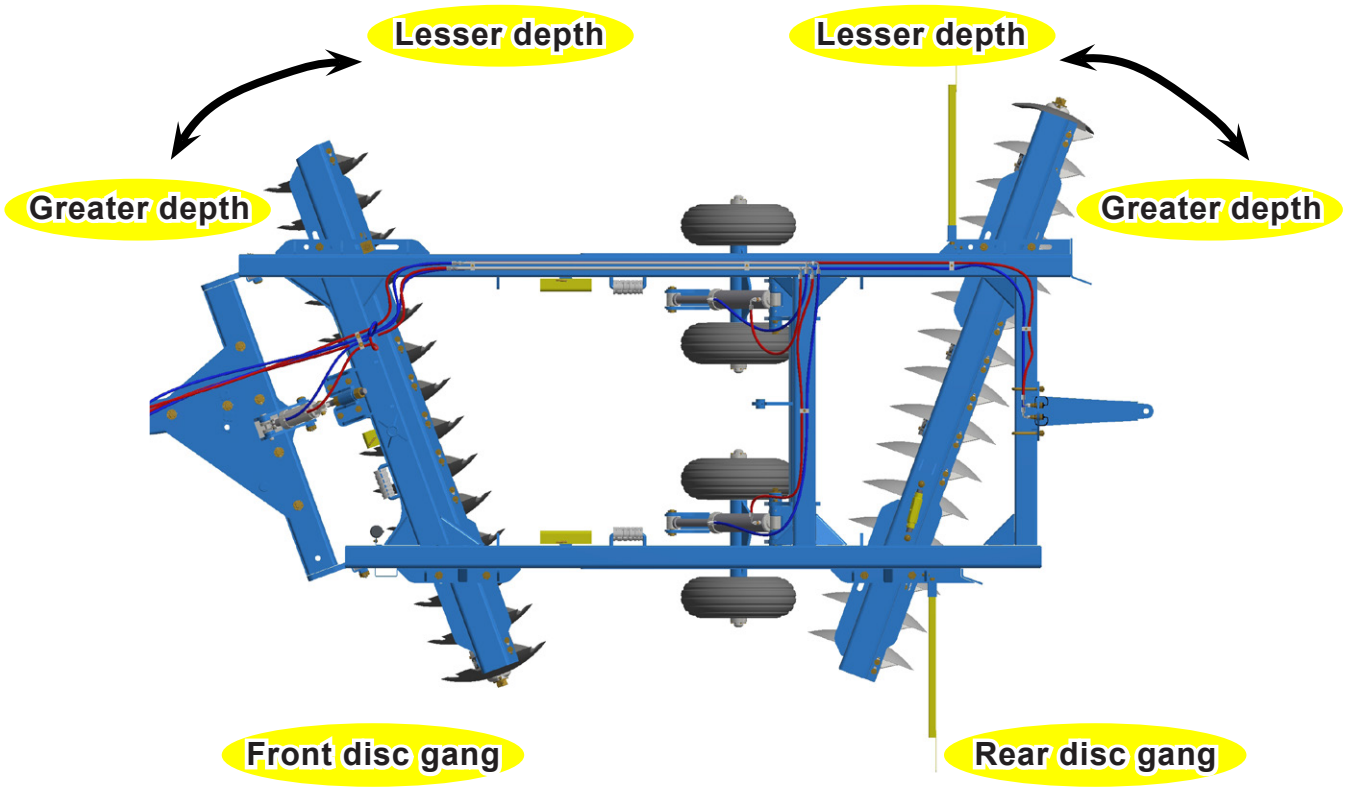
Cutting depth adjustment

The cutting depth is adjusted in two ways:

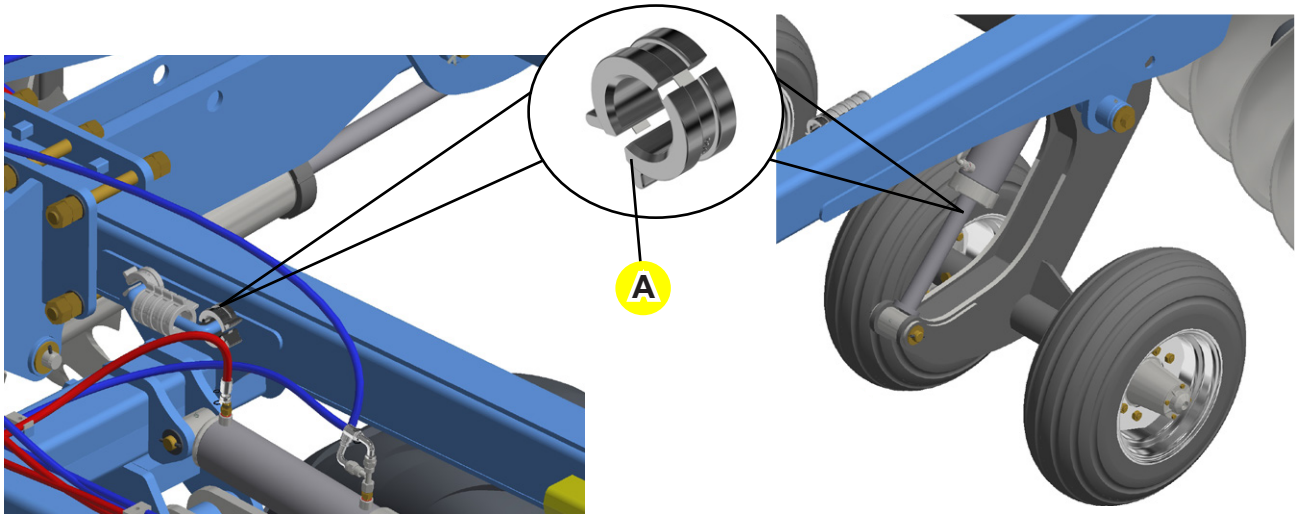
1) Disc gang opening

Increase the opening angle between the disc gangs to work over soil that are harder to penetrate. In light and loose soils, work using a smaller opening angle.

This adjustment is done by changing the disc gang carriers fixation on the main frame.



To control the depth through the tires use the cylinder stops (A) which are placed on the cylinder rods and work as course limiters, thus providing several cutting depth adjustments.



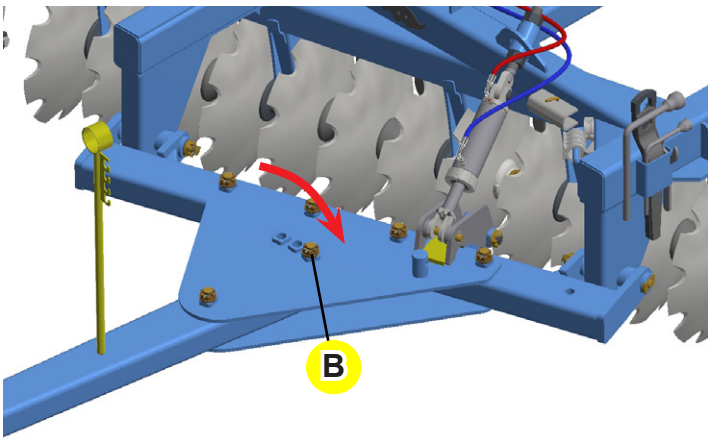
NOTE

- **We recommend to control the depth through the disc gang opening and using the tires only where the disk harrow penetrates excessively.**
- **Use the rod stops (A) to determine a smaller depth of cut, always keeping the same depth adjustment on the disc blades.**

2) Drawbar angle

The holes (B) on the upper and lower plates can set a smaller or greater cutting depth, and also can displace the equipment laterally.

Under normal working conditions, the drawbar must remain centralized as much as possible related to the wheelsets.



