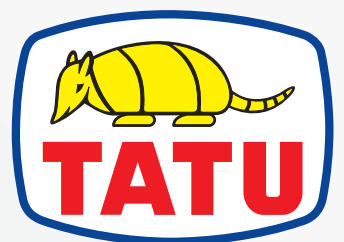


TATU SPEED DISK

OPERATOR'S MANUAL



MARCHESAN

Introduction

The TATU SPEED DISK was especially designed to prepare the soil over great areas, performing a superior field finishing with just one pass when combining an aggressive action with an exclusive cage roller system. The high velocity disc blades cut and mix the earth to assure a homogeneous soil. The cage rollers break the clods for a better soil leveling.

This equipment can move more soil than a traditional high-speed disk, which makes it a great option. In fall, the SPEED DISK can penetrate even the hardest soils to cut the straw and incorporate the residues. In spring, penetrate shallower to complete the seedbed preparation process.

This equipment runs at speeds of 10 to 15 mph and have an independent set of arms for each one of the disc blades to provide independent ability as you are driving through the field. Such disc blades, along with the cage roller, works in three steps to fracture, lift, turn over, incorporate residues, smooth, finish and level the soil.

The TATU SPEED DISK can deliver a high-speed along with good soil finish and uniform residue management, returning the nutrients of more than half percent of the chopped residue to the ground while the other part stays above the soil as a protective layer, avoiding loosening the nutrients and protecting the soil profile against wind and water erosion.

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

For any further explanation or in the case of technical problems that may arise during the service, consult your dealer and the Export Department of the factory, as they can ensure the fully functioning of your TATU equipment.



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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 transport, operate and carry out any maintenance on them;
- Marchesan is not responsible for any damage caused by accident on transporting, misuse 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 for the incorrect use of the equipment.


General information

Right and left hand side indications 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's frame.

MODELO MODEL	<input type="text"/>
Nº SÉRIE SERIAL NR	<input type="text"/>
DATA DATE	<input type="text"/>
PESO WEIGHT	<input type="text"/>

MARCHESAN IMPLEMENTOS E
MÁQUINAS AGRÍCOLAS "TATU" S.A.
www.marchesan.com.br
AV. MARCHESAN, 1979 - MATÃO-SP-BRASIL
CNPJ: 52.311.289/0001-63



MARCHESAN

NOTE

The warranty shall not be applied to any equipment or any part that 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.

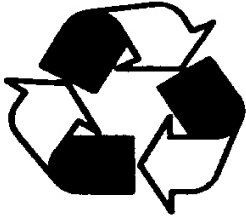
To the operator

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 spilt over 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 used to prevent accidents.**
- **The instructions under this symbol refers to the safety of the operator, mechanic or third parties, therefore they should be carefully read and observed. If the safety instructions are not being followed, a serious accident or even death may occur.**

This equipment 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 work, 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), which you should not get closer during operation.



When hitching the equipment to the tractor, use a chain to lock the equipment drawbar to the tractor hitch bar. This procedure will prevent a possible rupture of any hydraulic hose or breaks on the hitching system, what would make the equipment tilt up.

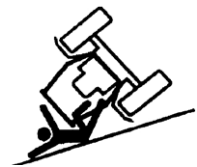
To the operator



Never use your bare hands to check hydraulic leaks, the high pressure can cause 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 and treated seeds) make any contact with your skin or clothes.



Keep access and work places clean or 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 strictly 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 any maintenance or 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 or to get over the equipment, while it is operating, during transportation or storage.
- When setting the plow to transport position, check if there are no people or animals close or under it.
- 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.
- Wear protective gloves to work near the cutting parts.
- Never operate the equipment without its **protective devices**.
- 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.
- Carefully check the transport width on narrow locations.
- Be careful while hitching the equipment to the tractor.
- Only pull the equipment using a tractor with appropriate power.
- 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.
- 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.
- Never attempt to change the adjustments, clean or lubricate the equipment while it is moving.
- Whenever you unhitch the equipment, either in the field or shed, do it on a flat and firm surface and use 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.

To the operator

Transportation over truck or trailer



Marchesan recommends to consult the traffic norms as well as to be sure that the equipment has all traffic signs required to carry out the transportation before transporting the equipment over the road. 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 authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.
- After 4.9 to 6.2 miles (8 to 10 km) transporting, please inspect the load condition. Repeat this procedure every 49.7 to 62.1 miles (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.

To the operator

Working safety standards

It is important to have knowledge not only about the functioning, operation of the equipment and its technology, but also the working legal aspects when using the equipment, such as: safety standards, operator's manual and working safety.

The equipment and tools used on the rural area must be properly handled, otherwise health and safety of involved personnel may be compromised.

The operator must be capable and authorized to operate the tractor, meaning that that person must comprehend the functioning instructions of the tractor and know about the safety standards regarding the job that will be performed.

The Ministry of Labor and Employment created safety standards that aim to decrease the risk of accidents that may occur to the rural worker. Related to the subject of agricultural machines and equipments, we specifically cited the **NR 06**, **NR 12** and **NR 31** standards.

Regulatory Standard - **NR 06**:

- For purposes of applying this Regulatory Standard, Personal Protective Equipment (PPE) is considered any device or product that is worn by an individual worker for protection against risks that could threaten safety and health at work.

Regulatory Standard - **NR 12**:

- This Regulatory Standard and its annexes provide technical references, basic principles and protective measures to ensure the health and physical integrity of workers and establishes minimum requirements for the prevention of accidents and occupational diseases in the design stages and use of machinery and equipment of all kinds, and also to its manufacture, importation, trading, exhibition and cession in any way. It is understood as using phase the construction, transportation, assembly, installation, adjustment, operation, cleaning, maintenance, inspection, disabling and dismantling of machinery or equipment.

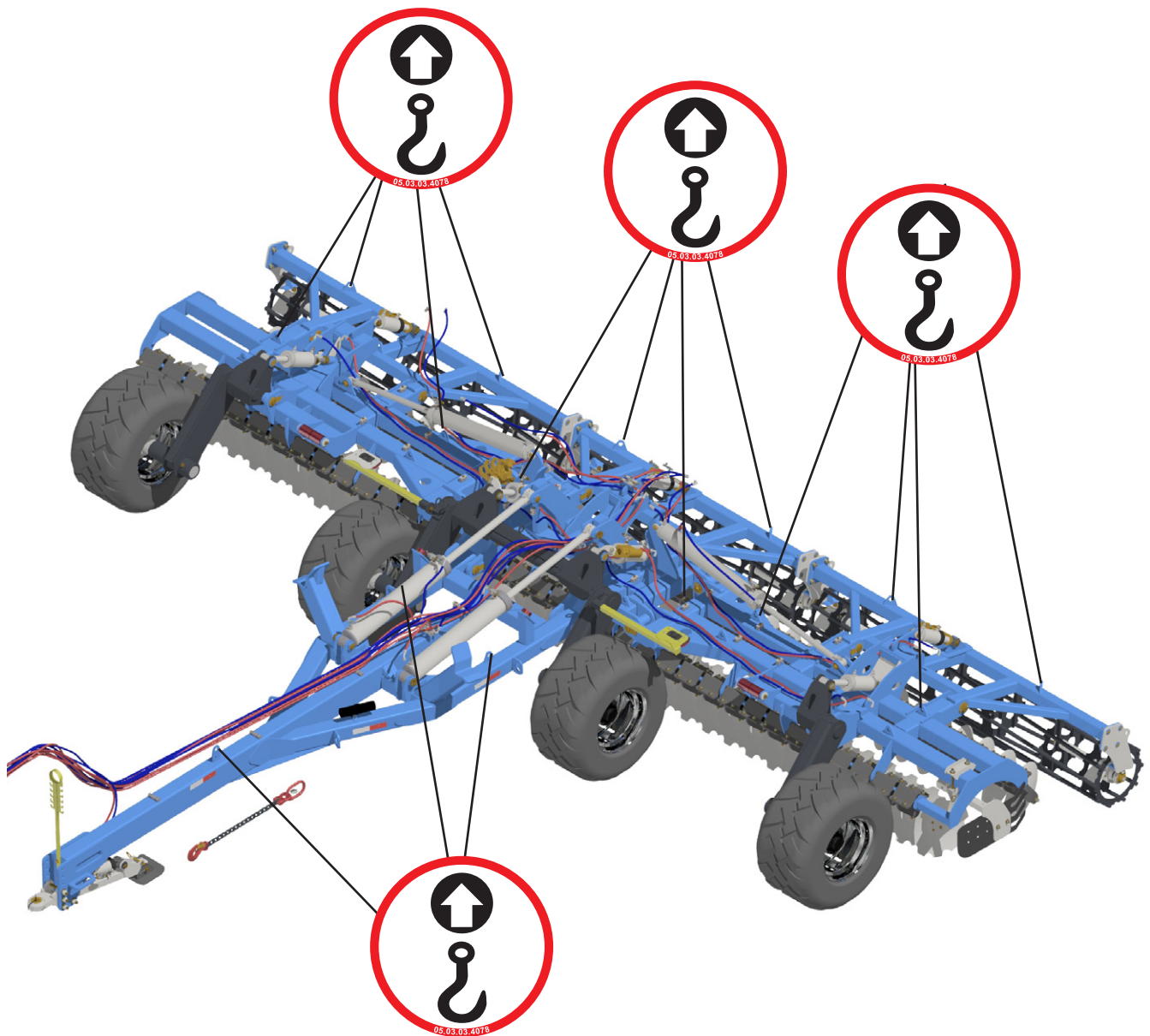
Regulatory Standard - **NR 31**:

- This Regulatory Standard has the purpose to establish the precept to be applied on the organization and on the working environment, in order to make compatible the planning and development of agriculture, livestock, forestry, forest exploration and aquaculture with safety on the working environment.

To the operator

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 9.8 feet (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.

To the operator

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.

PERIGO/DANGER/PELIGRO

Para evitar acidentes, não faça regulagens com o equipamento em movimento. Para manutenção e limpeza, desligue o motor do trator.

In order to avoid accidents, do not carry out adjustments with the equipment in movement. For maintenance and cleaning, switch off the tractor engine.

Para evitar accidentes, no haga reglajes con el equipo en movimiento. Para mantenimiento y limpieza, apague el motor del tractor.

05.03.03.1739

ATENÇÃO ATTENTION ATENCIÓN

Leia o manual antes de iniciar o uso do equipamento.

Read the manual before attempting to work with the equipment.

Lea el manual antes de iniciar el uso del equipo.

05.03.03.1428

CAUTION

HYDRAULIC CONTROL HAZARD

Can cause machine damage.

• Ensure transport & wing cylinders are placed in float during field operation.

PLACE IN FLOAT

05.03.03.5216

DANGER

CRUSHING HAZARD

Can cause serious injury or death.

• Keep away from back of machine while folding or unfolding.

05.03.03.5217

DANGER

ELECTROCUTION HAZARD

Can cause serious injury or death.

• Keep away from electric lines.

• Electrocution can result without direct contact.

05.03.03.5218

DANGER

NEGATIVE TONGUE WEIGHT ON HITCH

Can cause serious injury or death.

• Make certain that equipment is securely hitched to tractor at all times.

• Do not unhook equipment from tractor unless it is in the proper field or transport position.

05.03.03.5219

ATENÇÃO / ATTENTION / ATENCIÓN

• Verifique o nível de óleo dos mancais semanalmente;

• Observe, diariamente, se há vazamento;

• Troque o óleo a cada 1000 horas de trabalho;

• Use óleo mineral SAE 90;

• Lubrifique os pontos de graxa periodicamente;

• Reaperte os conjuntos de discos periodicamente (antes disso, deve-se soltar os parafusos de fixação dos mancais).

• Check the bearings' oil level weekly;

• Check the existence of eventual leaks daily;

• Change the oil at every 1000 working hours;

• Use mineral SAE 90 oil;

• Lubricate the grease points periodically;

• Re-tighten the disc assemblies periodically (to do that, you must loose the bearing fastening bolts first).

• Verifique el nivel de aceite de los cojinetes semanalmente;

• Observe si hay pérdidas, diariamente;

• Cambie el aceite a cada 1000 horas de trabajo;

• Utilice aceite mineral SAE 90;

• Lubrique los puntos de grasa periódicamente;

• Reajuste los conjuntos de discos periódicamente (para esto, antes, se deberá soltar los tornillos de fijación de los cojinetes).

05.03.03.3038

To the operator

Safety decals

! PERIGO / DANGER / PELIGRO



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. Falhas mecânicas o hidráulicas pueden hacer con que el equipo baje rapidamente.

05.03.03.1896



! WARNING




FRAME PINCH POINT & CRUSHING HAZARD
Can cause serious injury or death.

- Stay clear of machine during operation folding, unfolding, raising, & lowering.
- Keep all persons clear while any part of machine is in motion.

05.03.03.5220

! WARNING



HIGH PRESSURE HYDRAULIC OIL
Can cause serious injury or death.

- Check for leaks with cardboard: never use hand.
- Before loosening fittings: lower load, release pressure, and be sure oil is cool.
- Consult physician immediately if skin penetration occurs.

05.03.03.5221

! WARNING



MACHINE RUNAWAY HAZARD
Can cause machine damage, serious injury, or death.

- Keep safety chain properly attached to a secure location on tractor at all times.
- Ensure clevis style hitch pin is secured with proper pin retainer.

05.03.03.5222

! WARNING

**12 MPH
20 KMH**

MAXIMUM SPEED
Can cause machine damage.

- Transportation speed must not exceed 12 MPH (20 KMH). Loss of machine control can result in serious injury or death.

05.03.03.5223

Pressão Pressure Presión	Retorno Return Retorno	
		Cilindro de transporte Transport cylinder <i>Cilindro de transporte</i>
		Cilindro dos rodeiros Carriage wheel cylinder <i>Cilindro de los rodados</i>
		Cilindros laterais (Asas) Wing cylinder <i>Cilindros laterales (Alas)</i>
		Cilindro dos rolos Cage roller cylinder <i>Cilindros de los rodillos</i>
		Cilindro do macaco Jack cylinder <i>Cilindro del pie de apoyo</i>

05.03.03.5531

! WARNING

SAFETY INFORMATION
Failure to follow these instructions can cause serious injury or death.

- Read Operator's Manual before operating, servicing, or repairing equipment.
- Follow all safety rules and instructions.
- Operate from tractor seat only.
- Do not allow riders.
- Use hazard flashers when transporting.
- Do not allow any other person in area when operating.
- Before dismantling tractor.
 - Lower equipment and raised components.
 - Stop engine, remove key and engage brake.
 - Operate hydraulic valve levers to release any pressure.
 - Allow no children or untrained persons to operate the equipment.

05.03.03.5224

To the operator

Safety decals

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

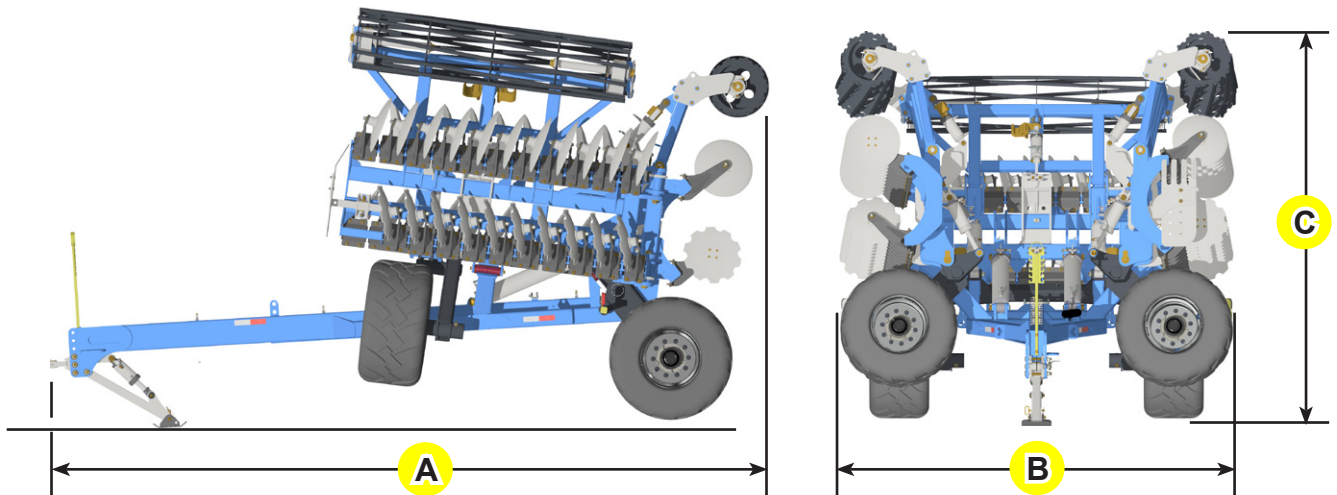
05.03.03.1827

Decal set

Quantity	Serial number	Model
02	05.03.03.4953	TATU SPEED DISK 140 X 950 decal
02	05.03.03.5340	TATU logotype decal
01	05.03.03.1739	Danger decal 65 X 103
13	05.03.03.4078	Lifting points decal
01	05.03.03.5531	Grip coupler color decal
01	05.03.03.1428	Read the manual decal
01	05.03.03.1827	Lubricate and tighten daily decal
02	05.03.03.1896	Danger decal
01	05.03.03.3038	Attention decal
01	05.03.03.5216	Caution hydraulic control hazard decal
02	05.03.03.5217	Danger crushing hazard decal
01	05.03.03.5218	Danger electrocution hazard decal
01	05.03.03.5219	Danger negative tongue decal
01	05.03.03.5220	Warning frame pinch point decal
01	05.03.03.5221	Warning high pressure decal
01	05.03.03.5222	Warning machine runaway decal
01	05.03.03.5223	Warning maximum speed decal
01	05.03.03.5224	Warning safety information decal
06	05.03.01.3229	Reflective side strip

Data sheet

Model: TATU SPEED DISK
 Number of disc blades: 50, 60, 72, 84, 96 and 108
 Spacing between disc blades: 254 mm (10")
 Disc blades dimension: Ø 20" x 6 mm
 Ø 22" x 6 mm (Optional)
 Disc blade type: Notched, plain or mixed
 Hitching type: Drawbar
 Working speed: 16 to 22,5 km/h (10 to 14 mph)
 Maximum transport speed: 20 km/h (12 mph)
 Tires: 600 / 50 - 22.5 TL - 16 ply
 Tires pressure: **51 PSI**



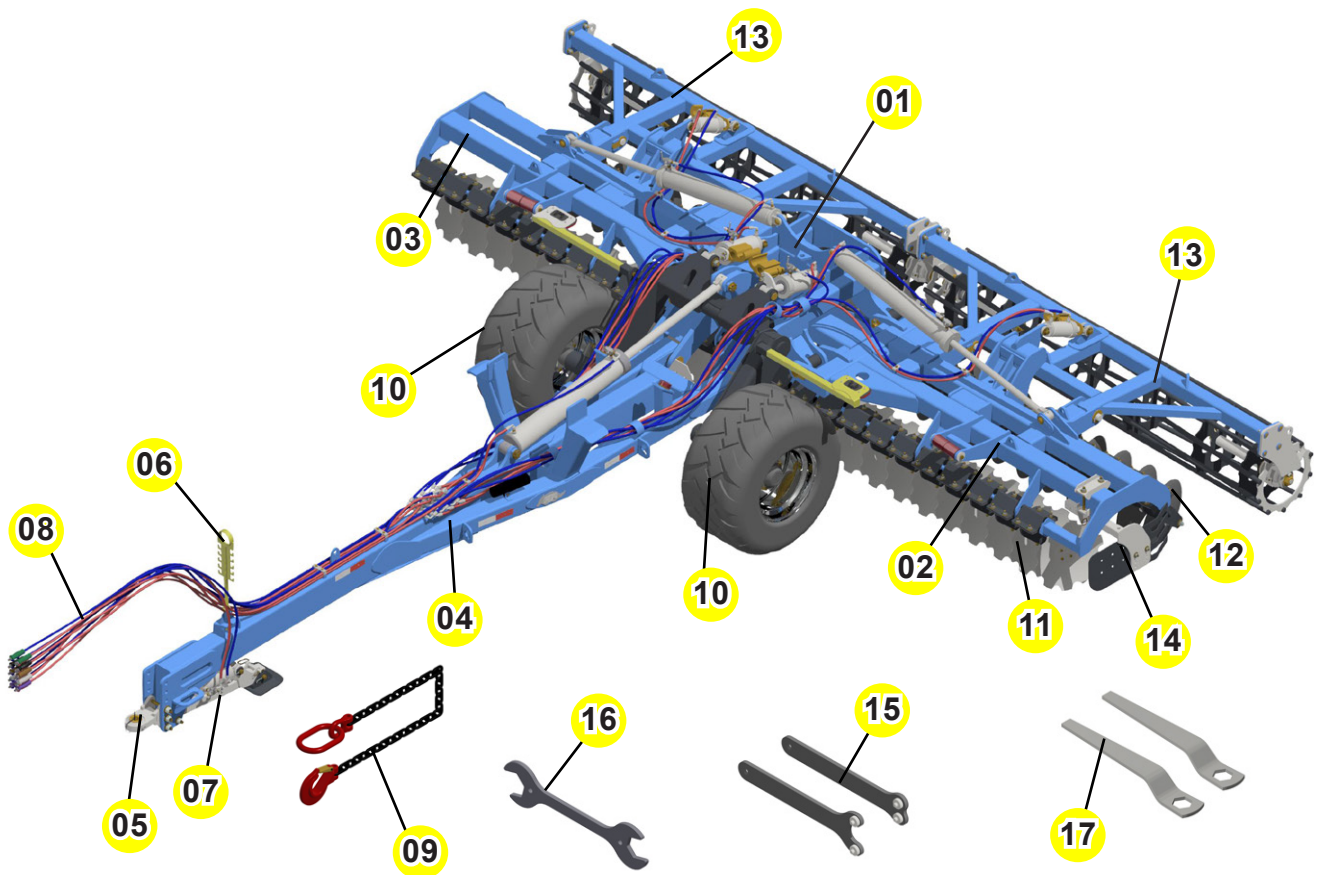
	Number of disc blades	Cutting width (mm) (ft)	Length (A) (mm) (ft)	Width (B) (mm) (ft)	Height (C) (mm) (ft)	Weight (Kg) (Lb)	Tractor required power (cv/hp)
TATU SPEED	50	6350 (21)	6641 (21.8)	3270 (10.7)	3700 (12.1)	7745 (17074)	225 - 275 (221 - 271 hp)
	60	7620 (25)	6850 (22.5)	3970 (13)	3820 (12.5)	10379 (22097)	270 - 330 (266 - 325 hp)
	72	9150 (30)			3965 (13)	11302 (24041)	320 - 400 (316 - 394 hp)
	84	10670 (35)	9130 (30)	4880 (16)	4100 (13.5)	12767 (27231)	380 - 460 (375 - 454 hp)
	96	12195 (16)			4130 (13.5)	13680 (29167)	430 - 530 (424 - 523 hp)
	108	13720 (45)			5480 (18)	14678 (31277)	490 - 600 (483 - 592 hp)

NOTE The dimensions and informations on this page are useful for transporting or storing the equipment. Such measures are approximated values.