IMPORTANT

- **To start the harrowing, we recommend using an average opening on the disc gangs. If a greater penetration is needed, increase the opening angle of the rear gang.**
- **The rear gang usually works with a greater opening than the front one.**
- **The harrowed soil is always on the left hand side of the operator.**
- **Try to make good finishing between passes. Avoid the formation of windrows or untilled strips.**

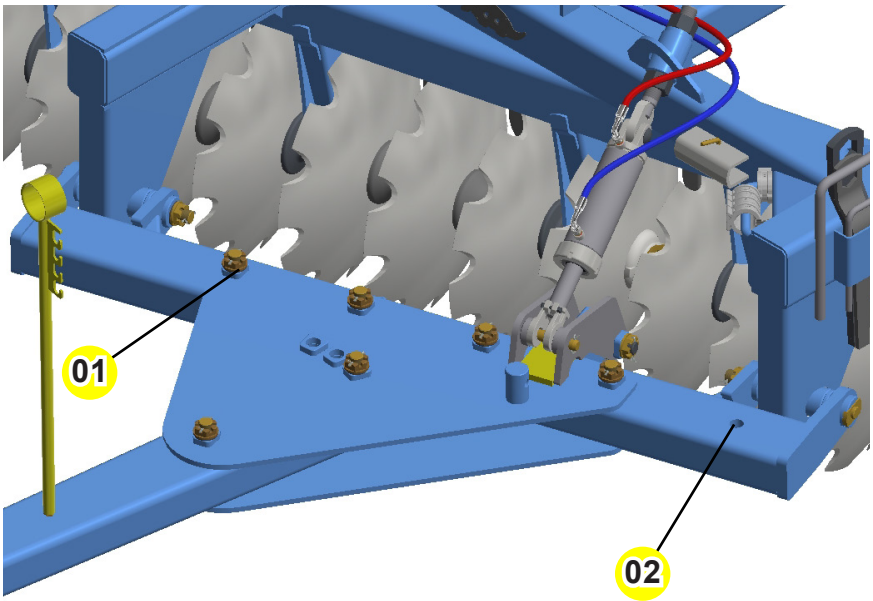
Tractor position related to the previous pass - Lateral displacement

The lateral displacement is used to better position the tractor related to the furrow opened on the previous pass, avoiding leaving a trace and giving reference to the operator.

This positioning is obtained due to the tractor gauge and disk harrow cutting width.

Whenever possible, the tractor must pass over the unworked soil and near the previous furrow.

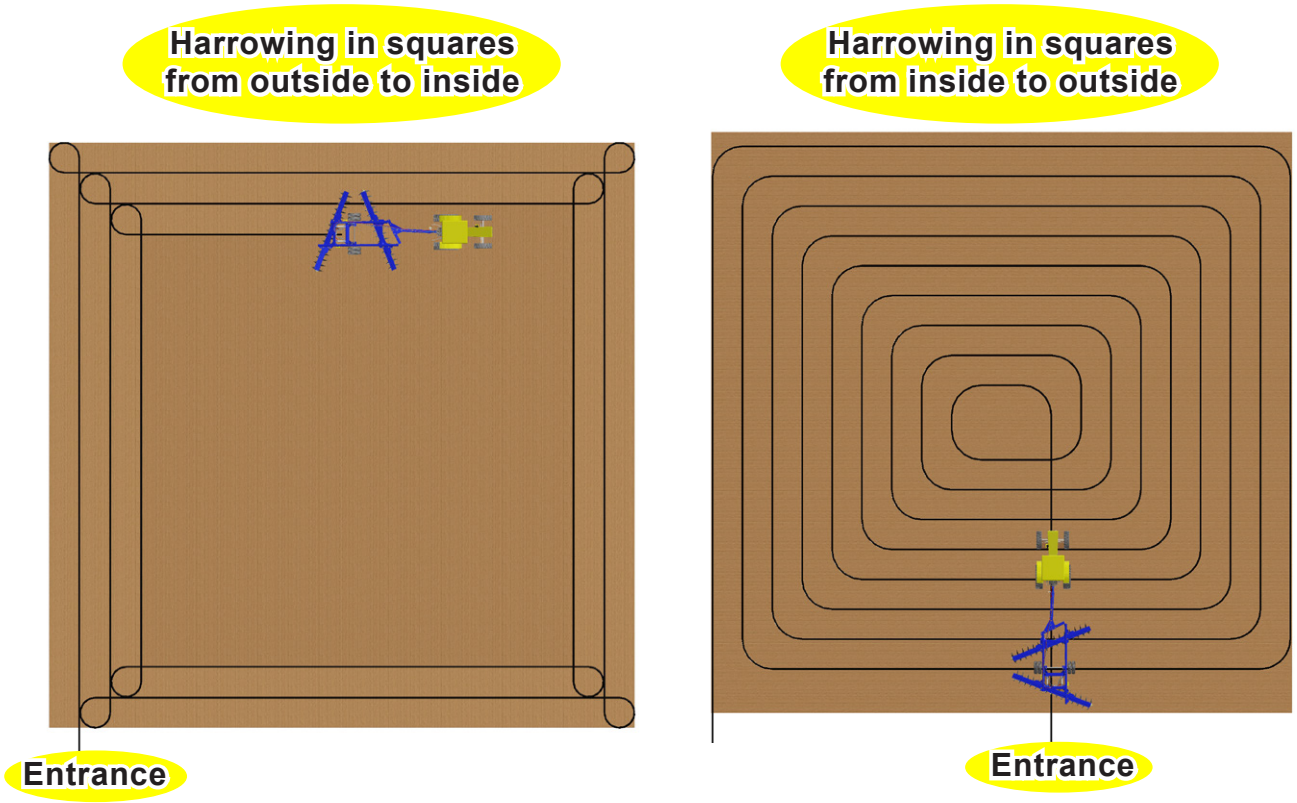
The displacement is done by changing the drawbar on the hitch bar.

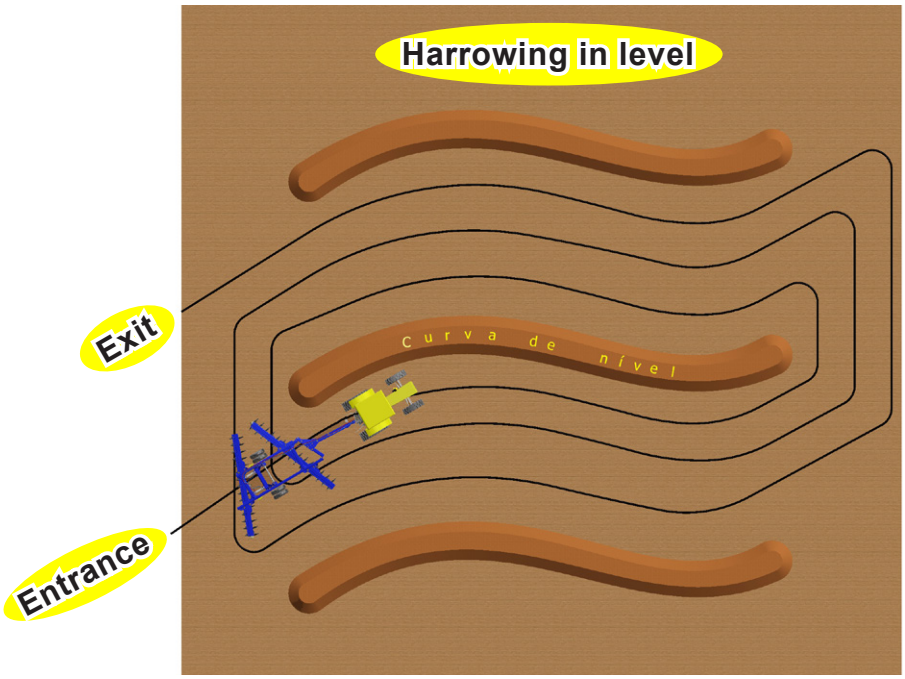


Position #1: Normal position (centralized) - used on most situations.
Position #2: Allows the tractor to get closer to the previous furrow.

Ways to start the harrowing

Regardless of the format and size of the field, the harrowing is made basically in two ways: from outside to the inside or from inside to the outside.