Components

Tatu speed disk - 50 disc blades

- | | |
|------------------------|------------------------------------|
| 01 - Central frame | 09 - Safety chain |
| 02 - Left hand wing | 10 - Wheel support |
| 03 - Right hand wing | 11 - Front disc gang |
| 04 - Drawbar | 12 - Rear disc gang |
| 05 - Hitch | 13 - Cage rollers |
| 06 - Hose support | 14 - Deflector |
| 07 - Jack | 15 - Disc hub wrench set |
| 08 - Hydraulic circuit | 16 - Wheel support cylinder wrench |
| | 17 - 1.1/2 and 1.5/8 wrenches |

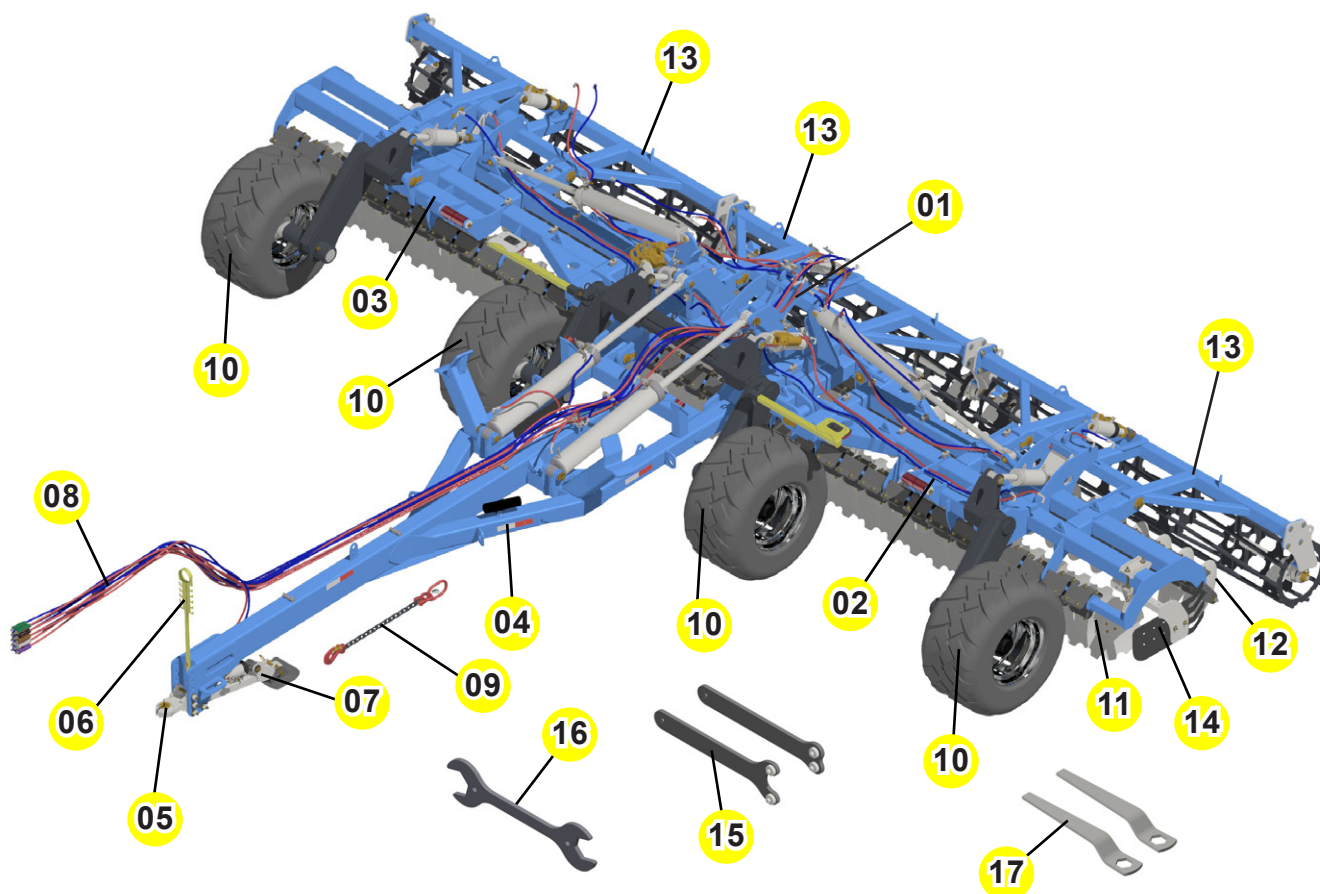


- NOTE**
- Assemble the wheel support cylinders with their rods facing the front part of the equipment.
 - The wrench (15) is used to tighten the disc hub.
 - The wrench (16) is used on the spindle to align the wheel support.
 - The wrench (17) is used on the cage roller bearings.

Components

Tatu speed disk - 60 to 108 disc blades

- | | |
|------------------------|------------------------------------|
| 01 - Central frame | 09 - Safety chain |
| 02 - Left hand wing | 10 - Wheel support |
| 03 - Right hand wing | 11 - Front disc gang |
| 04 - Drawbar | 12 - Rear disc gang |
| 05 - Hitch | 13 - Cage rollers |
| 06 - Hose support | 14 - Deflector |
| 07 - Jack | 15 - Disc hub wrench set |
| 08 - Hydraulic circuit | 16 - Wheel support cylinder wrench |
| | 17 - 1.1/2 and 1.5/8 wrenches |

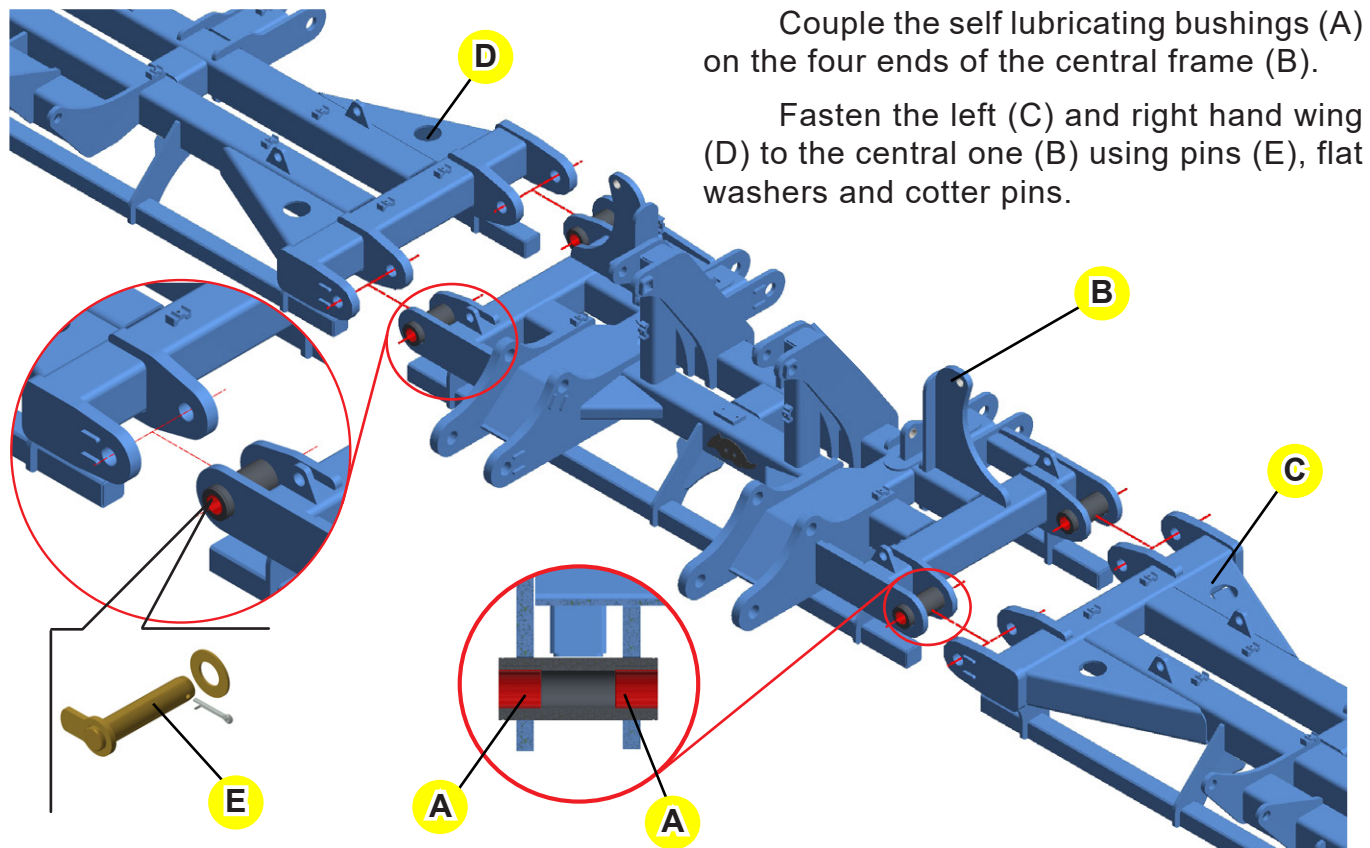


- NOTE**
- Assemble the wheel support cylinders with their rods facing the front part of the equipment.
 - The wrench (15) is used to tighten the disc hub.
 - The wrench (16) is used on the spindle to align the wheel support.
 - The wrench (17) is used on the cage roller bearings.

Assembly

First of all, place all parts in a clean and easy-to-identify place. Check the parts using the list that comes inside the packing box.

Frame assembly



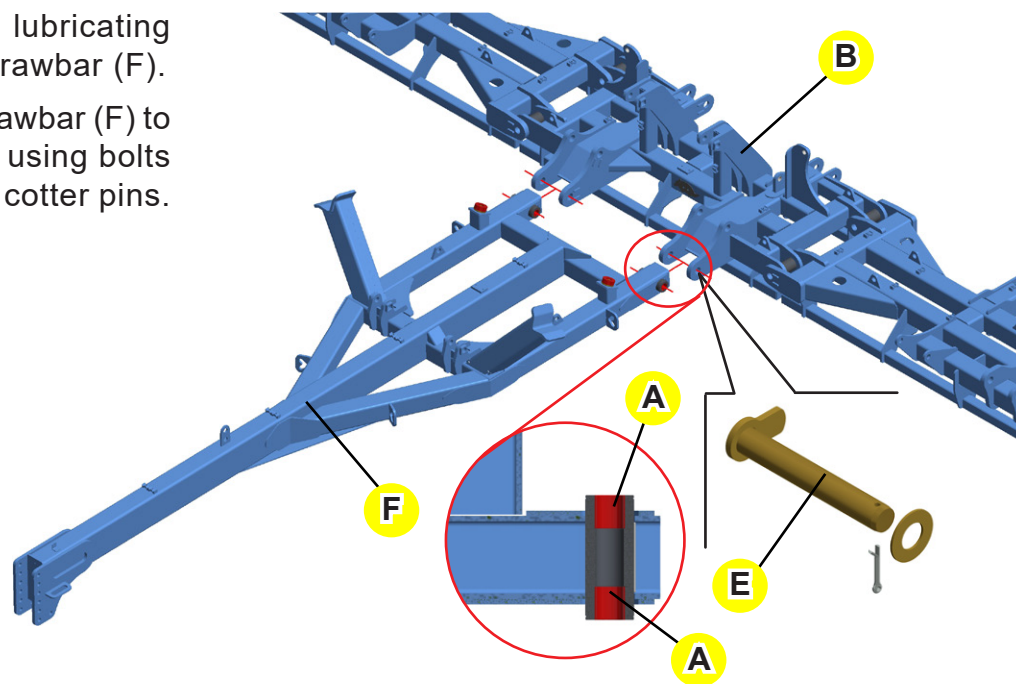
Couple the self lubricating bushings (A) on the four ends of the central frame (B).

Fasten the left (C) and right hand wing (D) to the central one (B) using pins (E), flat washers and cotter pins.

Drawbar assembly

Couple the self lubricating bushings (A) to the drawbar (F).

Assemble the drawbar (F) to the central frame (B) using bolts (E), flat washers and cotter pins.



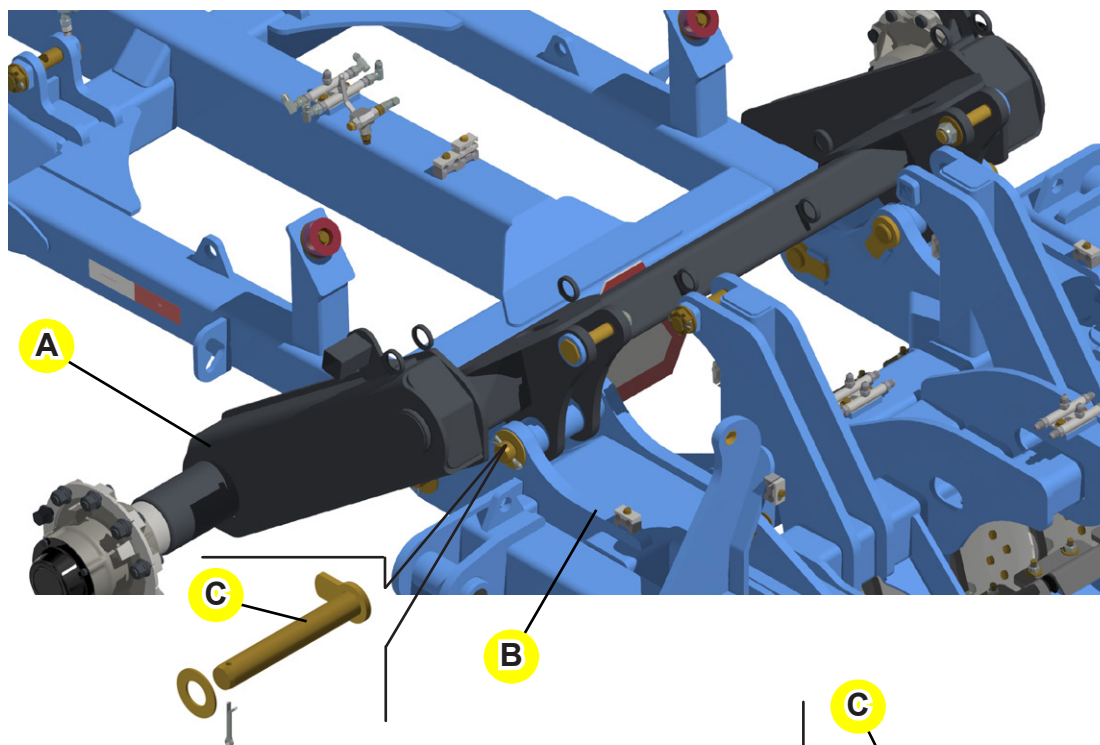
NOTE Use grease to assemble the self lubricating bushing (A) and when assembling the axles (E).

Assembly

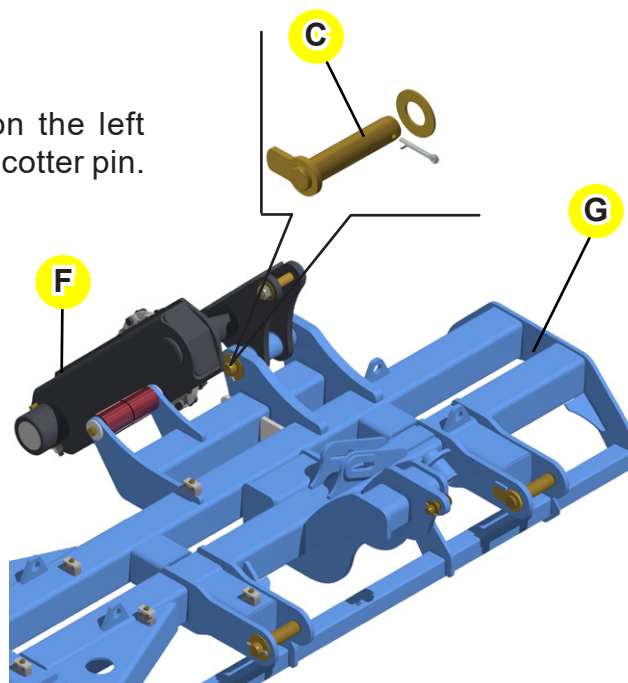
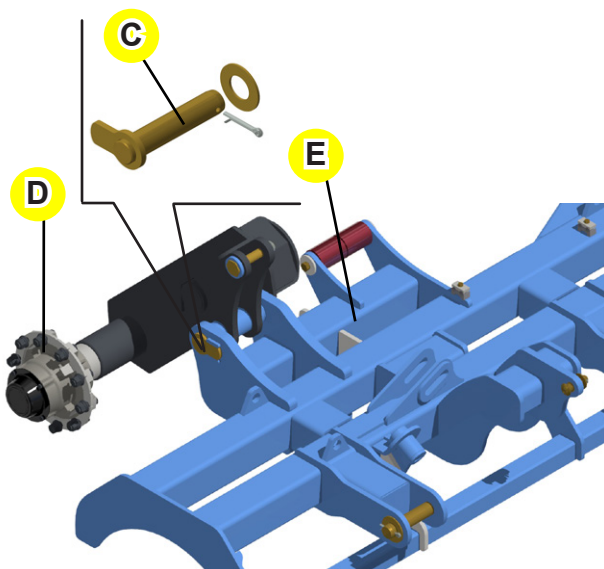
Wheel support assembly

Assemble the central wheel support (A) to the central frame (B) using a pin (C), flat washer and cotter pin.

Use the self lubricating bushing on the wheel support joints with the central frame and right and left hand wings as well.



Assemble the left wheel support (D) on the left hand wing (E) using a pin (C), flat washer and cotter pin.



Assemble the right wheel support (F) to the right hand wing (G) using a pin (C), flat washer and cotter pin.

NOTE Assemble the self lubricating bushings on the wheel support joints with the central and lateral frames.