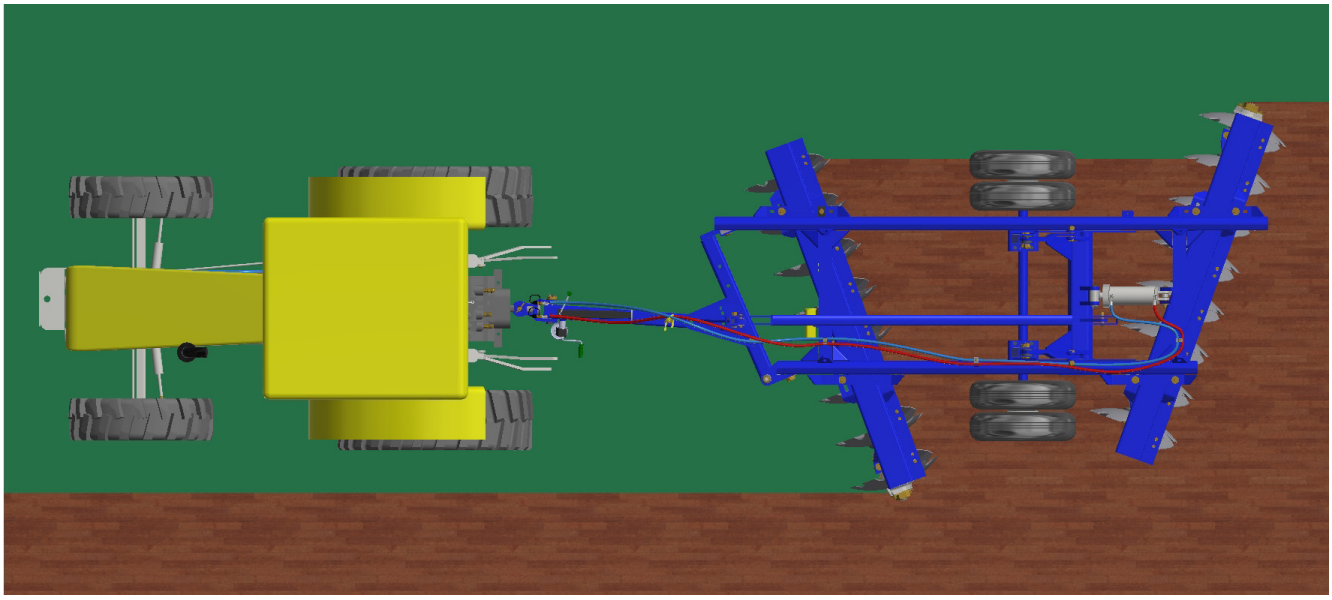


IMPORTANT

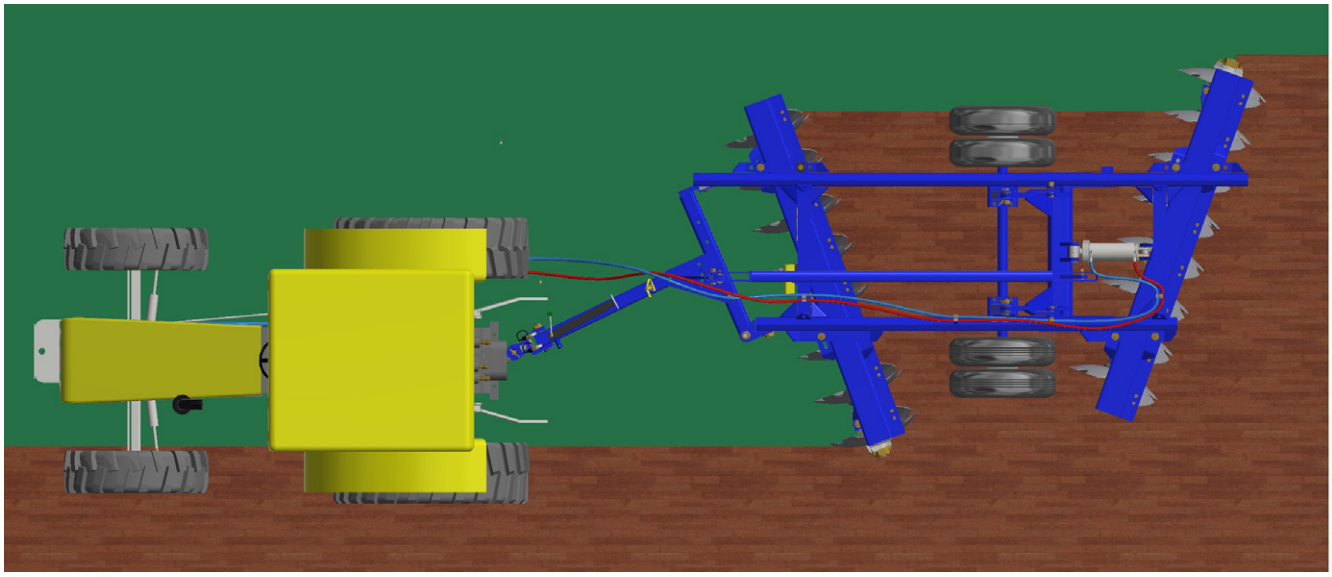
- **Note that the harrowed soil is always on the left hand side of the operator.**
- **Being the disc gangs lowered, only maneuver to the left hand side.**

Correct way of use

Correct



Incorrect

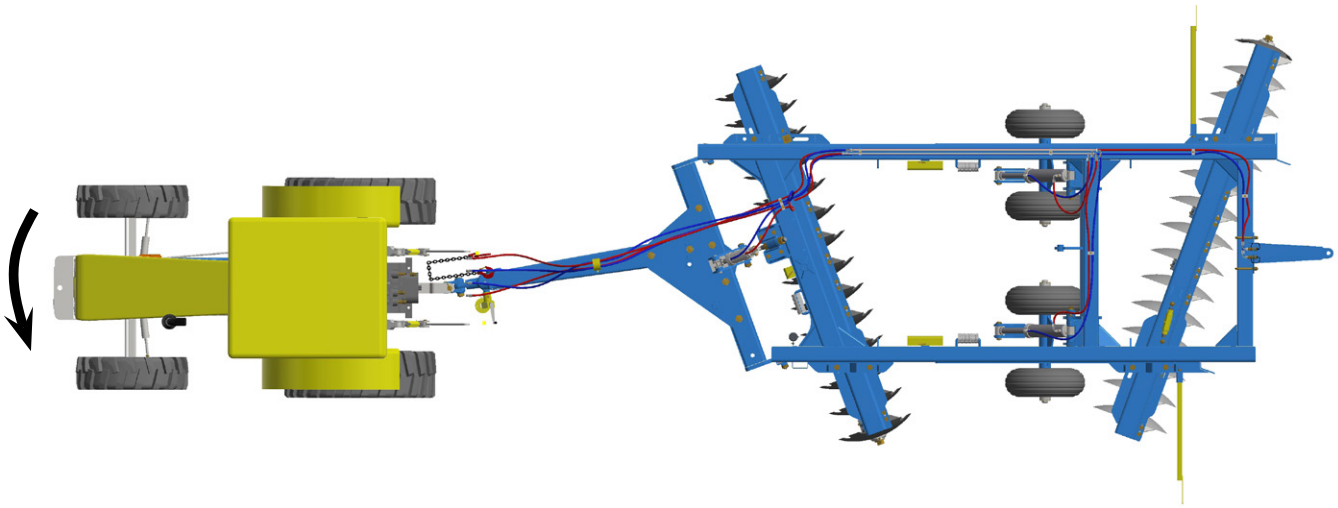


IMPORTANT

- Never work with the tires over the already harrowed soil.

Direction of the maneuvers

As previously mentioned, this disk harrow provides several working angles to operate properly in all types of soil. However, this disk harrow requires certain care during operations, like never make maneuvers to the right, because the angle formed on its vertex transmits great effort to the equipment, overloading traction components such as the hitch bar, the drawbar and other fixation parts.



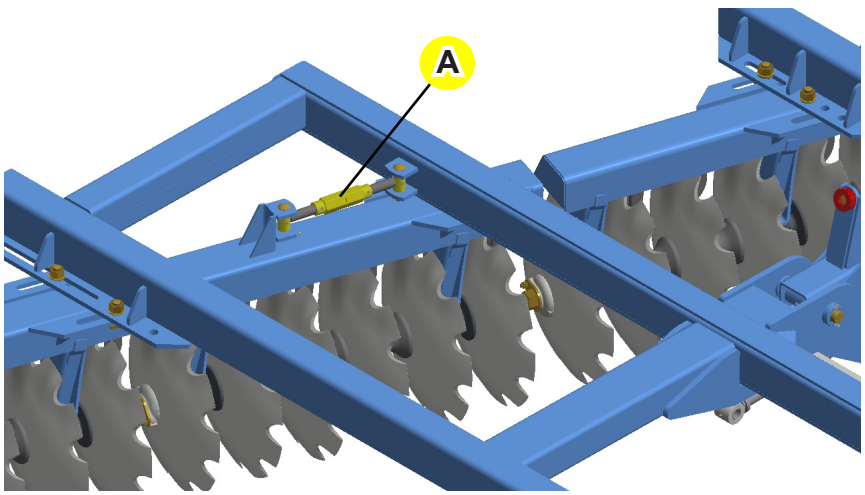
ATTENTION

- **It is necessary to maneuver to the left to avoid overloads and to allow that the equipment operates normally. Following these instructions also avoids the undesirable formation of large furrows in the maneuver spots.**

Frames alignment

To align the frames related to the front and rear disc gangs, use the extensor (A).

Loosen up the bolts that join the frame with the disc carriers and use the wrench (C) from the 'set of wrenches' page to make adjustments if necessary.



Troubleshooting guide

PROBLEM	CAUSES	POSSIBLE SOLUTIONS
Tractor steering wheel pulling to the right.	Too much angle on the front gang or too small on the rear gang.	Reduce the angle from the front gang or increase the angle from the rear gang.
	Drawbar touching the stop to the left.	Move the drawbar to the left.
Disc gangs are not on harrowing level.	Front and rear disc gangs are not operating on the same depth.	Adjust the angle of the disc gangs.
Furrow opened on the left side.	Speed is too low for the soil conditions.	Increase the speed.
	Tractor being positioned far on the right.	Position the tractor in a way that the front disc on the left pass on the edge of the furrow.
	Incorrect adjustment of the disc gangs laterally.	Move the rear disc gang to the left or the front disc gang to the right.
Windrows forming on the left side.	Insufficient overlapping. Incorrect rear disc gang adjustment.	If windrows are forming, move the front disc gang to the left or the rear disc gang to the right.
Locked disc gangs.	Wet field.	Let the field dry out or penetrate the disc blade superficially to help the drying process.
	Maximum angle on the disc gangs adjustment.	Reduce the angle.
	Deep penetration on wet soil.	Use the rod stops to decrease the depth. Lift the disc blade to reduce the penetration.
	Worn out / incorrectly adjusted scrapers.	Adjust or change the scrapers when necessary.

Troubleshooting guide

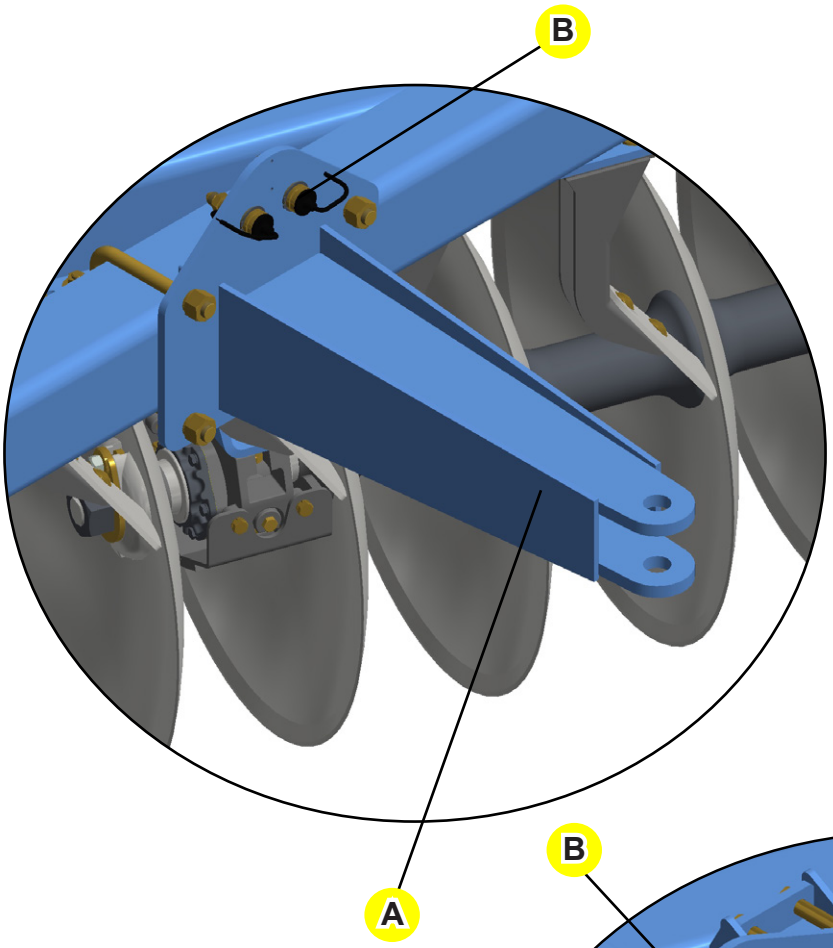
PROBLEM	CAUSES	POSSIBLE SOLUTIONS
Quick couplers do not adapt.	Different type of quick couplers.	Use male and female quick couplers from the same type.
Hoses leaking with fixed terminals.	Insufficient tightening.	Retighten carefully.
	Lack of sealing material on the thread.	Use thread sealing tape and retighten carefully.
Hydraulic cylinder leaking.	Damaged repairings.	Replace the repairings.
	Damaged rod.	Replace the rod.
	Oil with impurities.	Replace the oil, repairings and filter elements.
	Working pressure superior than the recommended one.	Adjust the control valve using the relief valve with the aid of a pressure gauge. Normal pressure: 180 Kgf/cm^2.
Quick couplers leaking.	Insufficient tightening.	Retighten carefully.
	Lack of sealing material on the thread.	Use thread sealing tape and retighten carefully.
	Damaged repairings.	Replace the repairings.

Operations - Important points

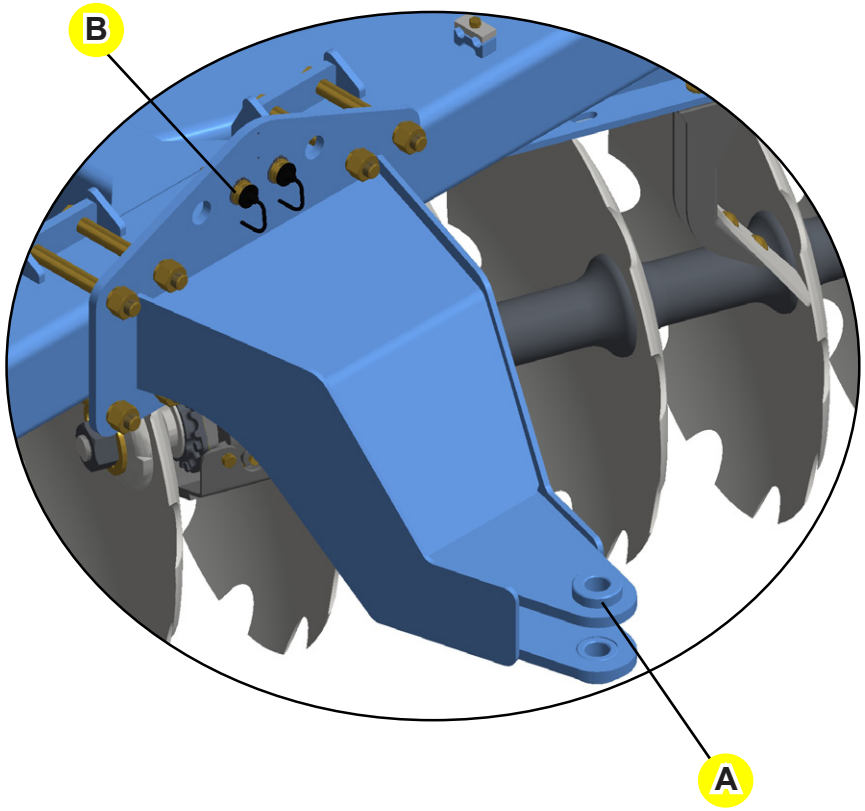
- Retighten nuts and bolts after the first day of service and check the conditions of all pins and cotter pins. Then, retighten every 24 operating hours.
- Special attention should be given to the disc gangs, retightening daily during the first week of use. Then, retighten periodically.
- Carefully observe the lubrication intervals.
- The tires inflation must always be done with the aid of a contention device (tire inflation cage).
- The correct tire inflation is important; follow the instructions on the maintenance section of this manual to properly inflate them.
- Choose a gear that allows the tractor to maintain certain power reserve, ensuring against unforeseen efforts.
- Always carry out the operations on a controlled and careful manner.
- The work speed is relative to the tractor gear and can only be determined by local conditions. We adopted an average 5 to 7 km/h, which is not advisable to overcome to maintain service efficiency and avoid possible damages to the equipment.
- Activate the hydraulic cylinder gradually to lift the disc gangs before maneuvering.
- The harrowed ground always stays in the left hand side of the operator.
- Remove pieces of wood or any object that may attach in the disc blades.
- The disk harrow activation to open or close the gangs must be done gradually, being the tractor in movement.
- Do not check eventual leaks using your hands. The high pressure may cause body injury. Use cardboard or another suitable object.
- Use a tractor with appropriate size and power to work with the disk harrow.
- During working, do not maneuver without totally lifting the equipment, as the angle formed by the disc gangs transmits great effort to the equipment, thus overloading the traction components.
- Relieve the control valve pressure before disconnecting the quick couplers and when doing any verification on the hydraulic circuit.
- The tractor drawbar must remain loose during working and fixed during transportation.
- During working or transportation, never allow passengers on the tractor and equipment.
- As previously mentioned, this disk harrow has several settings. However, only the local conditions can determine its best adjustment.