Assembly

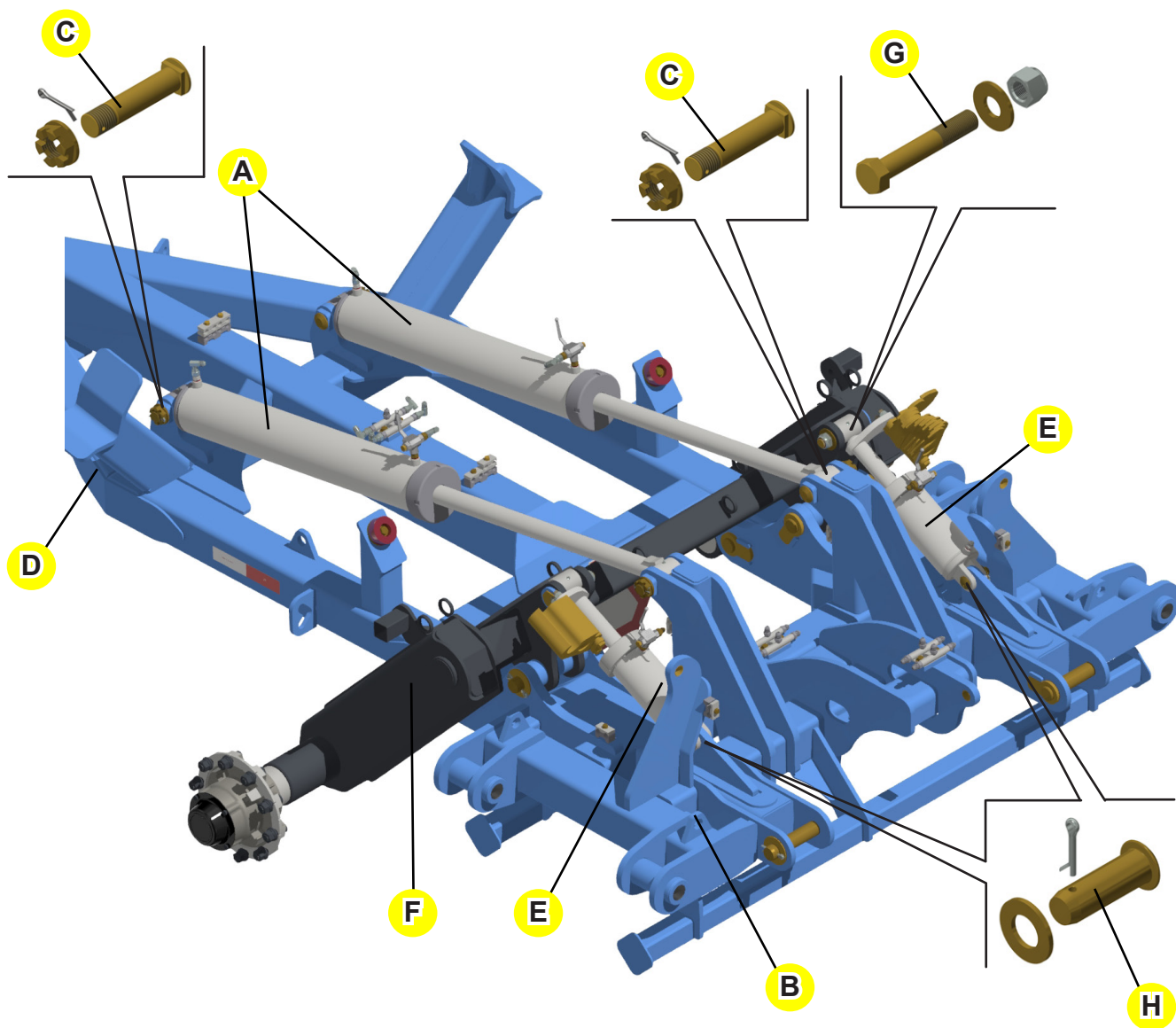
Central hydraulic cylinders assembly (transportation)

Assemble the cylinders (A) with their rods facing the central frame (B) and lock using bolts (C), castle nut and cotter pin.

On the other end of the cylinders, assemble the drawbar (D) and fasten with the bolts (C), castle nut and cotter pin.

Assemble the cylinders (E) on the central wheel support (F), being their rods facing it and lock using bolts (G), flat washers and nuts.

On the other end of the cylinders (E), assemble the central frame (B) and fasten using pins (H), flat washers and cotter pins.



Assembly

Lateral hydraulic cylinders assembly (wings)

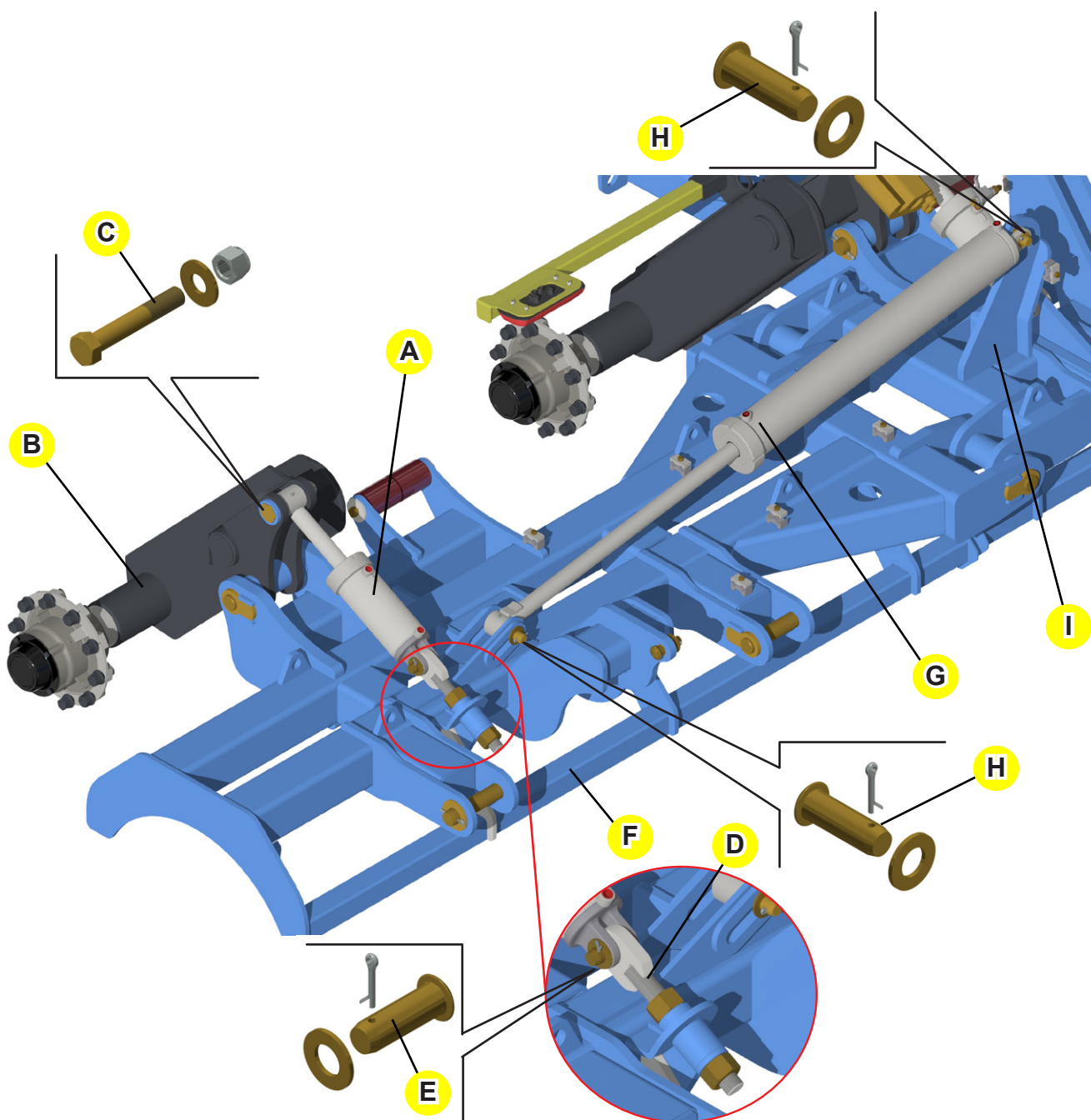
Assemble the cylinder (A) with their rods facing the wheel support (B) and lock using a bolt (C), flat washer and nut.

On the other end of the cylinder, assemble the extensor (D) and fasten with a pin (E), flat washer and cotter pin.

Assemble the extensor (D) to the lateral wing (F) and lock using nuts.

Assemble the wing cylinder (G) to the lateral wing (F) using a pin (H), flat washer and cotter pin. Assemble the other end of the cylinders (G) to the central frame (I) and fasten using a pin (H), flat washer and cotter pin.

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



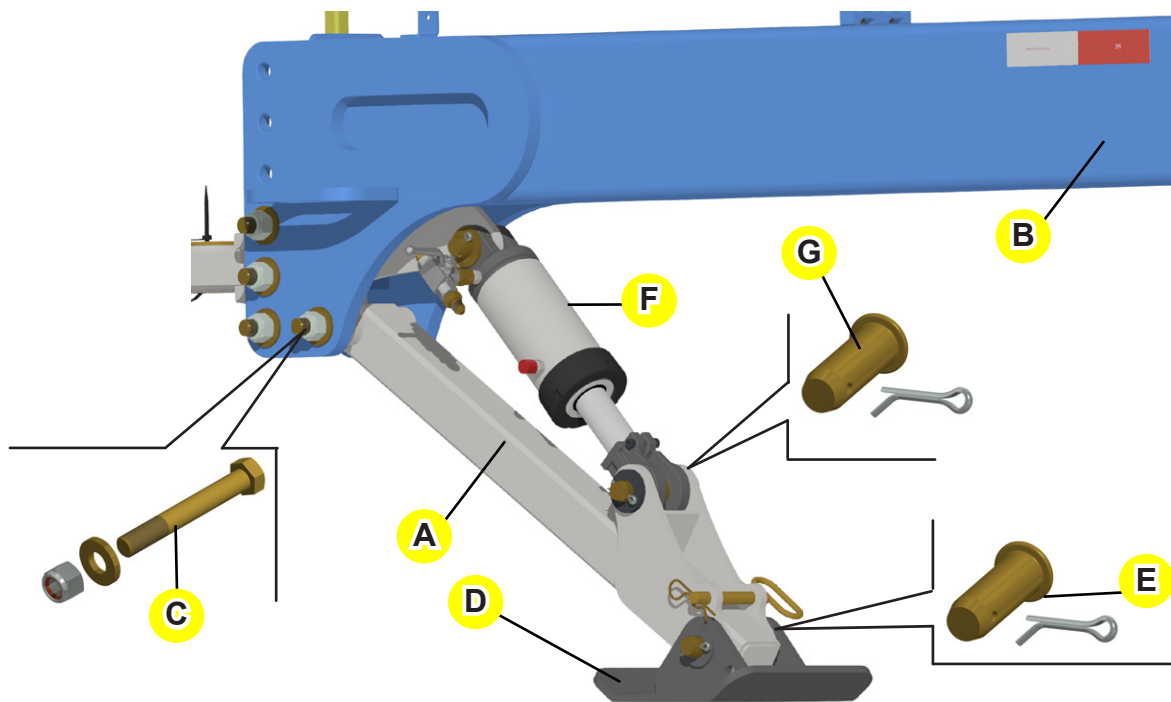
Assembly

Jack assembly

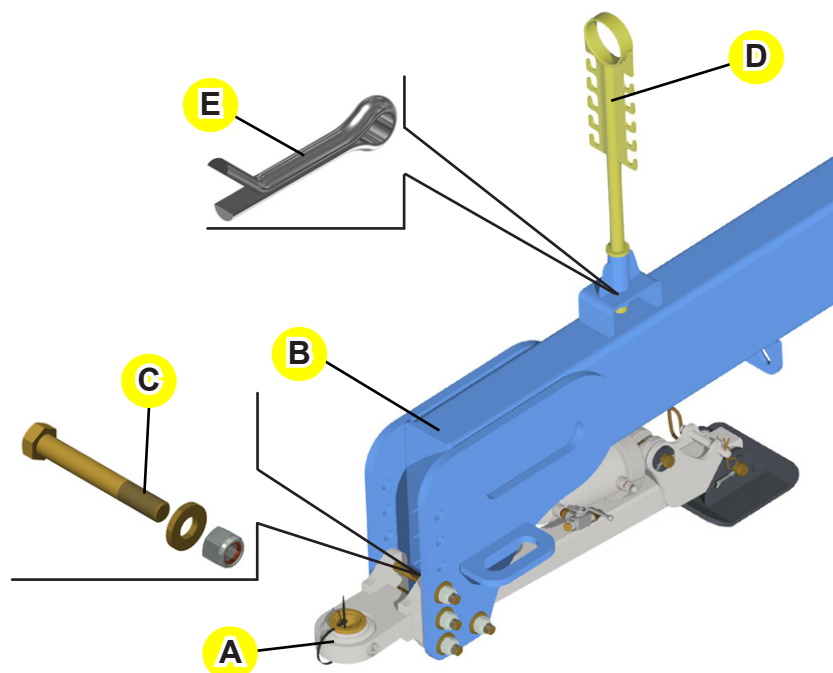
Couple the jack (A) to the drawbar (B) using a bolt (C), flat washer and nut.

Then, mount the base (D) using a junction axle (E), flat washer and cotter pin.

Assemble the cylinder (F) to the drawbar (B) and to the jack (A) using a junction axle (G), flat washer and cotter pin.



Tractor hitch assembly



Assemble the tractor hitch (A) to the drawbar (B) using bolts (C), flat washers and nuts.

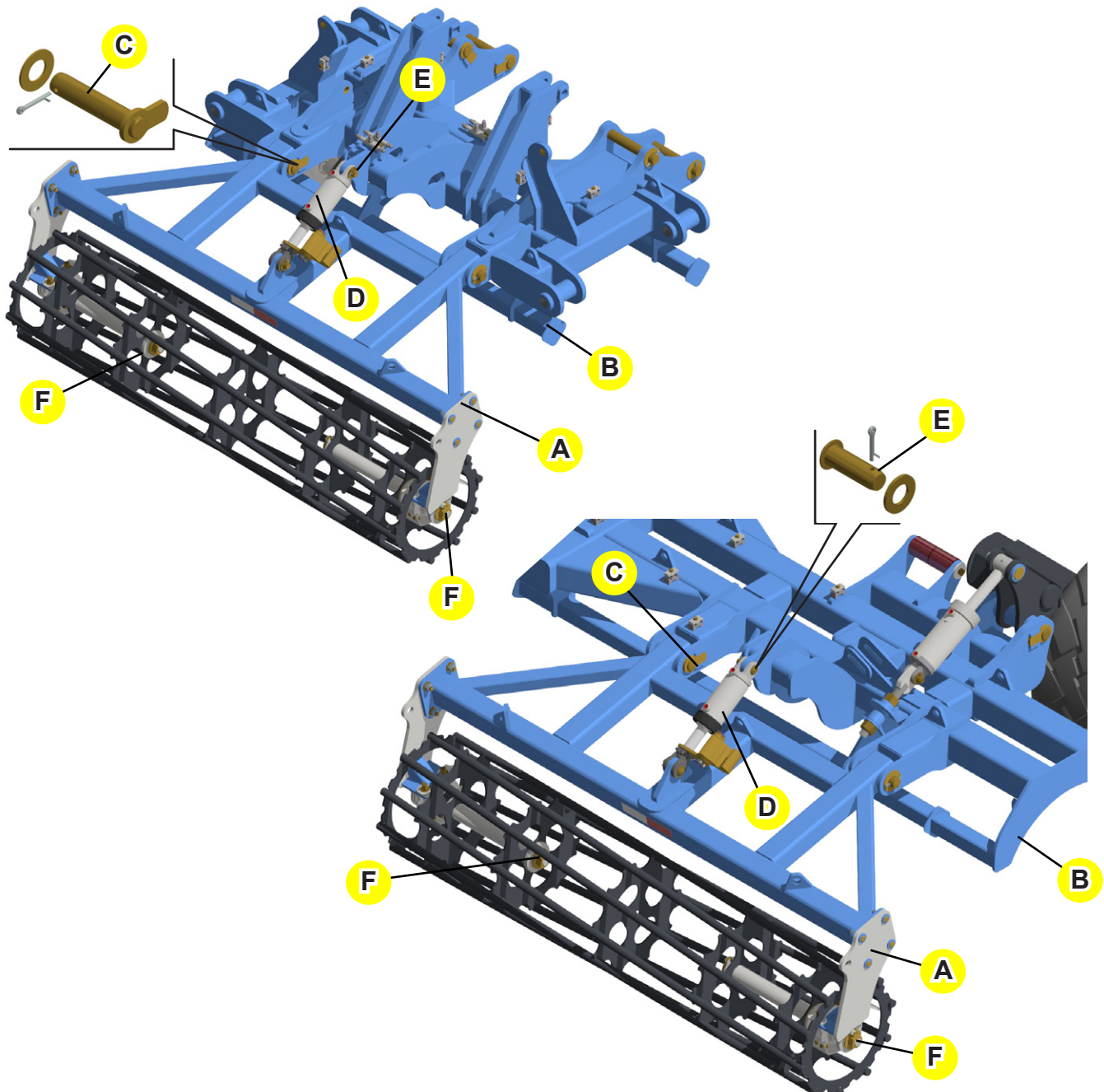
Assemble the hose support (D) to the drawbar (B) and lock using cotter pins (E).

Assembly

Cage rollers assembly

Assemble the cage roller (A) to the frame (B) using a junction axle (C), flat washer and cotter pin.

Fasten the cylinder (D) to the frame (B) and cage roller (A) using junction axles (E), flat washers and cotter pins.

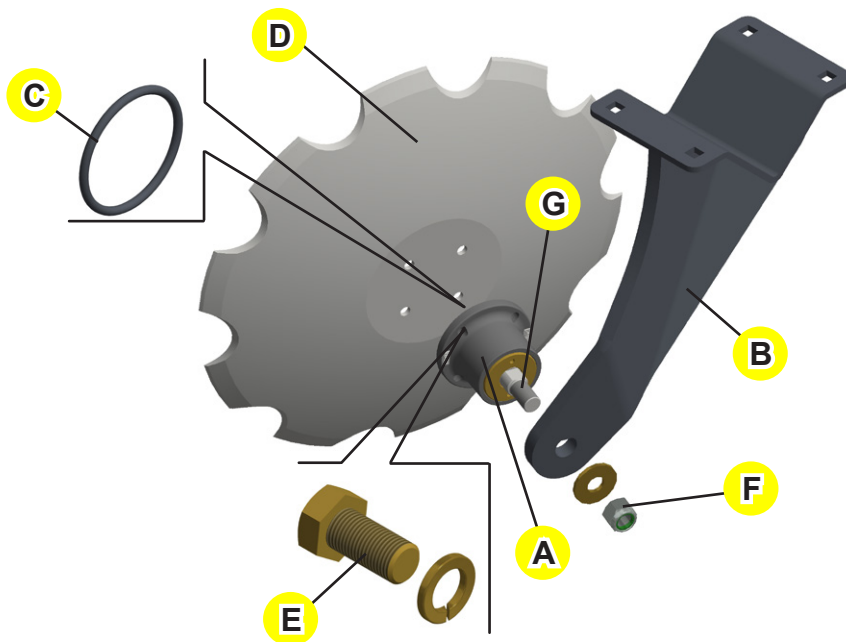


NOTE • Consult the torque table.

- The threads on the axles (F) must be greased before their assembly.
- Check the procedure to tighten the axle (F) nut on the 'tightening the cage roller' page ('maintenance' section).

Assembly

Disc blades assembly



Assemble the hub (A) to the shank (B) of the front and rear disc blade with flat washer and nut.

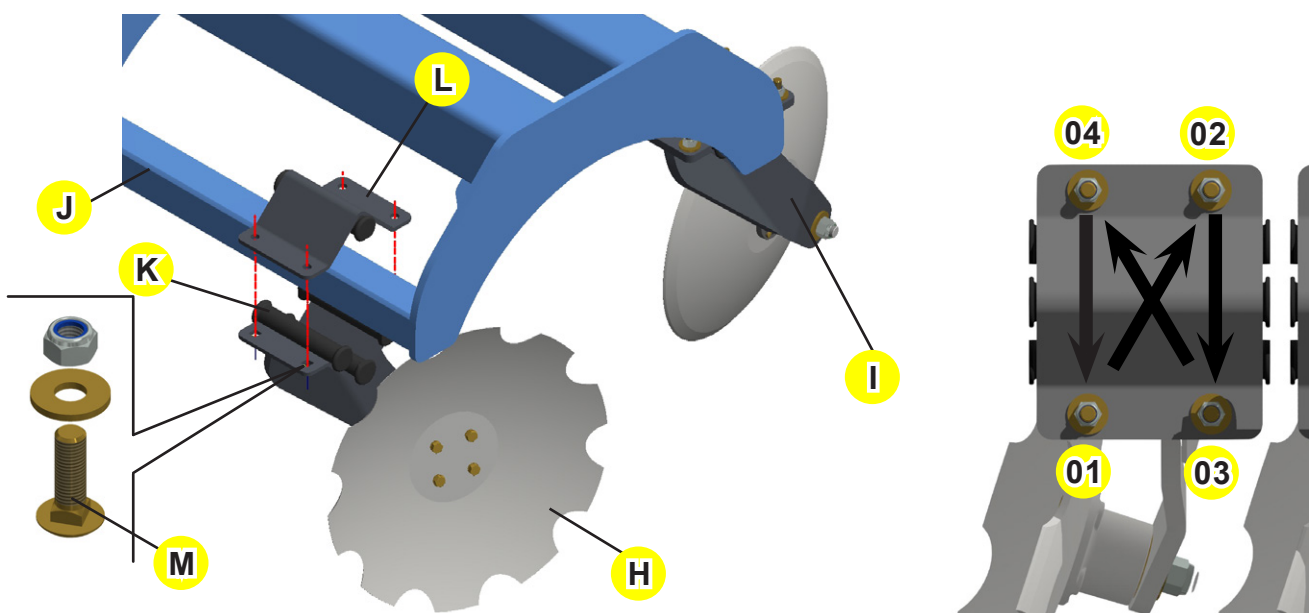
Couple the o' ring (C) between the disc blade (D) and hub (A).

Then, lock the disc blade (D) with bolts (E) and spring washers.

NOTE • The nut (F) that fasten the bolt (G) must have a maximum torque of 550 Nm (406 Lbf.ft) if lubricated or 740 Nm (546 Lbf.ft) if not lubricated.