Rear hitch

Optionally, Marchesan supplies the rear hitch (A), assembled with hydraulic outputs (B) to allow the assembly of another acessory or equipment on the disk harrow.

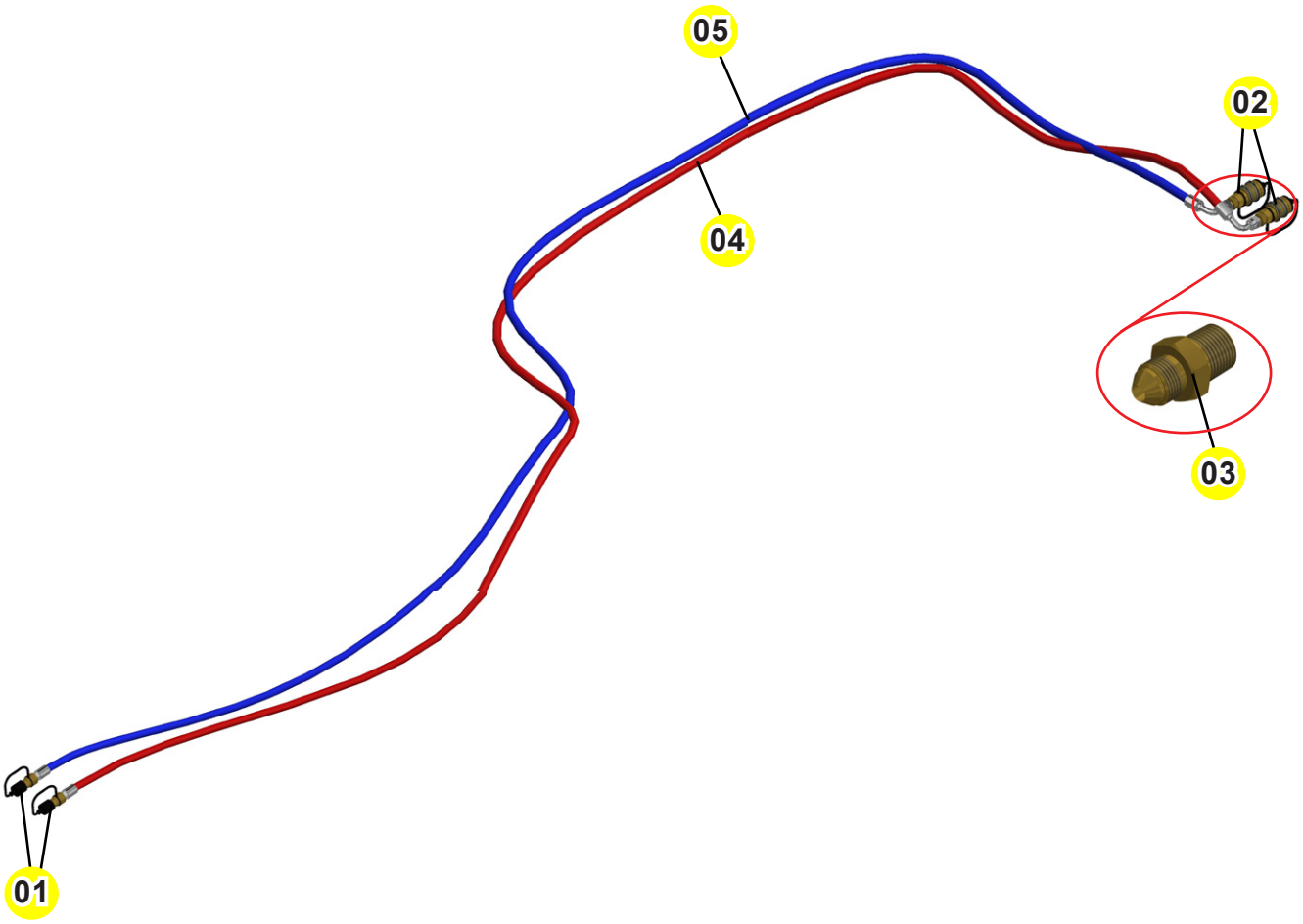


Hitch for a GCRO with 28 - 48 disc blades



Hitch for a GCRO with 52 - 80 disc blades

Rear hitch hydraulic circuit



Item	Description	Quantity	
01	Male quick coupler 1/2 Npt with cap	02	
02	Female quick coupler 1/2" with cap	02	
03	Nipple 1/2"NPT x 3/4"UNF x 48	02	
07	3/8" x 11500 TC-TM hose	01	Pressure
08	3/8" x 11500 TC-TM hose	01	Return

Lubrication

To reduce the wear caused by the friction between the moving parts of the equipment, it is necessary to execute a correct lubrication, as indicated below.

1) Every 24 operating hours, lubricate the articulation through the grease fittings in the following way:

• Be sure about the lubricant quality, with relation to its efficiency and purity, avoiding the use of products contaminated by water, earth or others.

• Remove the remainder old grease around the articulations.

• Clean the grease fittings with a cloth before inserting lubricant and replace the damaged ones.

• Apply an enough amount of new grease.

• Use medium consistency grease.

2) The lubrication of the bearings with grease rollers must be done on the already aforementioned period. (Every 24 hours).

2.1) The roller bearings with oil bath work in constant lubrication, but it is still necessary to give them the following attention:

• In a flat place, check the oil level of each bearing before using the equipment for the first time and every day of the first week.

• Then, start to check weekly.

• Change all the oil every 1,000 working hours.

• Use SAE 90 mineral oil only.

NOTE

The suitable level is when the oil reaches the hole of the plug, being the equipment in a flat place.

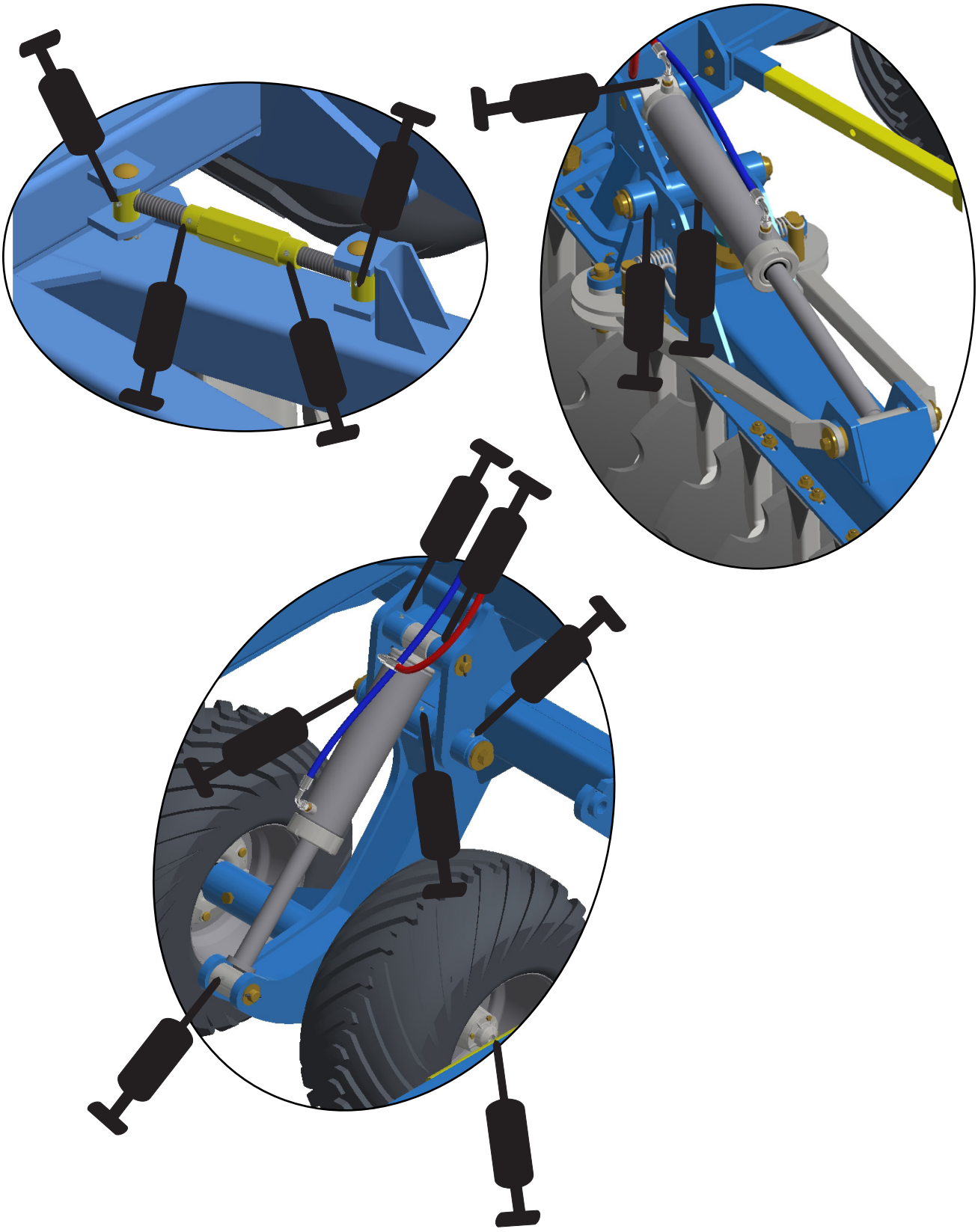
Oil volume on the bearings:

• GCRO 28 - 60 disc blades = 200 ml;

• GCRO 72 - 80 disc blades = 190 ml.

Lubrication points

Lubricate every 24 operating hours.



ATTENTION **Lubricate the points shown above and all grease fittings as well.**

Hydraulic cylinder maintenance

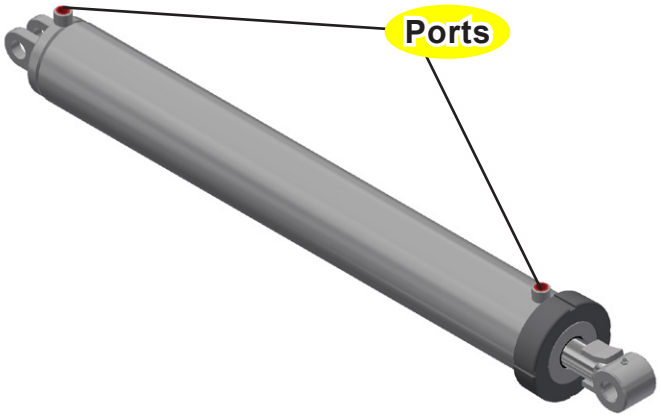
When cylinder repair is required, clean off unit, disconnect hoses and plug ports before removing cylinder.

When removed, open the cylinder ports and drain the cylinder's hydraulic fluid.

Examine the type of cylinder. Make sure you have the correct tools for the job.

You may require the following tools:

- Proper seal kit;
- Screwdriver and rubber cable;
- Pliers and wrenches.



IMPORTANT **Never make any verification or maintenance if the system is pressurized.**

Disassembly:

1) Remove the end cap (A);
2) Carefully remove inner assemblies (B);
3) Disassemble the piston (C) from the rod assembly by removing lock nut (D);
4) Slide off gland assembly (E) and end cap (A);
5) Remove seals and inspect all parts for damage;
6) Install new seals and replace damaged parts with new components;
7) Inspect the inside of the cylinder barrel, piston, rod and other polished parts for burrs and scratches. Smooth areas as needed with an emery cloth.

NOTE **Do not clamp rod by chrome surface.**

Hydraulic cylinder maintenance

Reassembly:

1) Reinstall rod through gland (E) and end cap (A);

2) Secure piston (C) to rod with lock nut (D). Torque lock nut to proper value (consult torque table on the "important data" section);

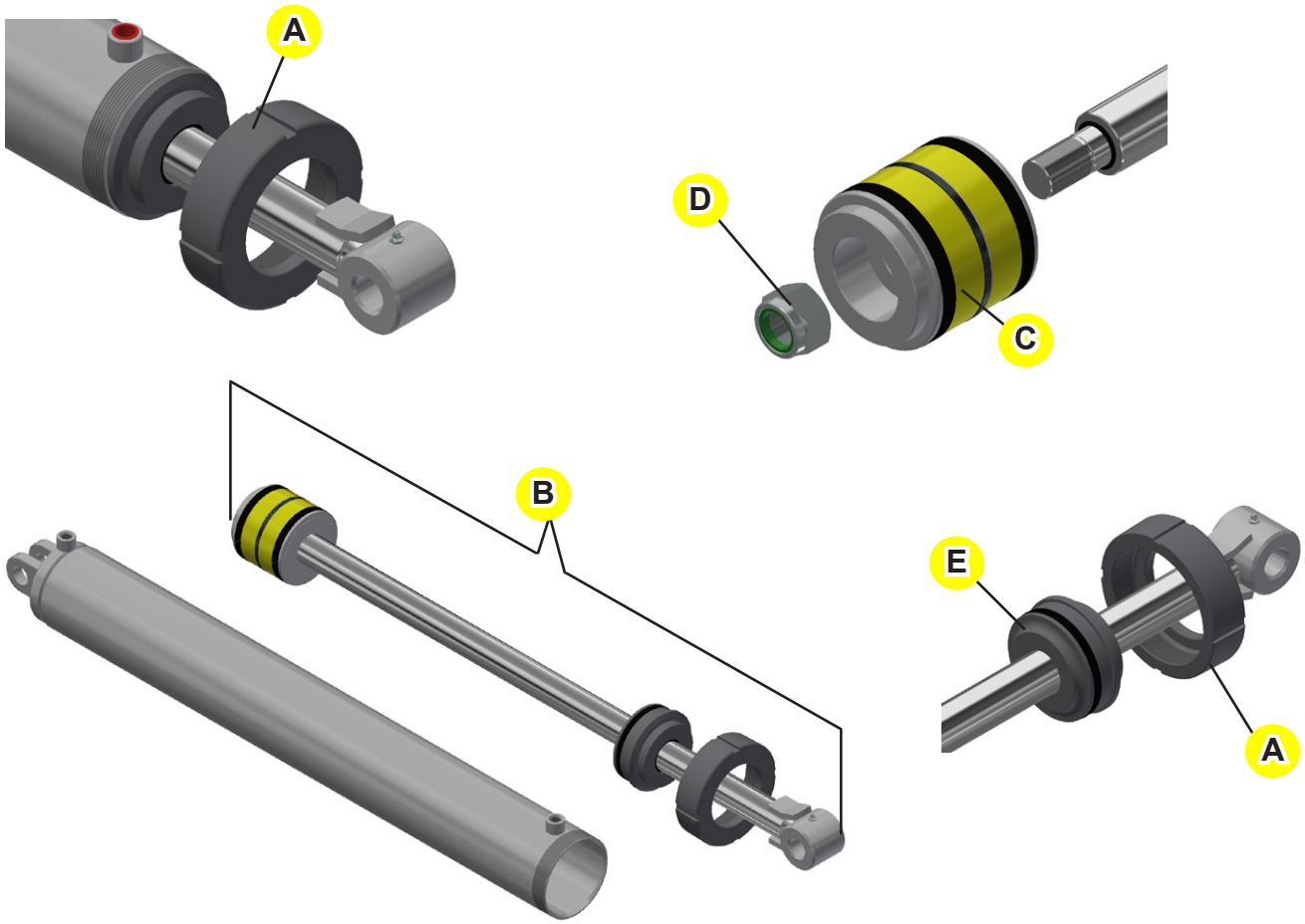
3) Lube inside of barrel, piston seals, and gland seals with hydraulic oil;