Assemble the front disc blade (H) and the rear one (I) on the frame (J) using the rubber torsion cords (K); on the upper part use the fastener (L) and lock it to the frame (J) using bolts (M), flat washers and self lubricating nuts.

Slide the cords (K) to their place. The cords must be centralized with the fastener (L).

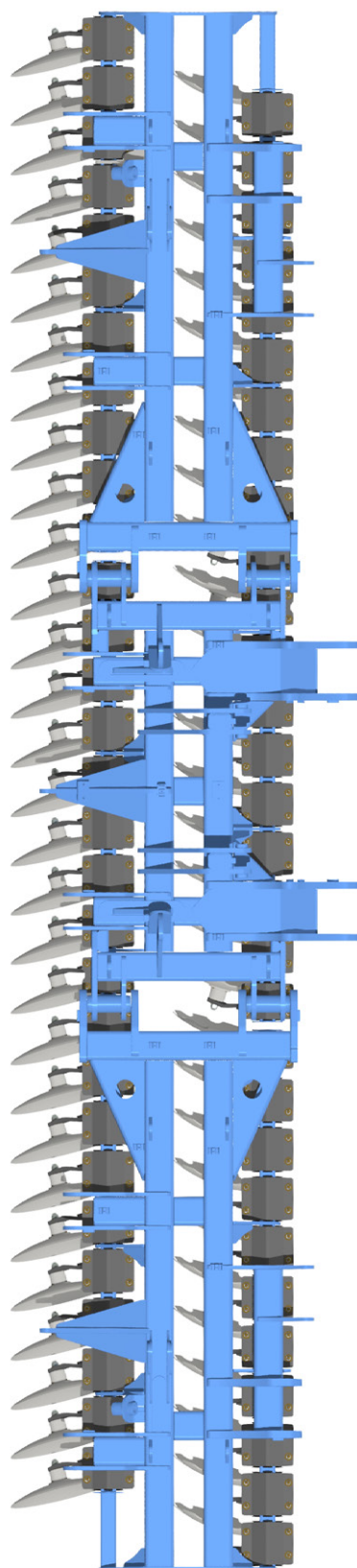


NOTE • Tighten the bolts (M) following the pattern as shown above.

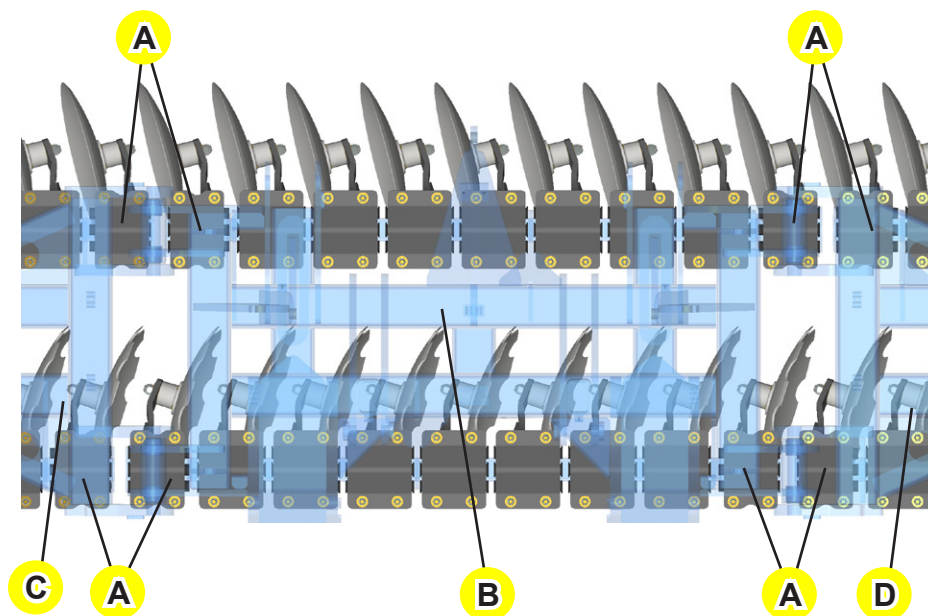
Assembly

Disc blades assembly scheme

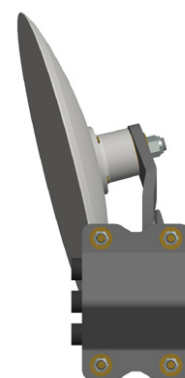
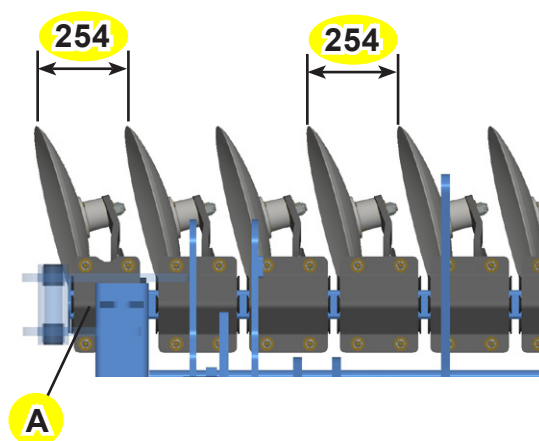
Define the disc gang spacing by assembling the disc blades with small supports (A) to the central frame (B) ends, left hand wing (C) and right hand wing (D).



Tatu speed disk 22"



The distance between the disc blades must be **254 mm**. This is a standard distance used for all disc gangs.

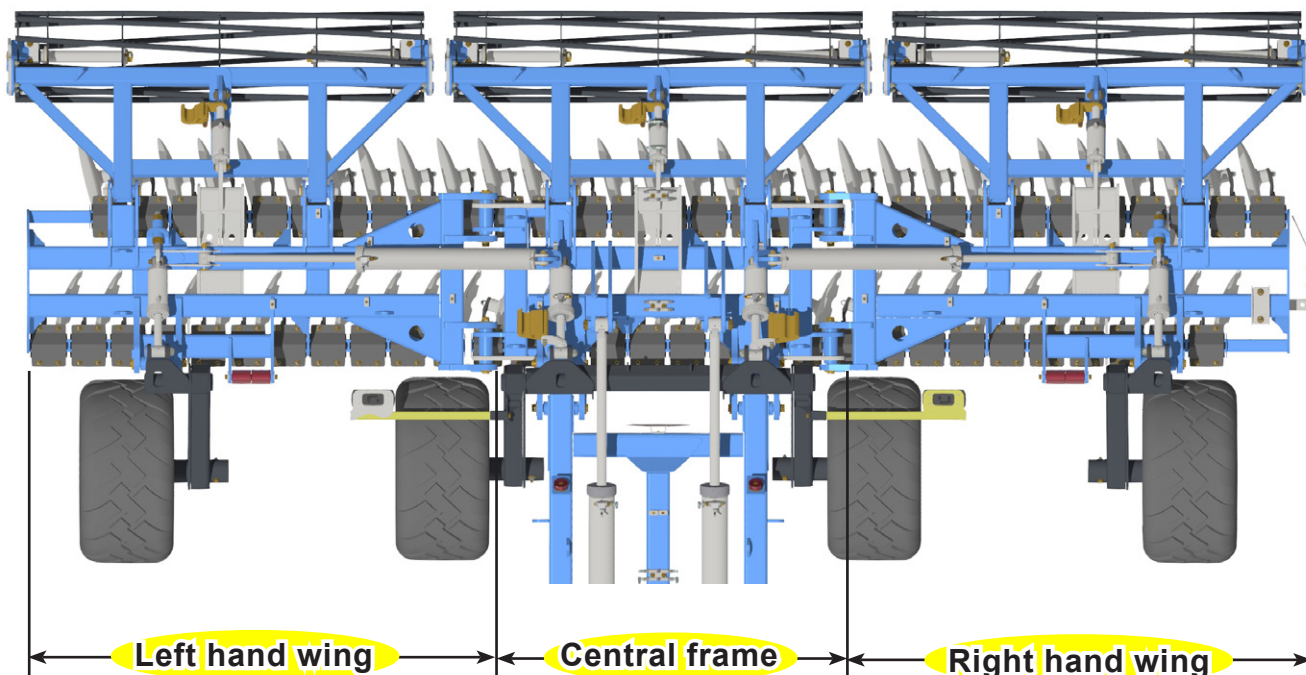


Disc blade with small support

- NOTE**
- Fasten the disc blade with small support on the articulation ends.
 - See the torque table on the 'important data' section.

Assembly

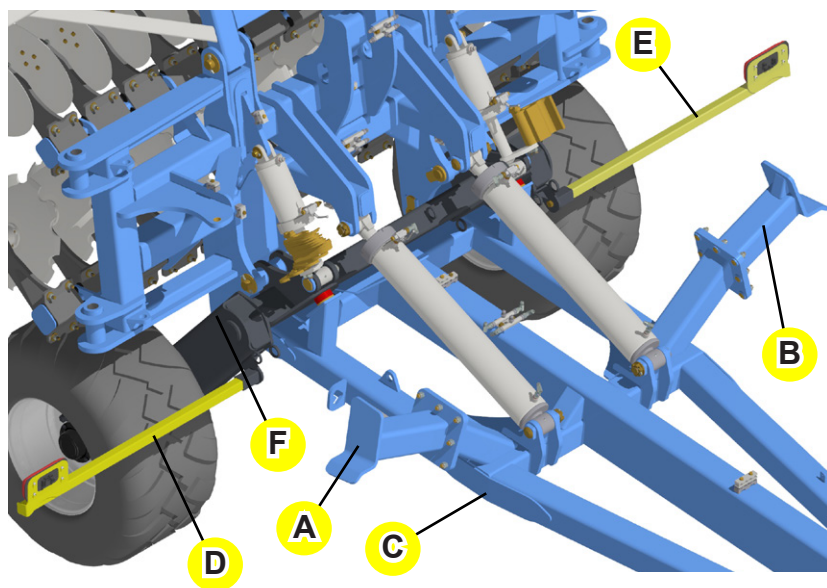
Disc blades assembly configuration



TATU SPEED DISK						
Discs	FRAME					
	Front left disc blade	Rear left disc blade	Front central disc blades	Rear central disc blades	Front right disc blades	Rear right disc blades
50	13 discs	12 discs	-----	-----	12 discs	13 discs
60	11 discs	10 discs	9 discs	9 discs	10 discs	11 discs
72	14 discs	13 discs	9 discs	9 discs	13 discs	14 discs
84	15 discs	14 discs	13 discs	13 discs	14 discs	15 discs
96	18 discs	17 discs	13 discs	13 discs	17 discs	18 discs
108	20 discs	19 discs	15 discs	15 discs	19 discs	20 discs

Assembly

Stops and lantern support assembly

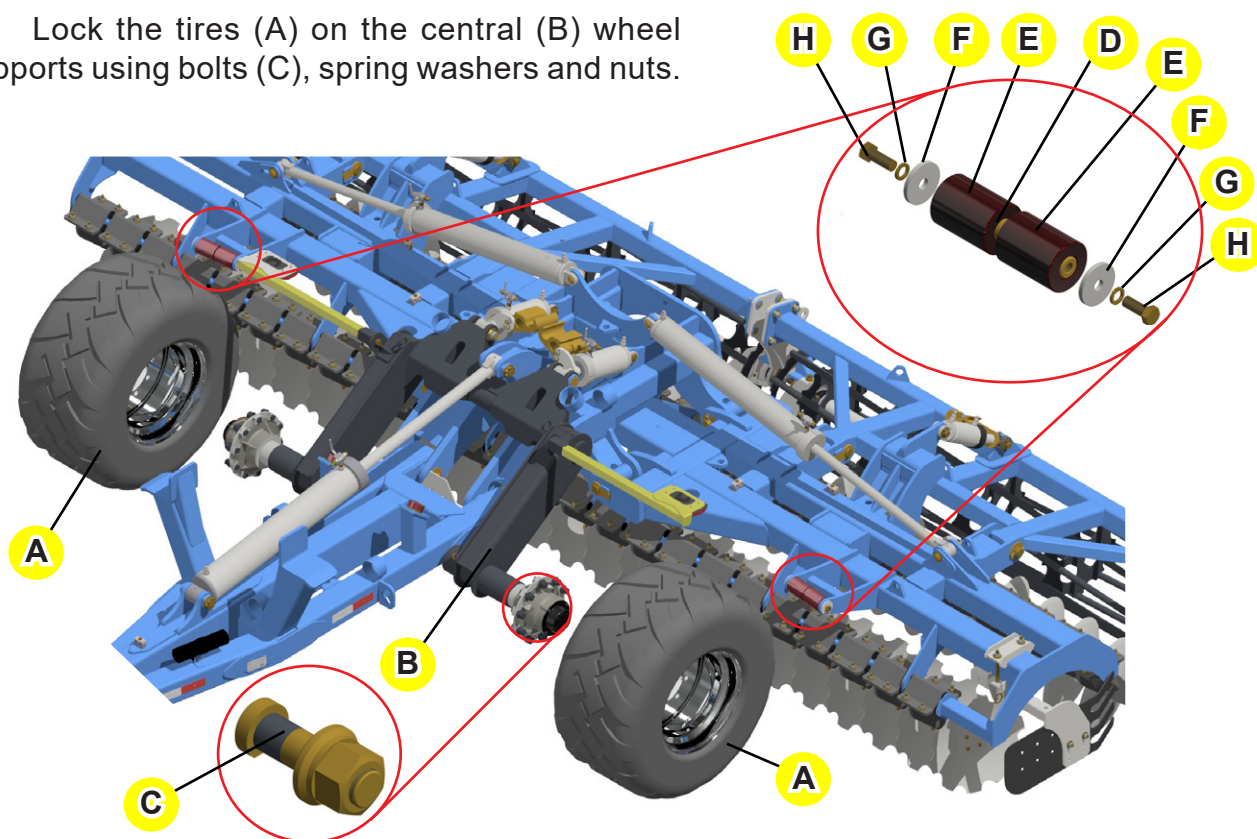


Assemble the right (A) and left (B) stops complement on the drawbar (C) for the models with 84, 96 and 108 disc blades using bolts and nuts.

Assemble the right (D) and left (E) supports with lantern on the wheel support (F) and lock using a bolt and spring washer.

Tires assembly

Lock the tires (A) on the central (B) wheel supports using bolts (C), spring washers and nuts.



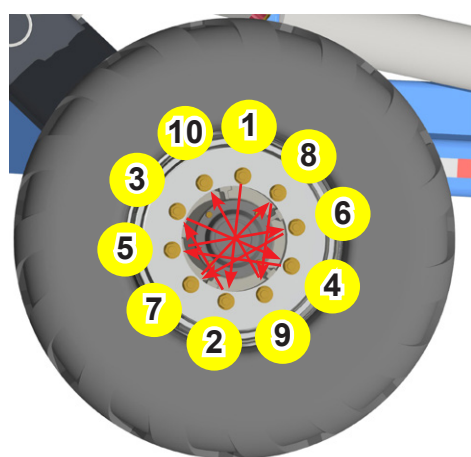
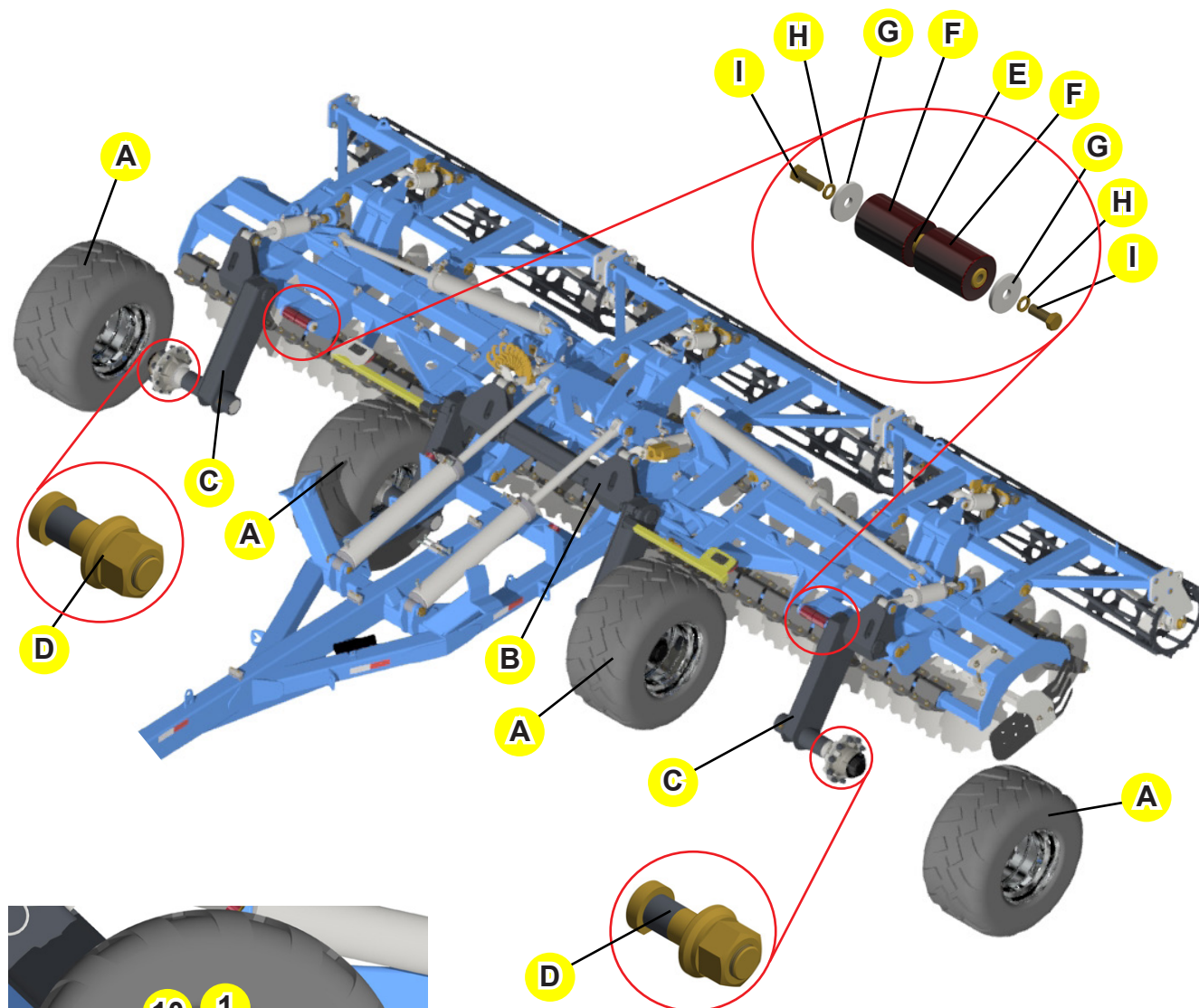
Assemble the stops on the wings using the following parts:

- Stop fixation axle (D);
- Lateral frame stop (E);
- Flat washers (F);
- Spring washers (G);
- Bolts (H).

Assembly

Tires assembly

Lock the tires (A) to the central (B) and lateral (C) wheel supports using bolts (D), spring washers and nuts.



Wheel flange nut tightening sequence (diagonal pattern).

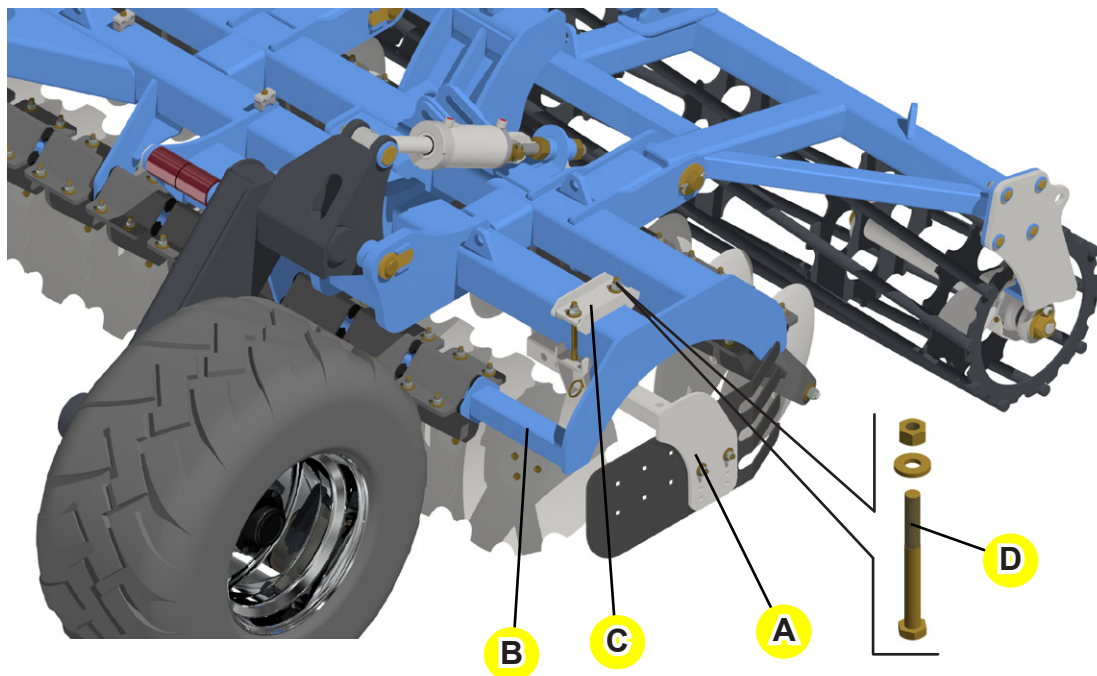
Assemble the stop on the wings using the following components:

- Stop fixation axle (E);
- Lateral frame stop (F);
- Flat washers (G);
- Spring washers (H);
- Bolts (I).