4) With cylinder body held gently, insert the inner assemblies (B) using a slight rocking motion;

5) Apply Loctite 277 before installing the cylinder end cap (A);

6) Torque cylinder end cap (A) to 400 lb.ft (600 N.m).

IMPORTANT **Insert the gland (E) on the cylinder head and align it with the tube so it will fit correctly on the cylinder barrel.**



NOTE **Do not clamp rod by chrome surface.**

General maintenance

During offseason wash the equipment, repair any damaged paintwork, protect the disc blades with oil, lubricate all grease fittings and store the equipment in a covered and dry place, avoiding the direct contact of the disc blades with the soil.

The disc blades must be replaced as soon as they are providing a low yield, mainly because of the reduction in its diameter, loss of cut and other damages that may occur during the job.

After 24 working hours, the bolts on the equipment must be checked to see if they are properly tightened. To assure a great performance and avoid wear and rupture, these bolts must be tightened every so often.

Check wear occurence on all moving parts. Replace any part, if necessary.

Replace the missing or damaged safety decals. Marchesan supplies these decals, upon request and indication of their respective serial numbers. The operator must know the need and importance to keep the decals in the proper place and in good conditions. The operator also have to know the need to follow the instructions, as the lack of safety may increase the risk of accidents.

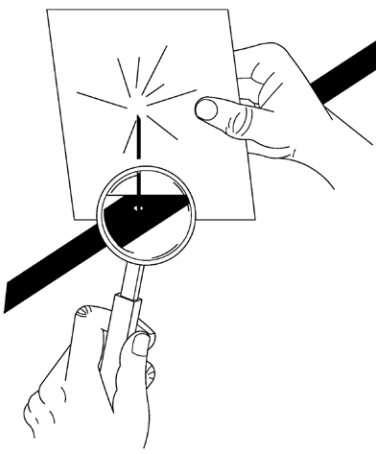
Hydraulic safety

Make sure that all components in the hydraulic system are kept in good condition and are clean.

Inspect the hydraulic system periodically or when lack of power/defective reposition of oil is being noticed. To do so, tight the connections that have leaks and replace the hoses that are near its expiration date or the ones that are cut, with fissures or dried out. Couple the hoses in a way that they will always work flexing but never twisting or tractioning.

Do not attempt any makeshift repairs to the hydraulic lines, fittings or hoses by using tape, clamps or cements. The hydraulic system operates under extremely high-pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.

Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak.



If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface. If this doctor is not aware of this kind of problem, ask for a reference or look for another one to find the proper treatment.

Before applying pressure to the system, make sure all components are tight and that lines, hoses and couplings are not damaged.

Tires inflation

• The tires must always be properly inflated to avoid premature wear for excess or lack of pressure.

• Do not attempt to mount the tires without experience and adequate equipment.

• Maintain the correct tire pressure. Never inflate the tires beyond the recommended pressure.

• Never weld or heat a wheel. The heat can cause increase in pressure, with a risk of tire explosion.

• Welding can compromise the structure of the wheel or distort it.

• When filling the tires, make sure the hose is long enough for you to stand. Also, do this process in a safety cage.

• 400 / 60-14 L Treleborg tire **(52 PSI).**

Used on the GCRO 7010 model with 44 / 48 / 52 / 56 / 60 disc blades.

Used on the GCRO 7012 model with 28 / 32 / 36 / 40 / 44 / 48 / 50 / 52/ 56 disc blades.

• 11L - 15 - 12 L tire **(52 PSI).**

Used on the GCRO 7010 model with 28 / 32 / 36 / 40 disc blades.

• 600 / 50 - 22.5 - 16 L tire **(41 PSI).**

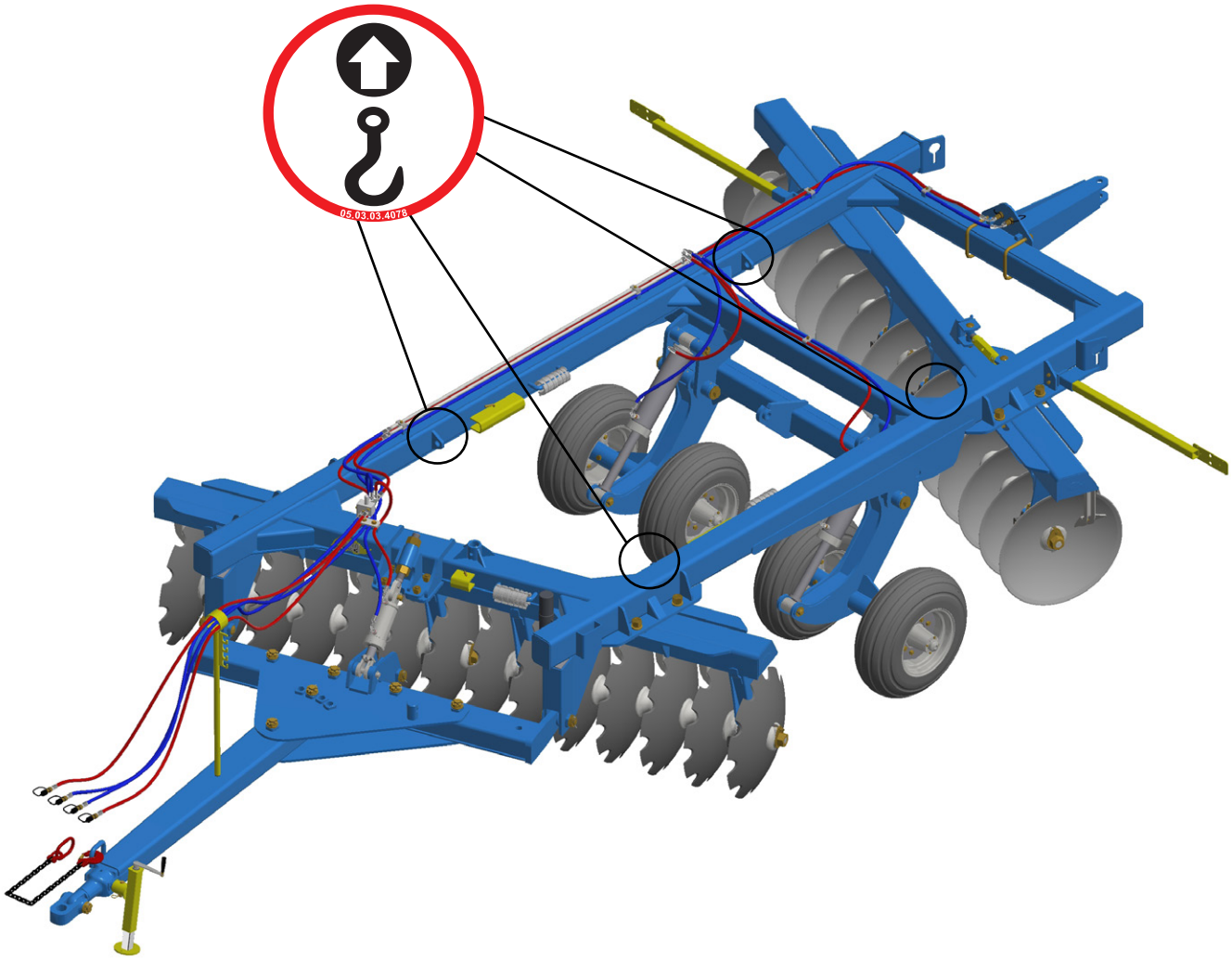
Used on the GCRO 7010 model with 72 / 76 / 80 disc blades.