Assembly

Deflector assembly

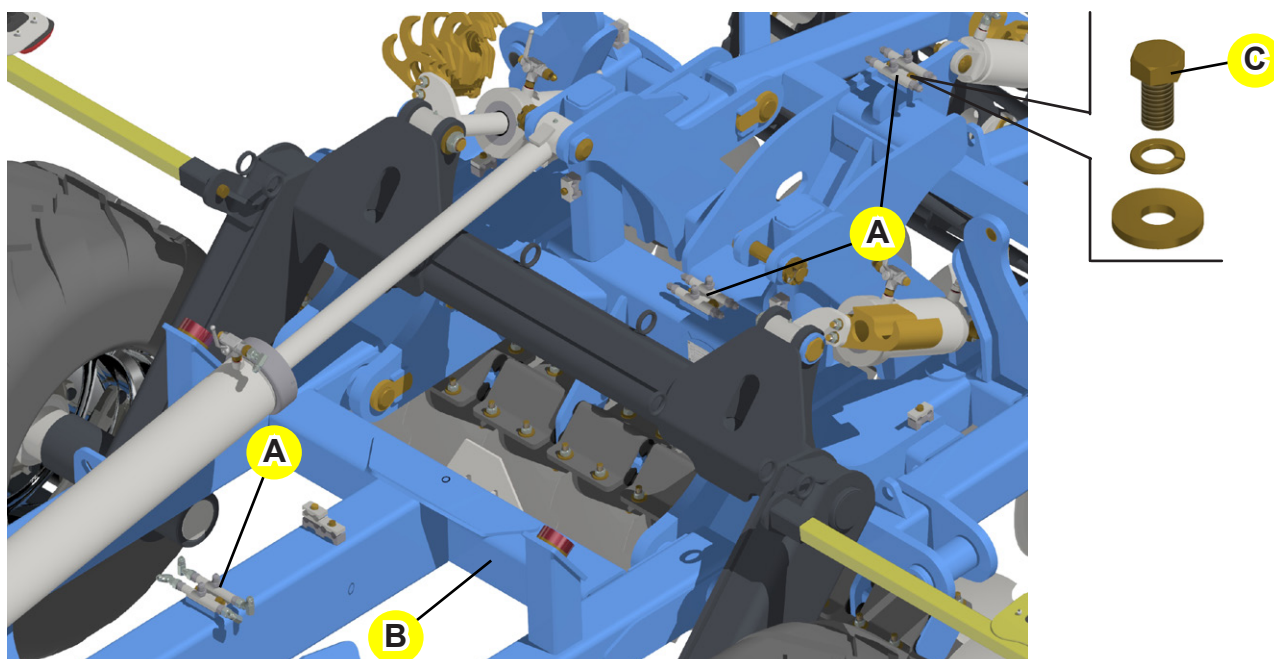
Fasten the deflector (A) to the left lateral frame (B) using a fastener (C) and bolts (D), flat washers and nuts.



Hydraulic hoses connection assembly

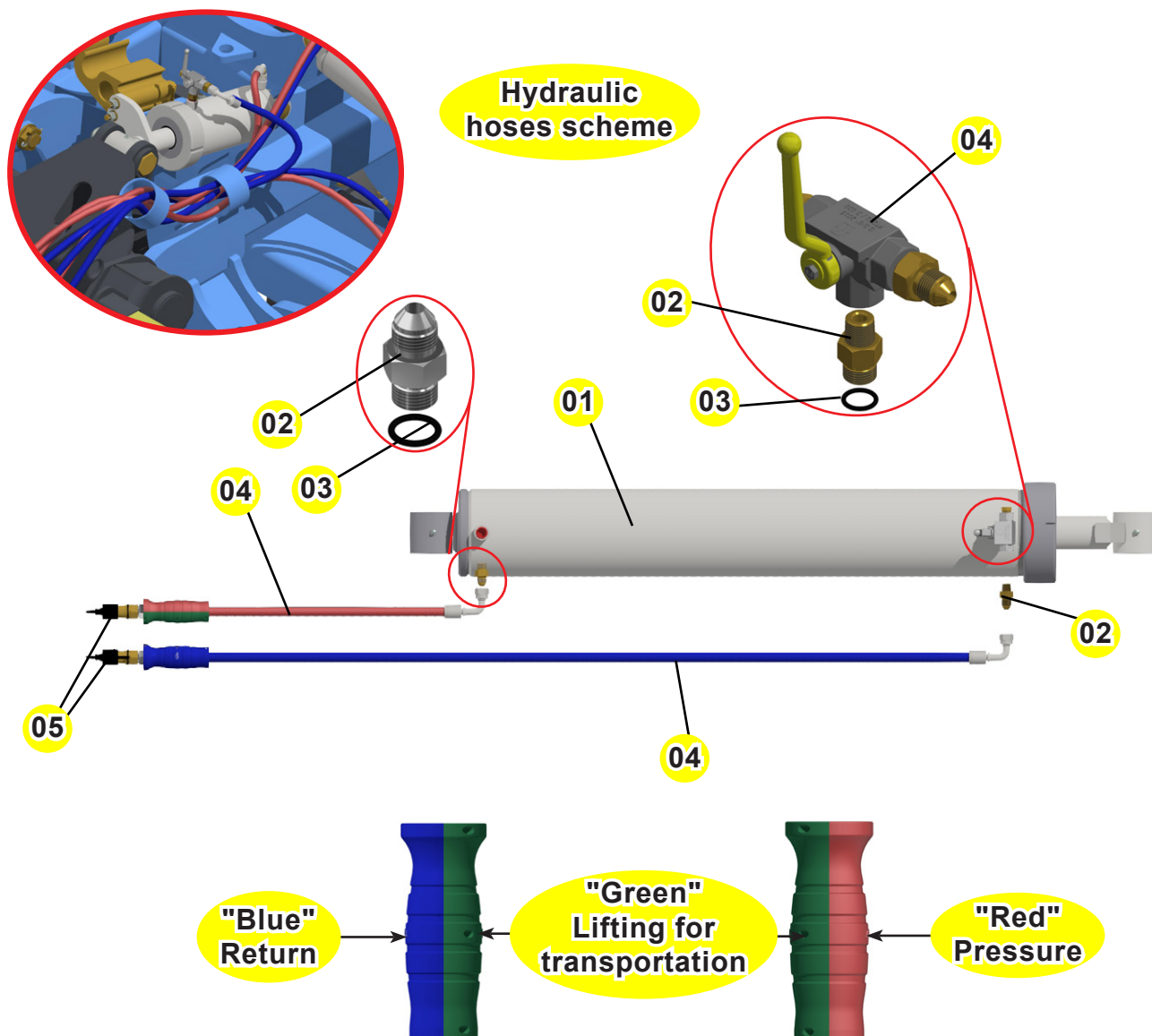
Fasten the double connection (A) used on the hoses that lift the frame to the drawbar (B) using bolts (C), spring and flat washers.

Lock the other double connection (A), which is responsible to activate the wing and cage roller cylinders using bolts (C), spring and flat washers.



Assembly

Hydraulic cylinder to lift the frames for transportation assembly

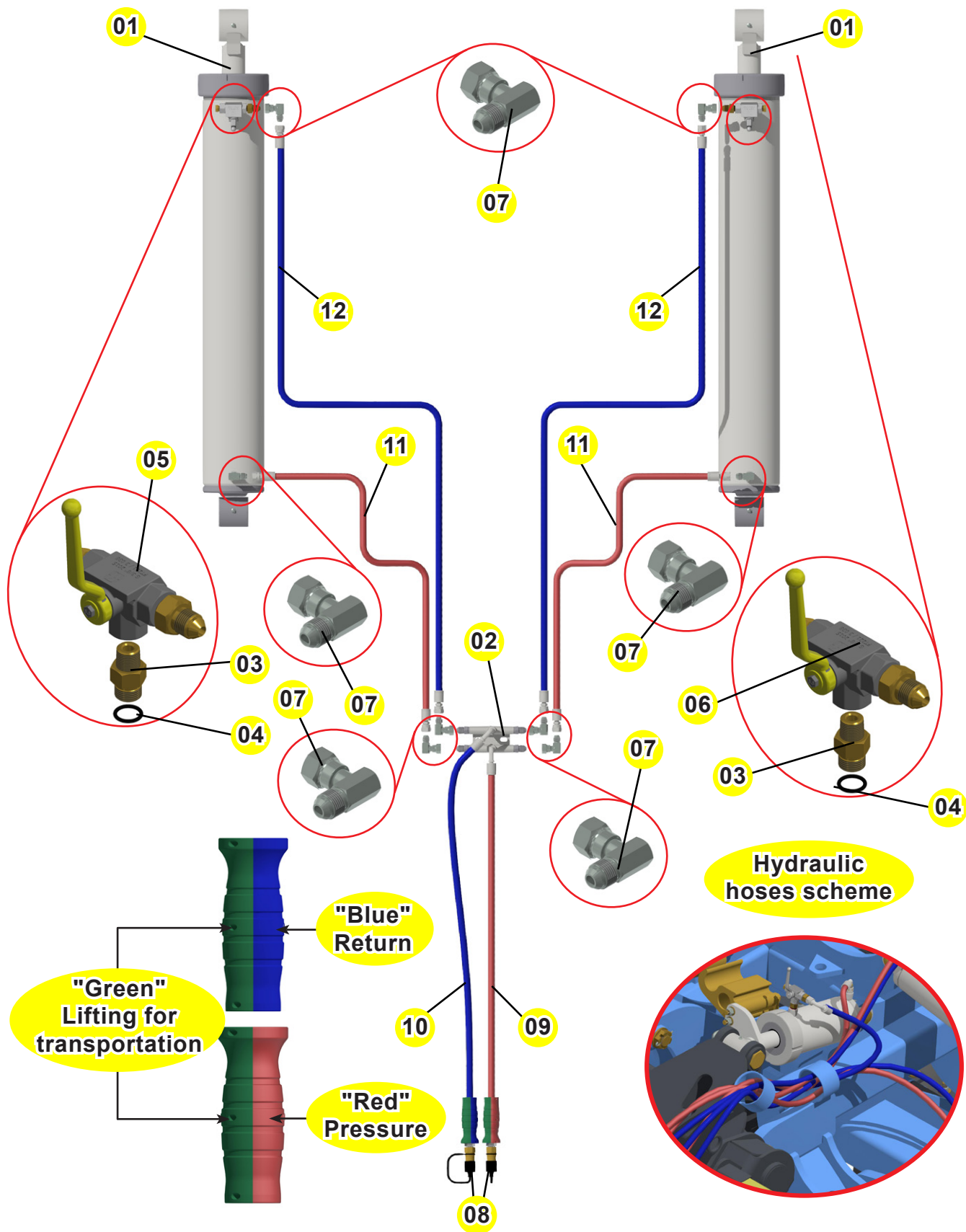


Tatu Speed - 50 disc blades			
Item	Quantity	Description	
01	02	Hydraulic cylinder	
02	03	Nipple	
03	02	O' Ring	
04	01	Left safety valve	
05	02	Male quick coupler	
06	01	3/8 x 5500 TC-TM hose (Red / Green)	Pressure
07	01	3/8 x 6500 TC-TM hose (Blue / Green)	Return

NOTE • If necessary, use thread sealing tape to couple the hoses and the male quick couplers.

Assembly

Hydraulic cylinder to lift the frames for transportation assembly



Hydraulic hoses scheme

NOTE • If necessary, use thread sealing tape to couple the hoses to the male quick couplers.

Assembly

Hydraulic circuit to lift the frames for transportation assembly

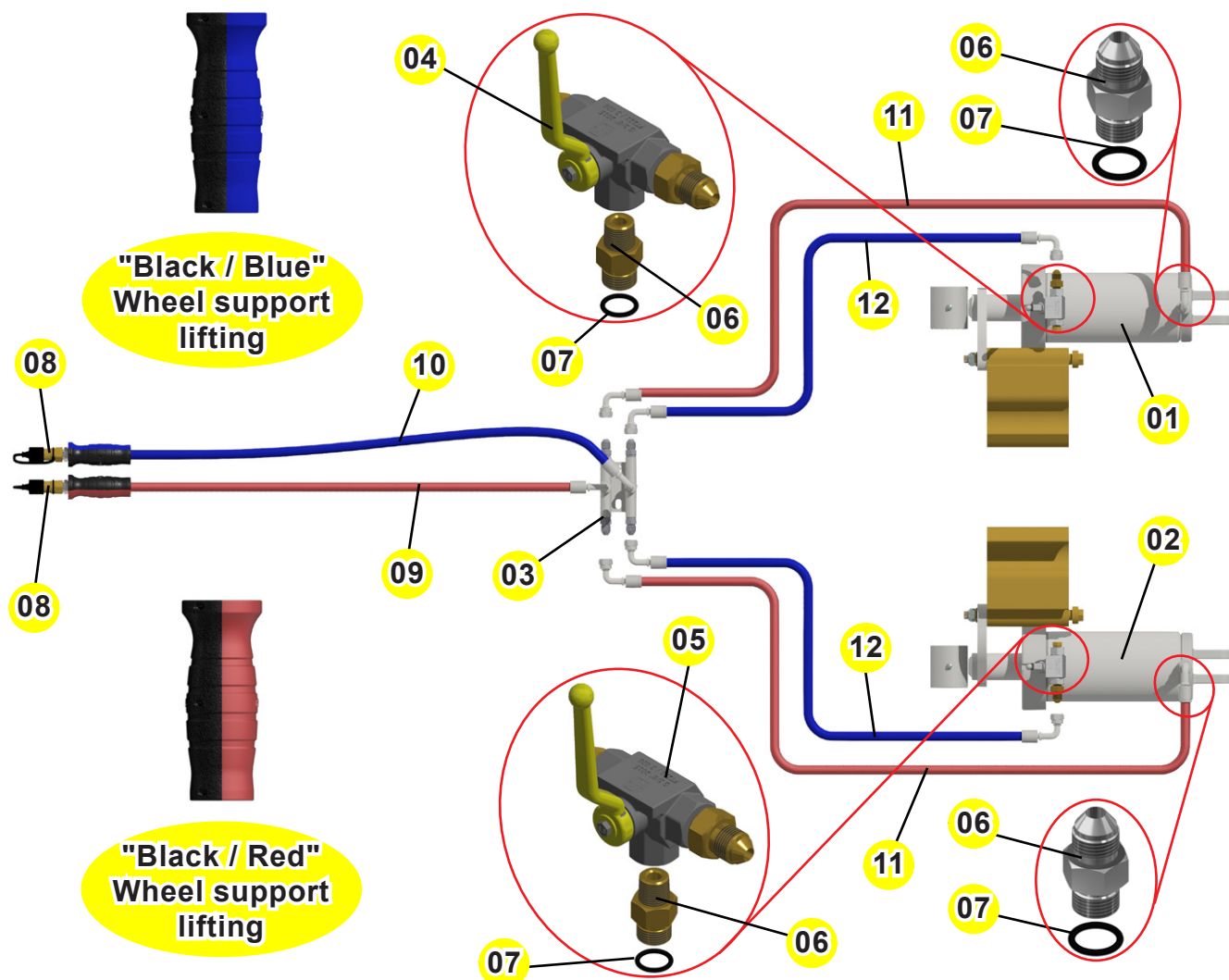
Tatu speed - 60 and 72 disc blades			
Item	Quantity	Description	
01	02	Hydraulic cylinder	
02	01	Double connection	
03	04	Nipple	
04	04	O' ring	
05	01	Right safety valve	
06	01	Left safety valve	
07	08	T connection pipe	
08	02	Male quick coupler	
09	01	3/8 x 6108 TC-TM hose (Red / Green)	Pressure
10	01	3/8 x 6108 TC-TM hose (Blue / Green)	Return
11	02	3/8 x 750 TR-TR hose	Pressure
12	02	3/8 x 750 TR-TR hose	Return

Tatu speed - 84, 96 and 108 disc blades			
Item	Quantity	Description	
01	02	Hydraulic cylinder	
02	01	Double connection	
03	04	Nipple	
04	04	O' ring	
05	01	Right safety valve	
06	01	Left safety valve	
07	08	T connection pipe	
08	02	Male quick coupler	
09	01	3/8 x 8400 TC-TM hose (Red / Green)	Pressure
10	01	3/8 x 8400 TC-TM hose (Blue / Green)	Return
11	02	3/8 x 750 TR-TR hose	Pressure
12	02	3/8 x 750 TR-TR hose	Return

NOTE • If necessary, use thread sealing tape and couple the male quick couplers to the hoses.

Assembly

Hydraulic circuit to lift the wheel supports assembly



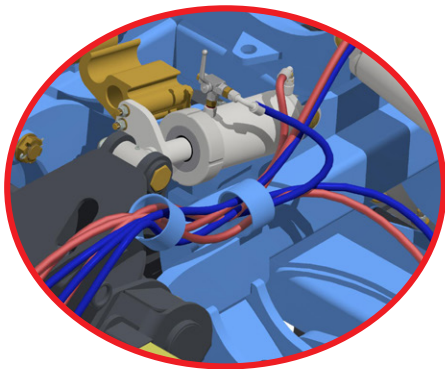
Tatu speed - 50 disc blades

Item	Quantity	Description	
01	01	Right hydraulic cylinder bypass with depth stops	
02	01	Left hydraulic cylinder bypass with depth stops	
03	01	Double connection	
04	01	Right safety valve	
05	01	Left safety valve	
06	04	Nipple fitting 3/4" UNF	
07	04	O' ring	
08	02	Male quick coupler	
09	01	3/8 x 4600 TC-TM hose (Red / Black)	Pressure
10	01	3/8 x 4600 TC-TM hose (Blue / Black)	Return
11	02	3/8 x 4200 TC-TC hose	Pressure
12	02	3/8 x 4200 TC-TC hose	Return

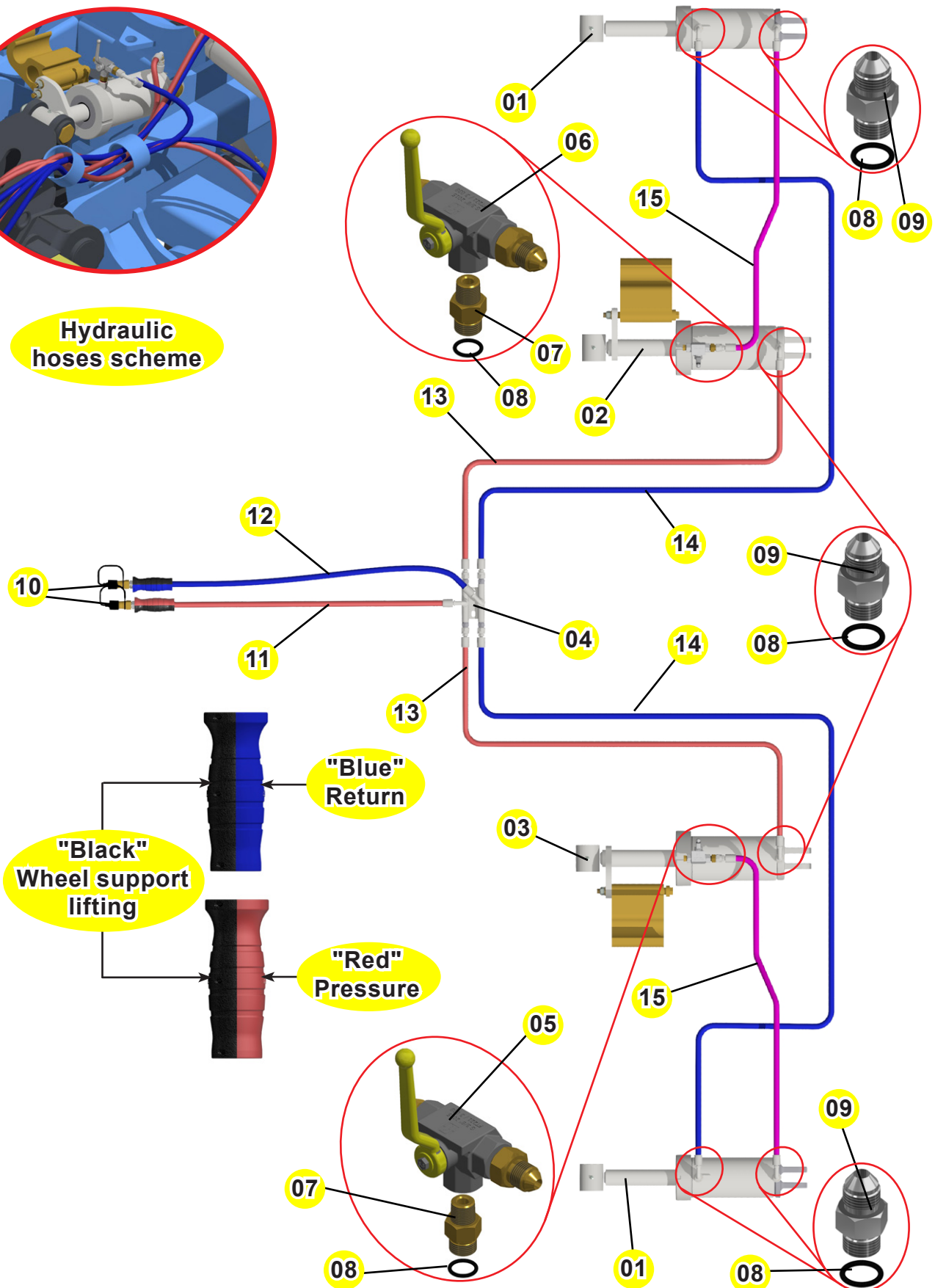
NOTE • If necessary, use thread sealing tape to couple the hoses to the male quick couplers.