• 9.00 x 20 - 14 L tire **(110 PSI).**

Used on the GCRO 7010 model with 72 / 76 / 80 disc blades.

Lifting points

This equipment has adequate lifting points located on the frame. When lifting with a hoist, it is essential to hitch the cables to the points as shown below.



Use chains, of at least 3 meters long, to lift the equipment safely.

Use the adequate points for lifting and be sure that the equipment is safe. Avoid accidents.

Always keep a safe distance from the equipment.

Calculation of hourly income

To calculate the hourly income, use the following calculation:

$$\mathbf{R} = \frac{L \times V \times E}{X}$$

Where:

R = Hourly income;

L = Working width (meters);

V = Average speed of the tractor (meters per hour);

E = Efficiency: 0.90;

X = Hectare value = 10,000 m^2.

Example - GCRO 7010 with 36 disc blades:

R = ?

L = 4.6 m

V = 6,000 m/h (6 km/h)

E = 0.90

X = 10,000 m^2

$$\mathbf{R} = \frac{4.6\ m \times 6{,}000 \times 0.90}{10{,}000}$$

R = 2.48 hectares per hour.

NOTE **The hourly income can vary by physical factors such as humidity, slope, soil hardness, appropriate adjustments and especially the working speed.**

Based on this calculation, the table on the following page shows the average hourly income and also for a day, that is, nine (9) hours of work.

Average income table

Model	Number of disc blades	Working width (mm)	Hourly income (ha)	Daily income (ha)
GCRO 7010	28	3,620	1.94	17.49
	32	4,120	2.22	20.02
	36	4,625	2.48	22.84
	40	5,135	2.81	25.27
	44	5,645	3.13	28.14
	44D	5,530	2.98	26.87
	48	6,150	3.36	30.23
	48D	6,160	3.32	29.93
	52	6,730	3.63	32.71
	56	7,240	3.91	35.19
	60	7,772	4.20	37.77
	72	9,540	5.15	46.36
	76	10,065	5.44	48.92
	80	10,445	5.64	50.76

Model	Number of disc blades	Working width (mm)	Hourly income (ha)	Daily income (ha)
GCRO 7012	28	3,985	2.15	19.36
	32	4,555	2.42	21.75
	36	5,115	2.72	24.45
	40	5,665	3.02	27.17
	50	7,080	3.82	34.41
	52	7,380	3.99	35.87
	56	7,940	4.29	38.59

NOTE **An average speed of 6 km/h was adopted to prepare the table above.**

To know how many hours will be spent to work in a certain previously known area, it is necessary to divide the value of the area by the hourly income.

Example: An area of 65 hectares to be worked with a GCRO 7010 model that has 36 disc blades (Hourly income = 2.48 ha).

So: $\frac{65}{2.48} = 26.20$

Approximately will be spent 26 (twenty-six) hours to work in an area of 65 hectares.

Torque table

The table below gives correct torque values for various bolts. Tighten all bolts to the torques specified in chart unless otherwise noted. Check the tightness of bolts periodically, using this bolt torque chart as a guide. Replace hardware with the same strength (Grade/ Class) bolt.

TORQUE VALUES CHART

Bolt Diameter	Grade 2		Grade 5		Grade 8	
	Coarse	Fine	Coarse	Fine	Coarse	Fine
1/4”	50 In. Lbs.	56 In. Lbs.	76 In. Lbs.	87 In. Lbs.	9 Ft. Lbs.	10 Ft. Lbs.
5/16”	8 Ft. Lbs.	9 Ft. Lbs.	13 Ft. Lbs.	14 Ft. Lbs.	18 Ft. Lbs.	20 Ft. Lbs.
3/8”	15 Ft. Lbs.	17 Ft. Lbs.	23 Ft. Lbs.	26 Ft. Lbs.	33 Ft. Lbs.	37 Ft. Lbs.
7/16”	25 Ft. Lbs.	27 Ft. Lbs.	37 Ft. Lbs.	41 Ft. Lbs.	52 Ft. Lbs.	58 Ft. Lbs.
1/2”	35 Ft. Lbs.	40 Ft. Lbs.	57 Ft. Lbs.	64 Ft. Lbs.	80 Ft. Lbs.	90 Ft. Lbs.
9/16”	50 Ft. Lbs.	60 Ft. Lbs.	80 Ft. Lbs.	90 Ft. Lbs.	115 Ft. Lbs.	130 Ft. Lbs.
5/8”	70 Ft. Lbs.	80 Ft. Lbs.	110 Ft. Lbs.	125 Ft. Lbs.	160 Ft. Lbs.	180 Ft. Lbs.
3/4”	130 Ft. Lbs.	145 Ft. Lbs.	200 Ft. Lbs.	220 Ft. Lbs.	280 Ft. Lbs.	315 Ft. Lbs.
7/8”	125 Ft. Lbs.	140 Ft. Lbs.	320 Ft. Lbs.	350 Ft. Lbs.	450 Ft. Lbs.	500 Ft. Lbs.
1”	190 Ft. Lbs.	205 Ft. Lbs.	480 Ft. Lbs.	530 Ft. Lbs.	675 Ft. Lbs.	750 Ft. Lbs.
1.1/8”	265 Ft. Lbs.	300 Ft. Lbs.	600 Ft. Lbs.	670 Ft. Lbs.	960 Ft. Lbs.	1075 Ft. Lbs.
1.1/4”	375 Ft. Lbs.	415 Ft. Lbs.	840 Ft. Lbs.	930 Ft. Lbs.	1360 Ft. Lbs.	1500 Ft. Lbs.
1.3/8”	490 Ft. Lbs.	560 Ft. Lbs.	1100 Ft. Lbs.	1250 Ft. Lbs.	1780 Ft. Lbs.	2030 Ft. Lbs.
1.1/2”	650 Ft. Lbs.	730 Ft. Lbs.	1450 Ft. Lbs.	1650 Ft. Lbs.	2307 Ft. Lbs.	2670 Ft. Lbs.

GRADE 2
No Marks.

GRADE 3
3 Marks.

GRADE 8
6 Marks.

[G:\VALSON\Manuais_Inglês\Torque]

NOTE **For metric conversion:**

- **Multiply inch-pounds by .113 to convert to newton-meters (Nm).**
- **Multiply foot-pounds by 1.356 to convert to newton-meters (Nm).**

Important

ATTENTION

MARCHESAN S/A reserves the right at any time to make improvements in the design, material or specifications of machinery, equipment or parts without thereby becoming liable to make similar changes in machinery, equipment or parts previously sold.

Images are for illustration purposes only.

Some illustrations in this manual appear without the safety devices, removed to allow a better view and detailed instructions. Never operate the equipment without these safety devices.

TECHNICAL PUBLICATION DIVISION

Elaboration / Diagramming: Valson Hernani de Souza

Diagramming Assistant: Reinaldo Tito Júnior

Technical information: Carlos C. Galhardi

Translation: Matheus Freire de Souza

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MARCHESAN IMPLEMENTOS E MÁQUINAS AGRÍCOLAS "TATU" S.A.
Marchesan Av., 1979 - Zip Code 15994-900 - Matão - SP - Brazil
Telephone 55.16.3382.8282
Sales 55.16.3382.1009 - Parts 55.16.3382.8297 - Export 55.16.3382.1003
www.marchesan.com.br

Notes