Assembly

Hydraulic circuit to lift the wheel supports assembly



Hydraulic hoses scheme



Assembly

Hydraulic circuit to lift the wheel supports assembly

Tatu speed - 60 and 72 disc blades			
Item	Quantity	Description	
01	02	Hydraulic cylinder bypass	
02	01	Right hydraulic cylinder bypass with depth stops	
03	01	Left hydraulic cylinder bypass with depth stops	
04	01	Central distributor	
05	01	Right safety valve	
06	01	Left safety valve	
07	02	Nipple	
08	08	O' ring	
09	06	Nipple fitting	
10	02	Male quick coupler	
11	01	3/8 x 8100 TC-TM hose (Red / Black)	Pressure
12	01	3/8 x 8100 TC-TM hose (Blue / Black)	Return
13	02	3/8 x 1100 TR-TC hose	Pressure
14	02	3/8 x 3600 TR-TC hose	Return
15	02	3/8 x 3200 TR-TC hose	Return/Pressure

Tatu speed - 84 and 96 disc blades			
Item	Quantity	Description	
01	02	Hydraulic cylinder bypass	
02	01	Right hydraulic cylinder bypass with depth stops	
03	01	Left hydraulic cylinder bypass with depth stops	
04	01	Central distributor	
05	01	Right safety valve	
06	01	Left safety valve	
07	02	Nipple fitting	
08	08	O' ring	
09	06	Nipple fitting	
10	02	Male quick coupler	
11	01	3/8 x 10400 TC-TM hose (Red / Black)	Pressure
12	01	3/8 x 10400 TC-TM hose (Blue / Black)	Return
13	02	3/8 x 1100 TR-TC hose	Pressure
14	02	3/8 x 4100 TR-TC hose	Return
15	02	3/8 x 3700 TR-TC hose	Return/Pressure

Assembly

Hydraulic circuit to lift the wheel supports assembly

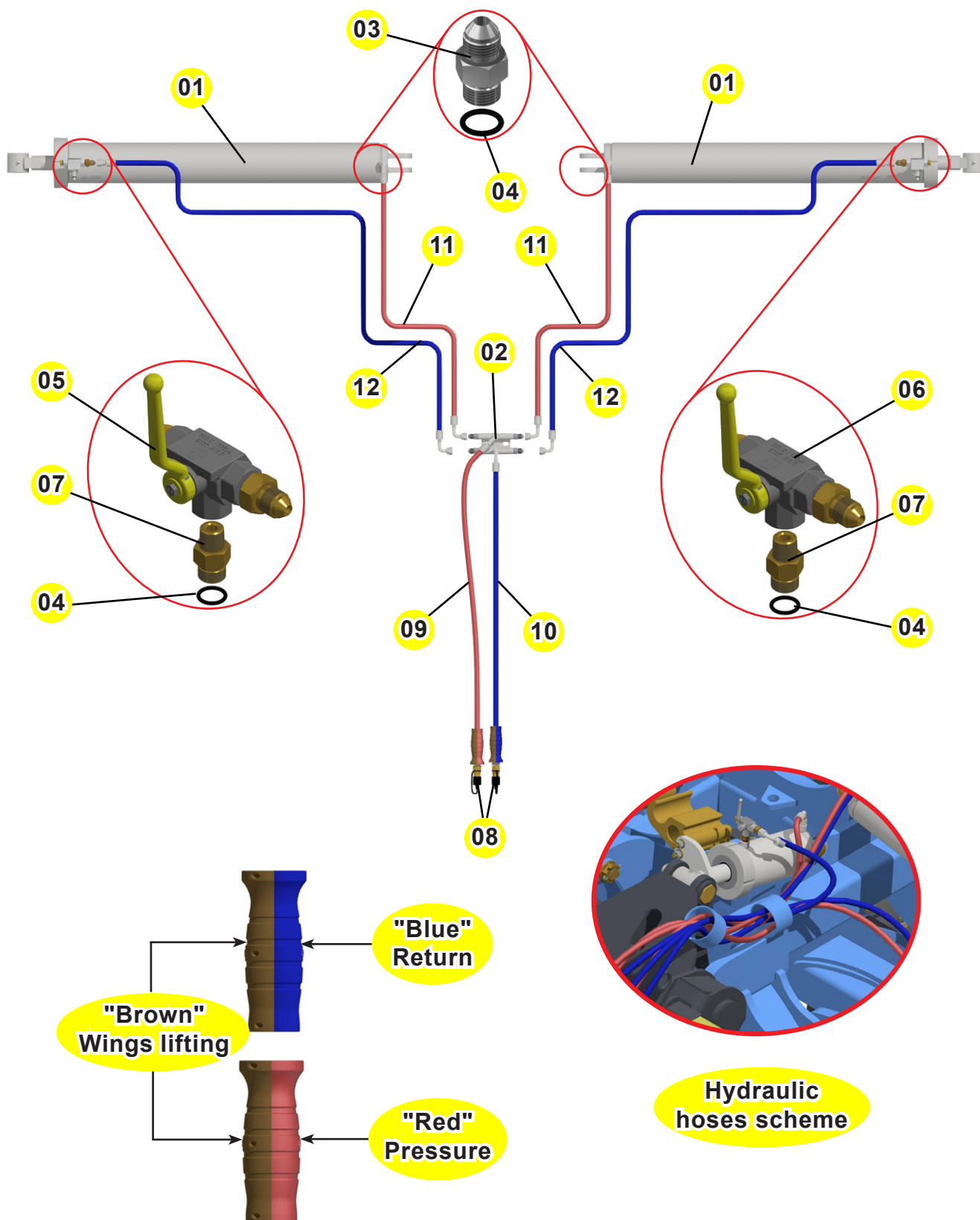
Tatu speed - 108 disc blades			
Item	Quantity	Description	
01	02	Hydraulic cylinder bypass	
02	01	Right hydraulic cylinder bypass with depth stops	
03	01	Left hydraulic cylinder bypass with depth stops	
04	01	Central distributor	
05	01	Right safety valve	
06	01	Left safety valve	
07	02	Nipple fitting	
08	08	O' ring	
09	06	Nipple fitting	
10	02	Male quick coupler	
11	01	3/8 x 10400 TC-TM hose (Red / Black)	Pressure
12	01	3/8 x 10400 TC-TM hose (Blue / Black)	Return
13	02	3/8 x 1100 TR-TC hose	Pressure
14	02	3/8 x 5400 TR-TC hose	Return
15	02	3/8 x 5000 TR-TC hose	Return/Pressure

NOTE

- If necessary, use thread sealing tape to couple the hoses and the male quick couplers.
- After assembling the equipment, activate the hydraulic circuit so that the central frame will lift up. Keep the cylinders activated until all frames are leveled.
- This procedure is executed only once to fill up the hydraulic circuit completely. The other activations will carry out the operation with a leveled equipment.

Assembly

Hydraulic circuit to lift the wings assembly



NOTE • If necessary, use thread sealing tape to couple the hoses and the male quick couplers.

Assembly

Hydraulic circuit to lift the wings assembly

Tatu speed - 50 disc blades			
Item	Quantity	Description	
01	02	Hydraulic cylinder	
02	01	Double connection	
03	02	Nipple fitting	
04	04	O' ring	
05	01	Right safety valve	
06	01	Left safety valve	
07	02	Nipple fitting	
08	02	Male quick coupler	
09	01	3/8 x 4600 TC-TM hose (Red / Brown)	Pressure
10	01	3/8 x 4600 TC-TM hose (Blue / Brown)	Return
11	02	3/8 x 4200 TC-TC hose	Pressure
12	02	3/8 x 5100 TR-TC hose	Return

Tatu speed - 60 and 72 disc blades			
Item	Quantity	Description	
01	02	Hydraulic cylinder	
02	01	Central distributor	
03	02	Nipple	
04	04	O' ring	
05	01	Right safety valve	
06	01	Left safety valve	
07	02	Nipple fitting	
08	02	Male quick coupler	
09	01	3/8 x 8700 TC-TM hose (Red / Brown)	Pressure
10	01	3/8 x 8700 TC-TM hose (Blue / Brown)	Return
11	02	3/8 x 1100 TC-TR hose	Pressure
12	02	3/8 x 2100 TR-TR hose	Return

Assembly

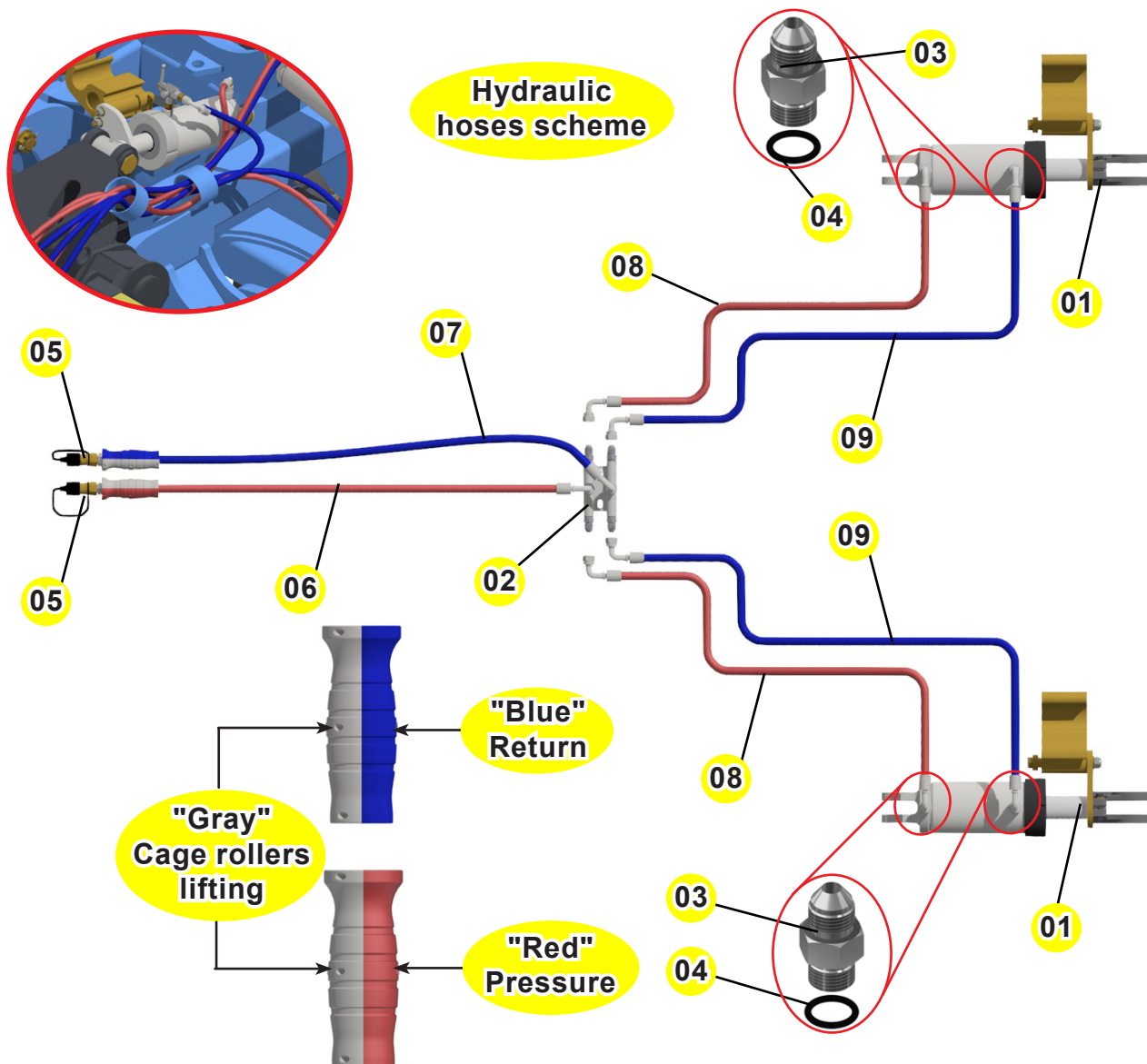
Hydraulic circuit to lift the wings assembly

Tatu speed - 84 and 96 disc blades			
Item	Quantity	Description	
01	02	Hydraulic cylinder	
02	01	Central distribution	
03	02	Nipple fitting	
04	04	O' ring	
05	01	Right safety valve	
06	01	Left safety valve	
07	02	Nipple fitting	
08	02	Male quick coupler	
09	01	3/8 x 11000 TC-TM hose (Red / Brown)	Pressure
10	01	3/8 x 11000 TC-TM hose (Blue / Brown)	Return
11	02	3/8 x 1600 TC-TR hose	Pressure
12	02	3/8 x 2600 TR-TR hose	Return

Tatu speed - 108 disc blades			
Item	Quantity	Description	
01	02	Hydraulic cylinder	
02	01	Central distributor	
03	02	Nipple fitting	
04	04	O' ring	
05	01	Right safety valve	
06	01	Left safety valve	
07	02	Nipple fitting	
08	02	Male quick coupler	
09	01	3/8 x 11000 TC-TM hose (Red / Brown)	Pressure
10	01	3/8 x 11000 TC-TM hose (Blue / Brown)	Return
11	02	3/8 x 1900 TC-TR hose	Pressure
12	02	3/8 x 2900 TR-TR hose	Return

Assembly

Hydraulic circuit to lift the cage rollers assembly



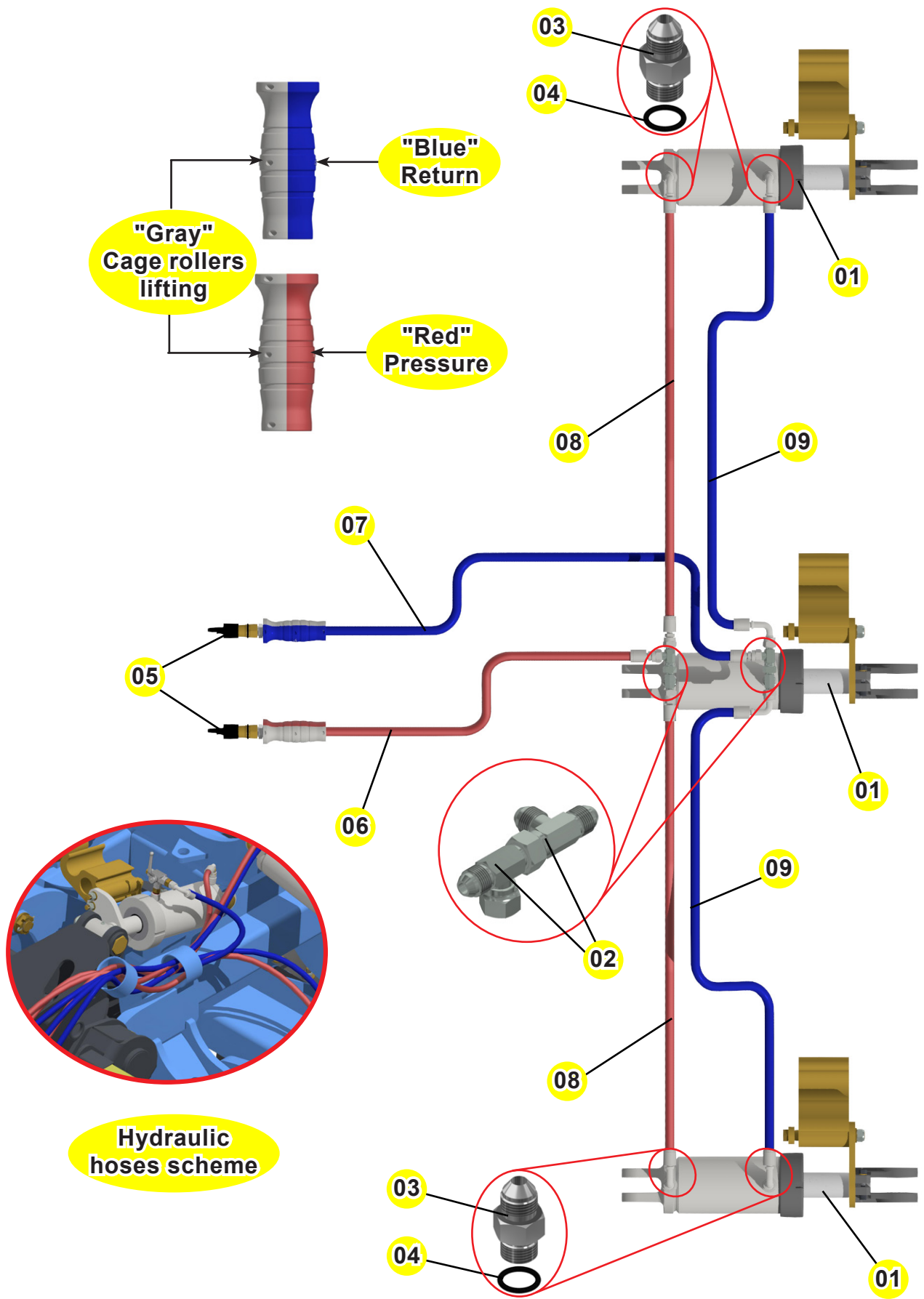
Tatu speed - 50 disc blades

Item	Quantity	Description	
01	02	Hydraulic cylinder with depth stops	
02	01	Double connection	
03	04	3/4" UNF nipple fitting	
04	04	O' ring	
05	01	Male quick coupler	
06	01	3/8 x 4600 TC-TM hose (Red / Gray)	Pressure
07	01	3/8 x 4600 TC-TM hose (Blue / Gray)	Return
08	01	3/8 x 6100 TC-TC hose	Pressure
09	01	3/8 x 6100 TC-TC hose	Return

NOTE • If necessary, use thread sealing tape to couple the hoses and the male quick couplers.

Assembly

Hydraulic circuit to lift the cage rollers assembly



Assembly

Hydraulic circuit to lift the cage rollers assembly

Tatu speed - 60 disc blades			
Item	Quantity	Description	
01	03	Hydraulic cylinder with depth stops	
02	04	"T" adapter with nut	
03	06	Nipple fitting	
04	06	O' ring	
05	01	Male quick coupler	
06	01	3/8 x 9000 TR-TM hose (Red / Gray)	Pressure
07	01	3/8 x 9250 TR-TM hose (Blue / Gray)	Return
08	01	3/8 x 3500 TR-TC hose	Pressure
09	01	3/8 x 3800 TC-TC hose	Return

Tatu speed - 72 disc blades			
Item	Quantity	Description	
01	03	Hydraulic cylinder with depth stops	
02	04	"T" adapter with nut	
03	06	Nipple fitting	
04	06	O' ring	
05	01	Male quick coupler	
06	01	3/8 x 9000 TR-TM hose (Red / Gray)	Pressure
07	01	3/8 x 9250 TR-TM hose (Blue / Gray)	Return
08	01	3/8 x 3900 TR-TC hose	Pressure
09	01	3/8 x 4200 TC-TC hose	Return

Tatu speed - 84 disc blades			
Item	Quantity	Description	
01	03	Hydraulic cylinder with depth stops	
02	04	"T" adapter with nut	
03	06	Nipple fitting	
04	06	O' ring	
05	01	Male quick coupler	
06	01	3/8 x 11300 TR-TM hose (Red / Gray)	Pressure
07	01	3/8 x 11600 TR-TM hose (Blue / Gray)	Return
08	01	3/8 x 4600 TR-TC hose	Pressure
09	01	3/8 x 4900 TC-TC hose	Return

Assembly

Hydraulic circuit to lift the cage rollers assembly

Tatu Speed - 96 disc blades			
Item	Quantity	Description	
01	03	Hydraulic cylinder with depth stops	
02	04	"T" adapter with nut	
03	06	Nipple fitting	
04	06	O' ring	
05	01	Male quick coupler	
06	01	3/8 x 11300 TR-TM hose (Red / Gray)	Pressure
07	01	3/8 x 11600 TR-TM hose (Blue / Gray)	Return
08	01	3/8 x 5000 TR-TC hose	Pressure
09	01	3/8 x 5300 TC-TC hose	Return

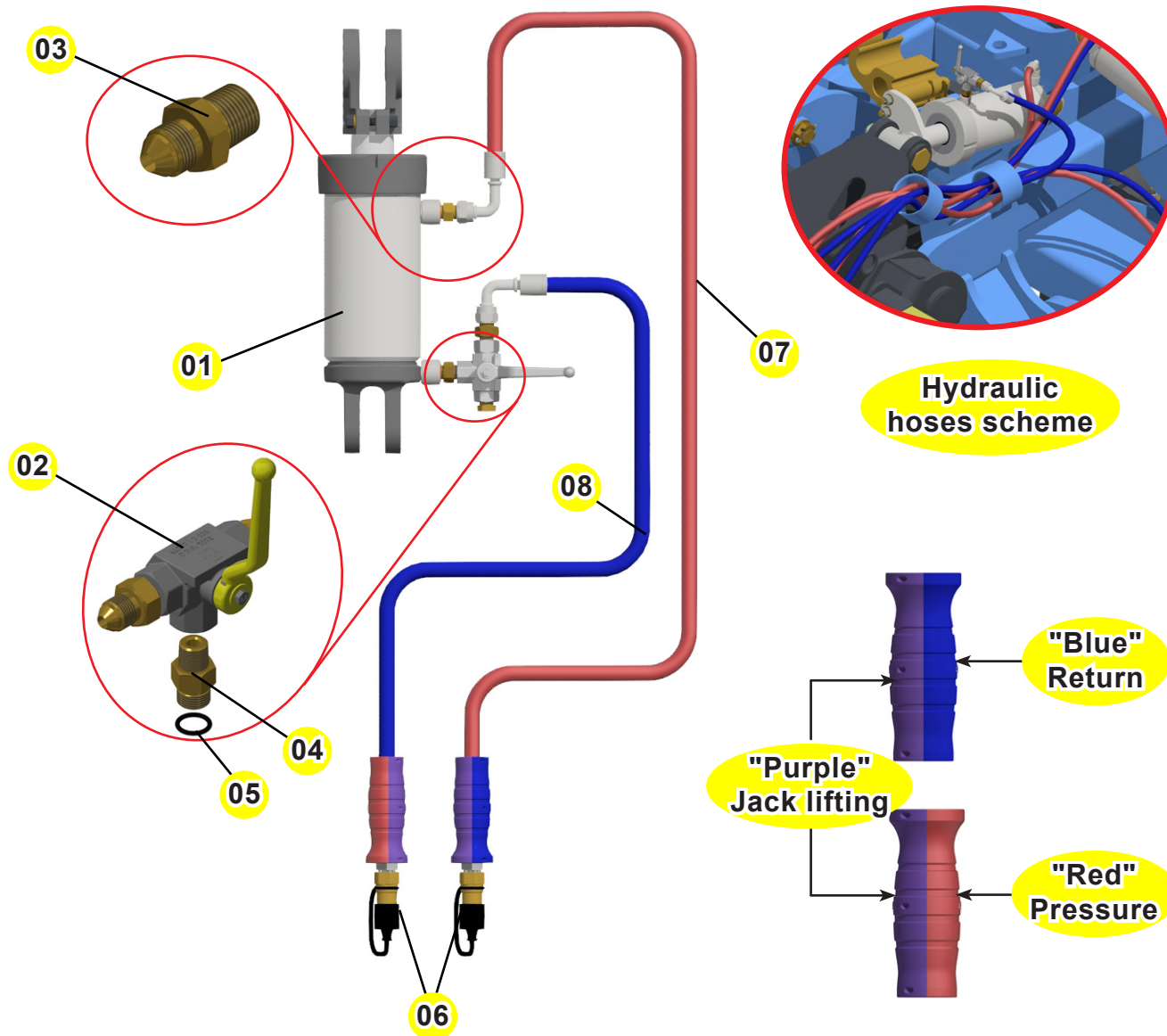
Tatu speed - 108 disc blades			
Item	Quantity	Description	
01	03	Hydraulic cylinder with depth stops	
02	04	"T" adapter with nut	
03	06	Nipple fitting	
04	06	O' ring	
05	01	Male quick coupler	
06	01	3/8 x 11300 TR-TM hose (Red / Gray)	Pressure
07	01	3/8 x 11600 TR-TM hose (Blue / Gray)	Return
08	01	3/8 x 5500 TR-TC hose	Pressure
09	01	3/8 x 5800 TC-TC hose	Return

NOTE

- In order to protect the cylinder ports, they are delivered to the owner inside the components box. When assembling the cylinders, their ports must face up and the cylinder rods must face the cage roller support, being the bolt up.
- If necessary, use thread sealing tape to couple the hoses and the male quick couplers.

Assembly

Hydraulic circuit to lift the jack assembly

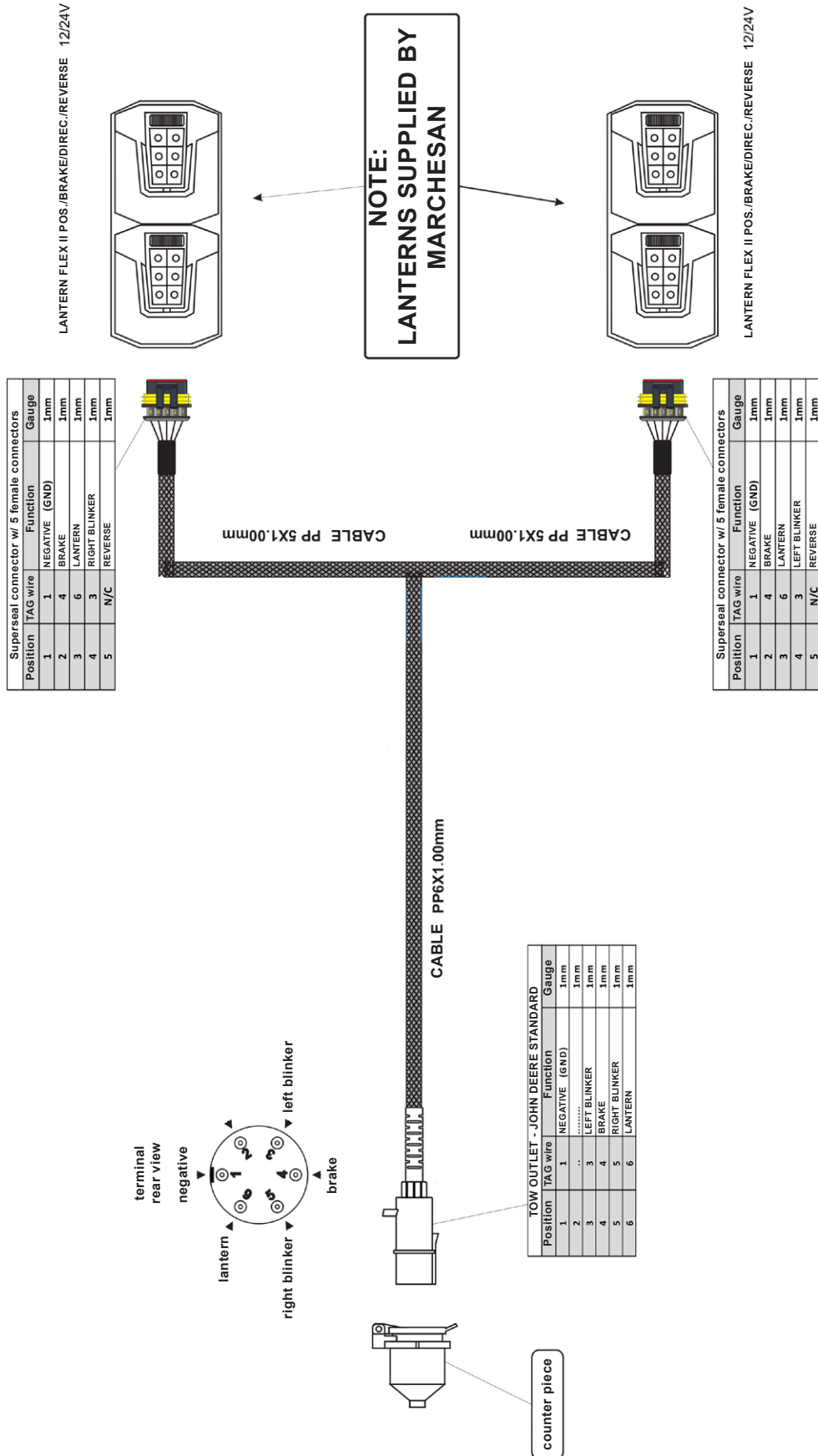


Tatu speed - 50 to 108 disc blades			
Item	Quantity	Description	
01	01	Hydraulic cylinder	
02	01	Right safety valve	
03	01	3/4" UNF x 44 nipple fitting with reduction	
04	01	3/4" UNF x 3/8" BSPT x 41 nipple fitting with reduction	
05	02	O' ring	
06	02	Male quick coupler	
07	01	3/8 x 32000 TC-TM hose (Red / Purple)	Pressure
08	01	3/8 x 32000 TC-TM hose (Blue / Purple)	Return

NOTE • If necessary, use thread sealing tape to couple the hoses and the male quick couplers.

Assembly

Rear lantern electric circuit



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

Preparing the equipment

Always park on a level, dry area that is free of debris and foreign objects. Follow this procedure to prepare the equipment:

- Remove foreign objects from the equipment and working area;
- Make sure there is enough room to back the tractor up to the hitch;
- Start the tractor and slowly back it up to the hitch point;
- Use a clean cloth or paper towel to clean the couplers on the ends of the hoses. Also clean the area around the couplers on the tractor.
- Check the tires inflation and keep the same pressure on them, according to the "maintenance" section.
- Lubricate all grease fittings appropriately (See instructions - "maintenance" section).

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 of times and check if the couplers are clean.

Remove the caps from the quick couplers and connect them to the tractor hitch.

Be sure to match the pressure and return line to one valve bank;

Relieve the control valve pressure before removing the hoses;

Use the jack controls to raise or lower the hitch to align with the drawbar;

The tractor drawbar must remain fixed during work and transportation;

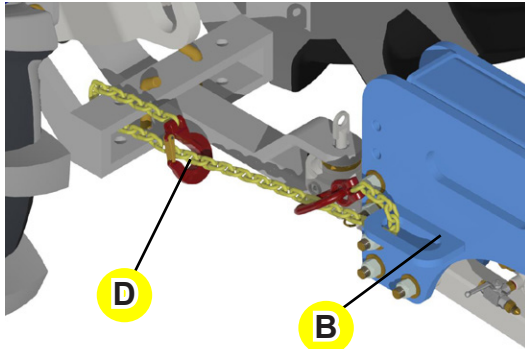
Couple the drawbar (B) to the tractor hitch bar using proper locking. To facilitate hitching, use the jack (C) cylinder. Lock the safety chain (D) to the equipment and to the tractor, leaving a small clearance that will allow maneuvers.

ATTENTION

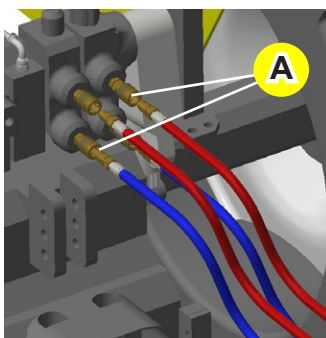
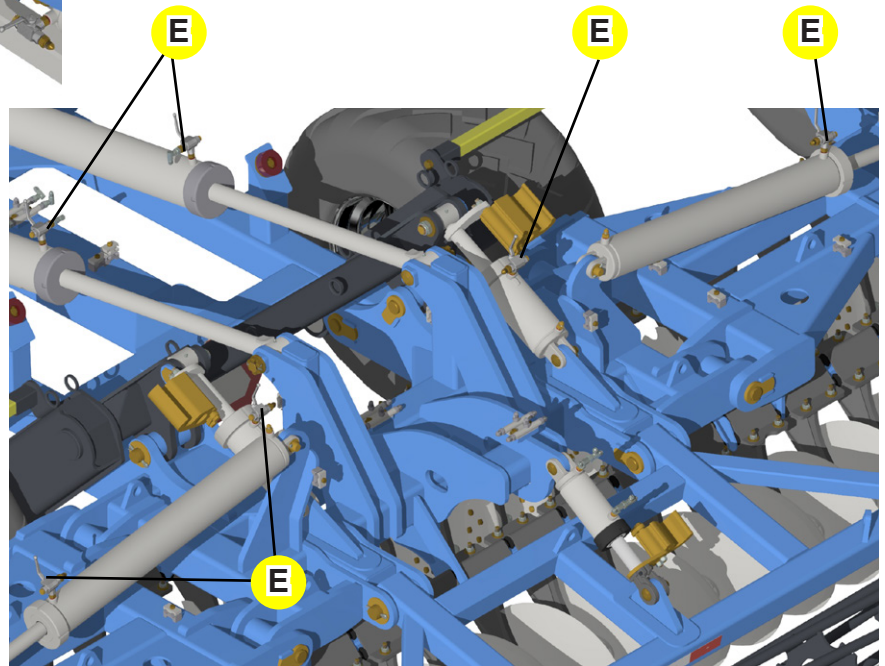
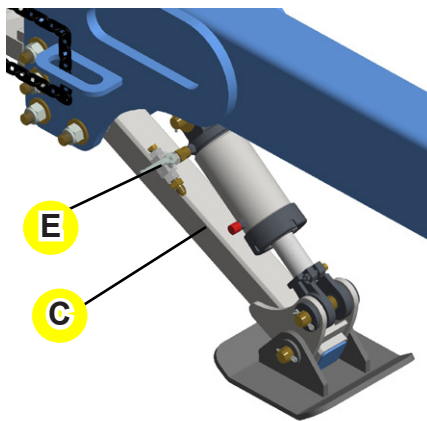
- The tractor must be hitched properly to prevent unit from tipping upward while folding the wings into and out of transport.
- The safety chain (D) must also always be properly installed.

Set-up instructions

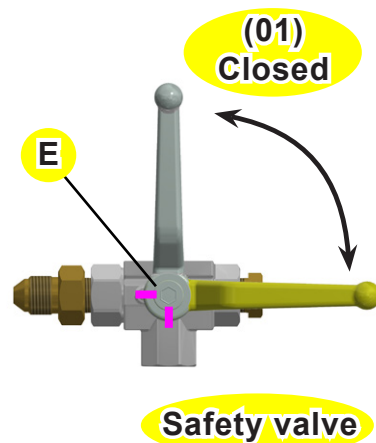
Hitching to the tractor



Note that there are several holes on the drawbar (B) so that the equipment can be used on many settings to keep the drawbar leveled related to the tractor hitch bar.



Power take-off (PTO)

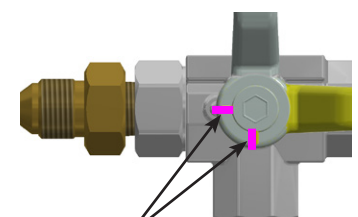


(01)
Closed

01 Closed for transportation

02 Opened for working

(02)
Opened



Markers

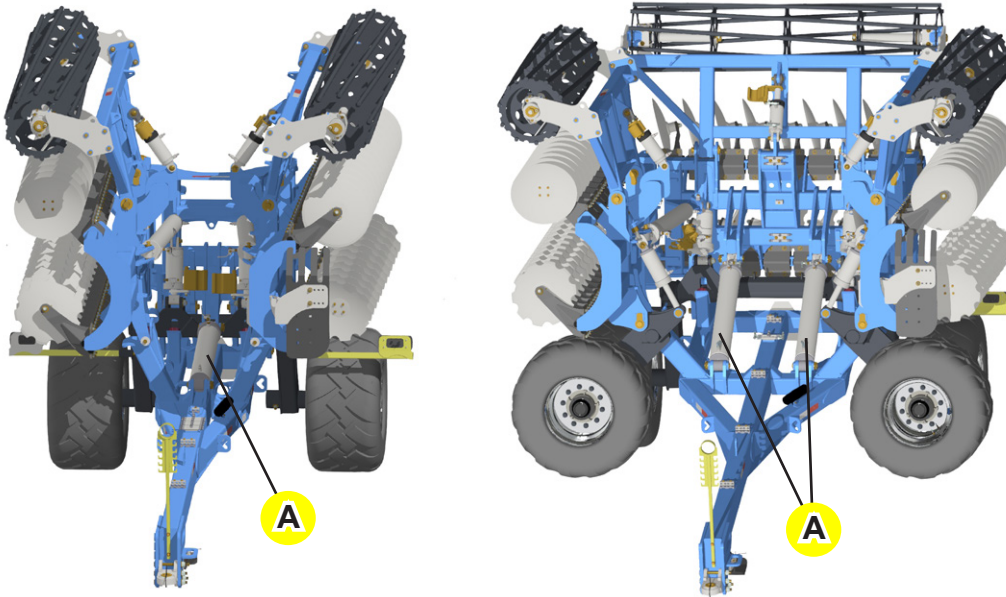
IMPORTANT

- Close the safety valve (E) to prevent that this circuit works accidentally during transportation.
- Such action will inactive the cylinder, avoiding damages to the hoses and to the cylinder itself during transportation.
- Keep the lever on the opened position when the equipment is working.
- Note the markers on the lever, as they represent the input and output.

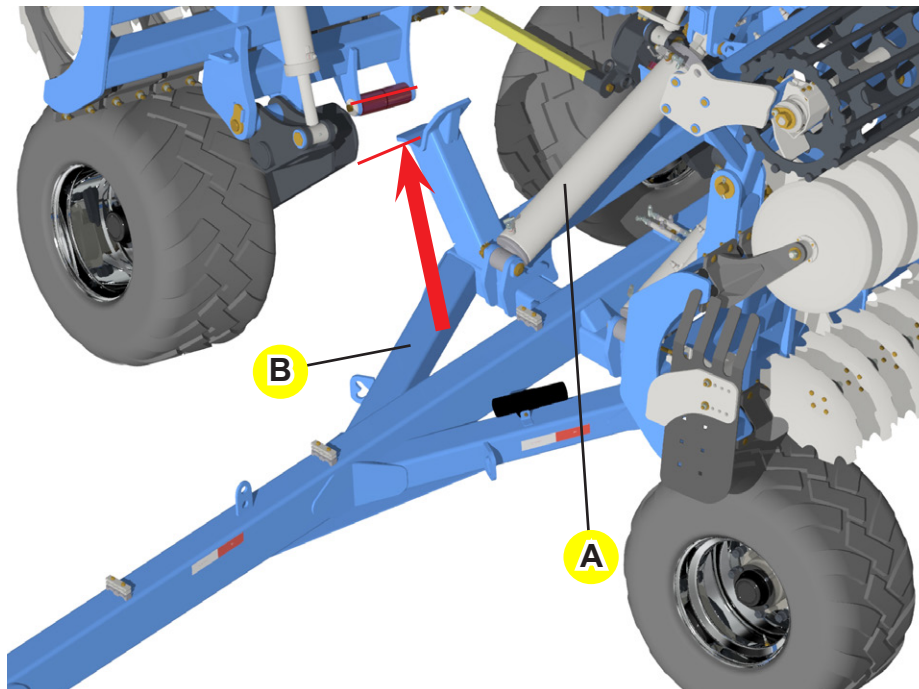
Set-up instructions

Transport to field position

To position the equipment on the field, proceed as follows:



- On level ground, position the equipment so it is straight in-line behind the tractor;
- Slightly extend the cylinders (A) just enough to remove the weight from the drawbar (B) and to be out of the support. Do not lift more than needed;



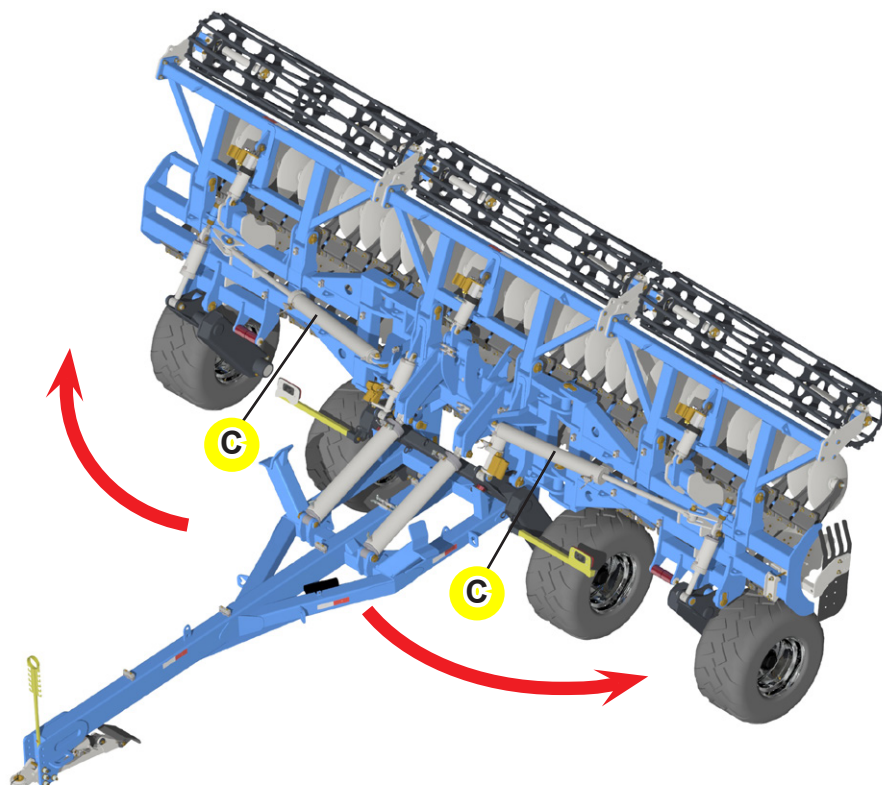
ATTENTION

- Do not fully extend the cylinders (A) at this point. Follow proper procedures to prevent possible equipment damage or failure.

Set-up instructions

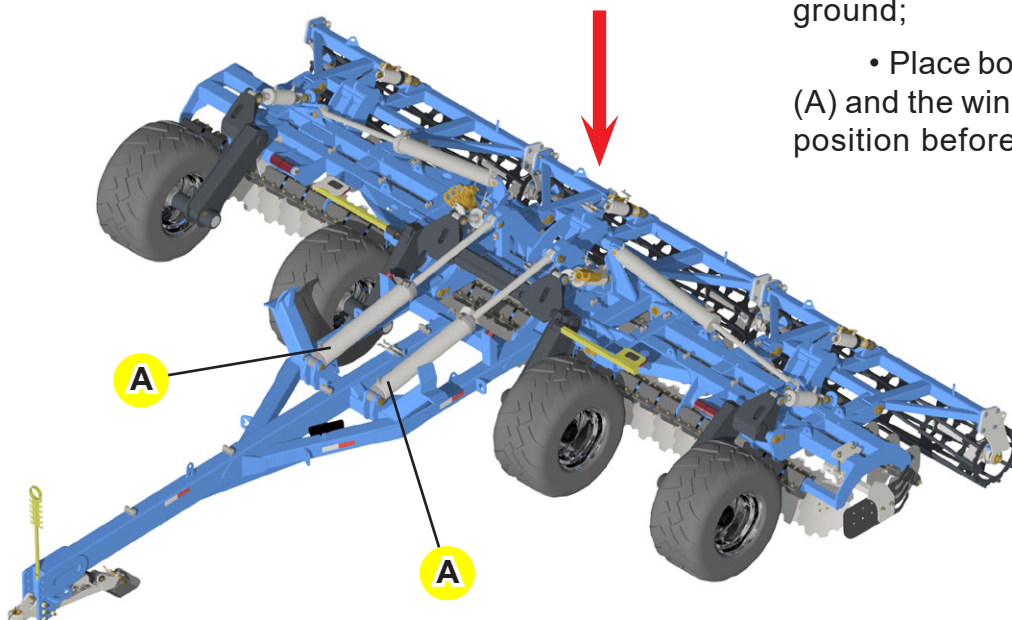
Transport to field position

- Extend the wing cylinders (C) to fully open the frames behind the equipment;



- After fully opening the wings, extend the drawbar cylinders (A) to completely lower the disc gangs to the ground;

- Place both the drawbar cylinders (A) and the wing cylinders (C) into float position before operation;



IMPORTANT

- Both drawbar (A) and wing cylinders (C) must be in float position in order for the equipment to properly contour the ground and to avoid possible cylinder or equipment damage.

Set-up instructions

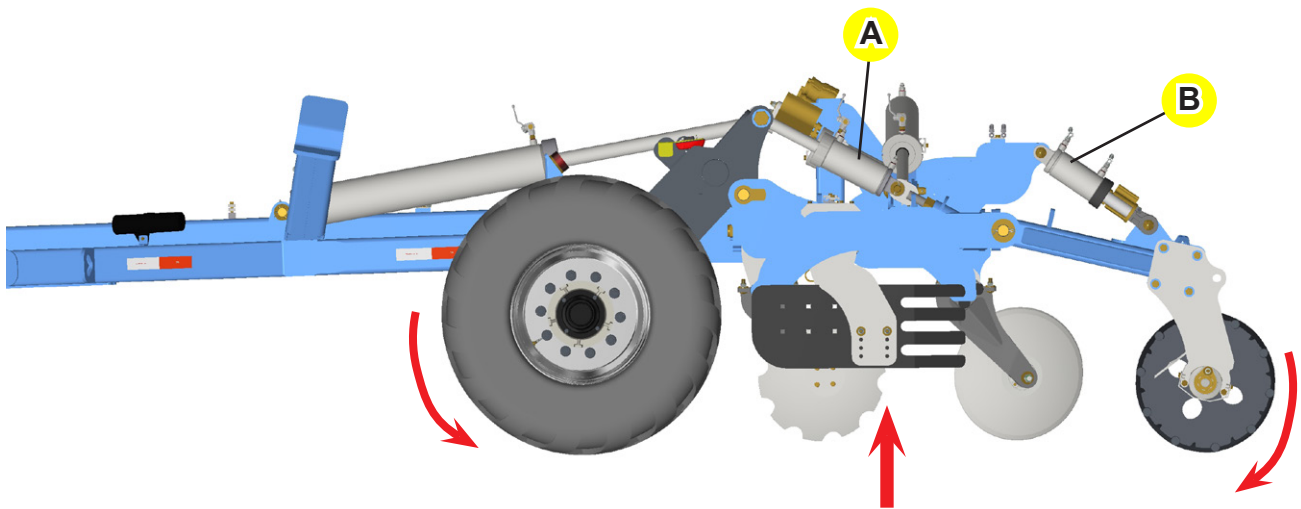
Field to transport position

To position the equipment for transportation, proceed as follows:

- In field position, fully extend the wheel support cylinders (A) and the cage roller cylinders (B) to completely raise the disc frames;

IMPORTANT

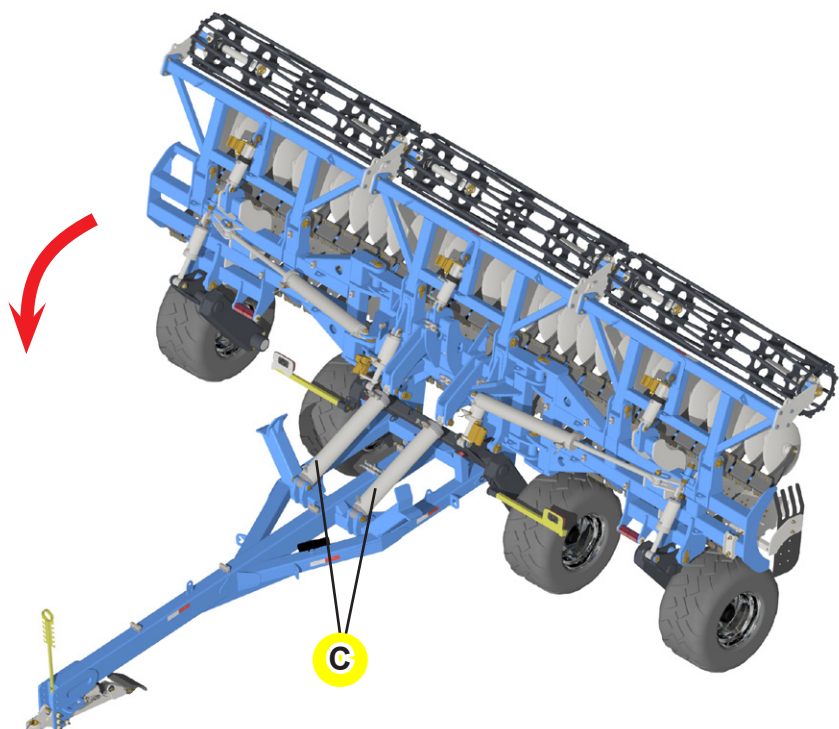
- Do not retract the cylinders on the wings to lift it at this point. Follow proper procedures to prevent possible equipment damage or failure.



NOTE

- It is important to fully raise the disc frames up as high as possible as it puts the cage rollers and wheels in the correct position for lifting the frames.

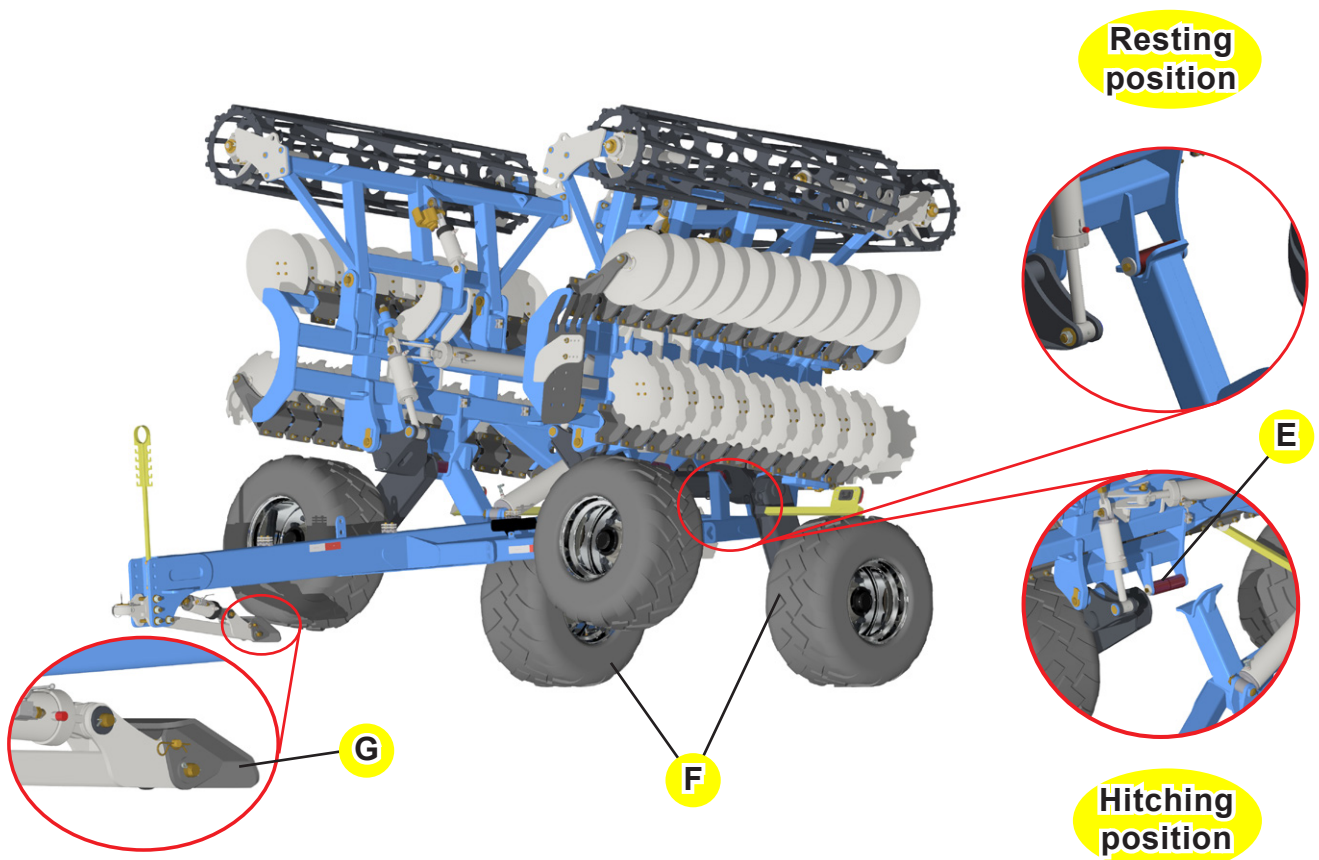
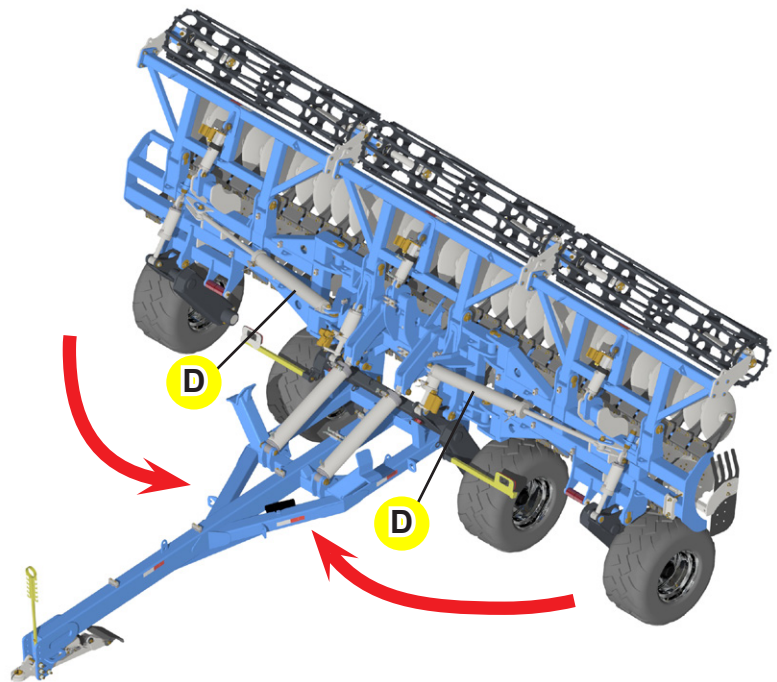
- Retract the drawbar cylinders (C), fully raising the complete rear gang;



Set-up instructions

Field to transport position

- After raising the rear gang, retract the wing cylinders (D) to bring both frames inward towards the drawbar;
- When the wings get closer to the drawbar, you may need to slightly extend the drawbar cylinders (C) so the stops (E) can reach the correct position;
- When the stops from the wings are in proper position above the drawbar, slightly lower the wings in place by retracting the drawbar cylinders (C) to gently set the frames to transport position.



IMPORTANT

- After articulating the frames, articulate the wheel support cylinders (F) totally and close the valves to transport the equipment.
- Lock the jack base (G) using a pin and cotter pin.

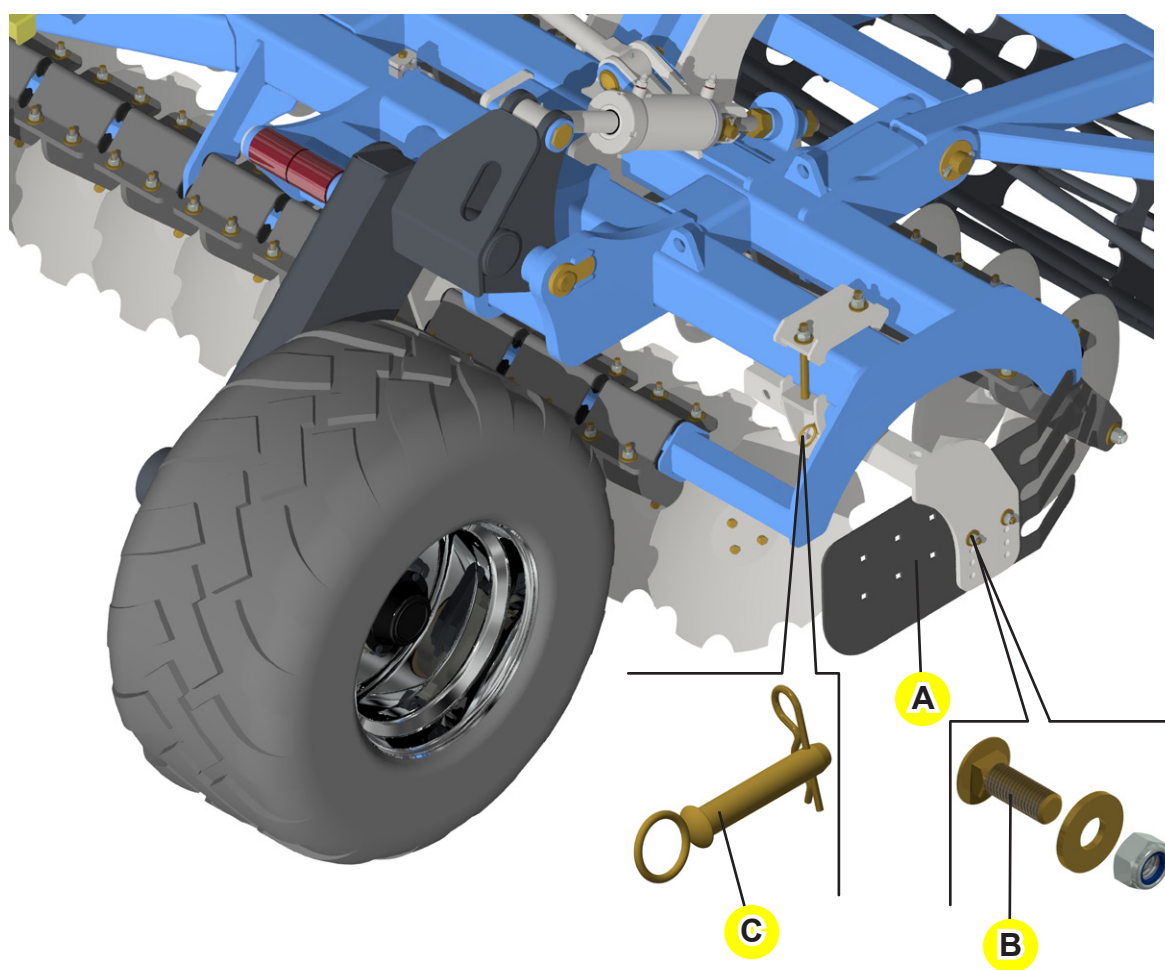
Adjustments and operations

Deflector adjustment

If it is necessary to adjust the deflector (A) horizontally, loosen up the pins (C) and cotter pin and adjust using the deflector holes. After the adjustment, replace the pin.

To adjust the deflector (A) vertically, loosen up the bolts (B), flat washers and nuts and then position the deflector on the desired holes.

To adjust the deflector (A) along the equipment, loosen up the bolts (B), flat washer and nuts and then position the deflector along the horizontal holes.



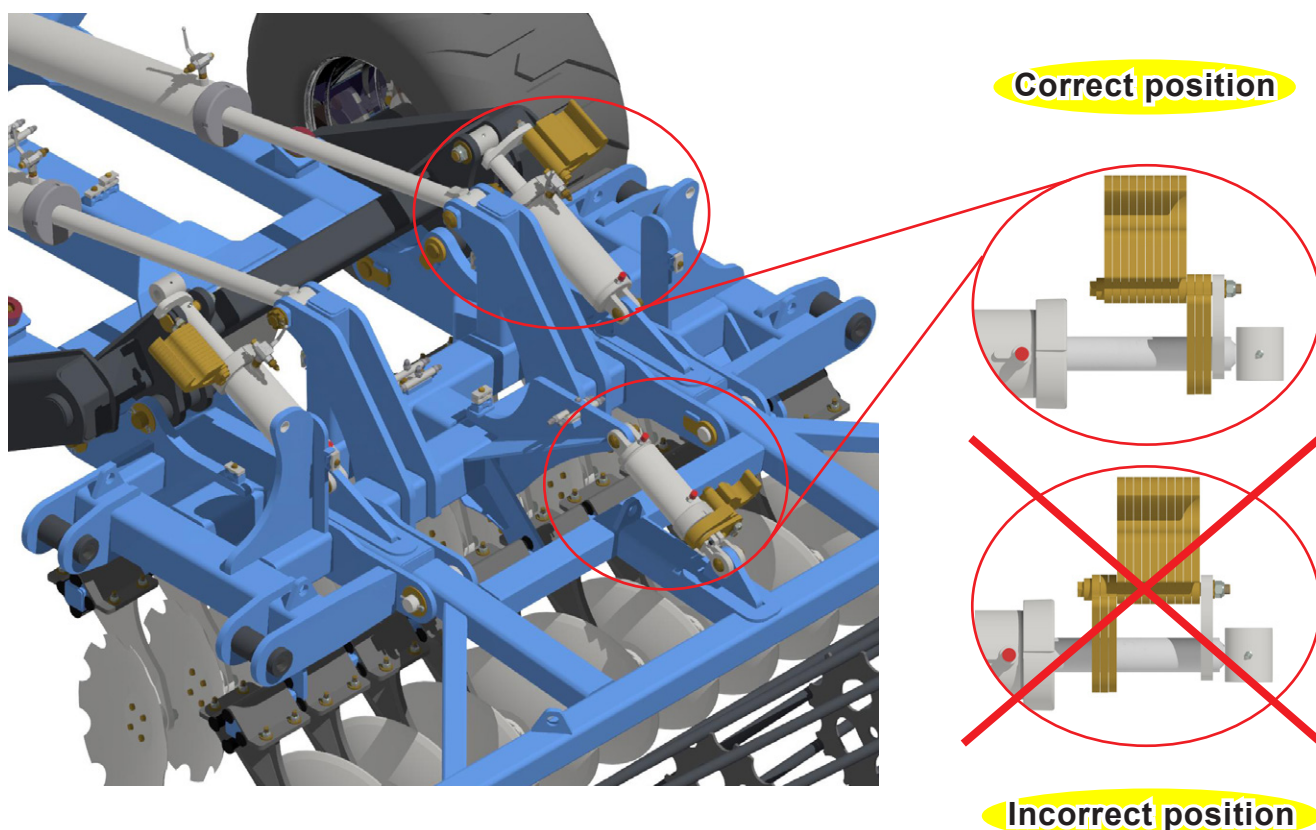
NOTE • To avoid furrows, position the deflector (A) slightly above the soil surface.

Adjustments and operations

Disc blades depth adjustment

The disc blades depth definition relies on the type of operation. Usually, this equipment is used to cut straw to reduced sizes and to partially incorporate to the soil; the part that was not incorporated to the soil remains on the surface to protect it from wind erosion and rain. This equipment is also used to level and texturize the soil for the next plantation.

The front and rear disc gangs depth adjustment is done by including or removing the depth stops from the wheel support and cage roller cylinders.



ATTENTION

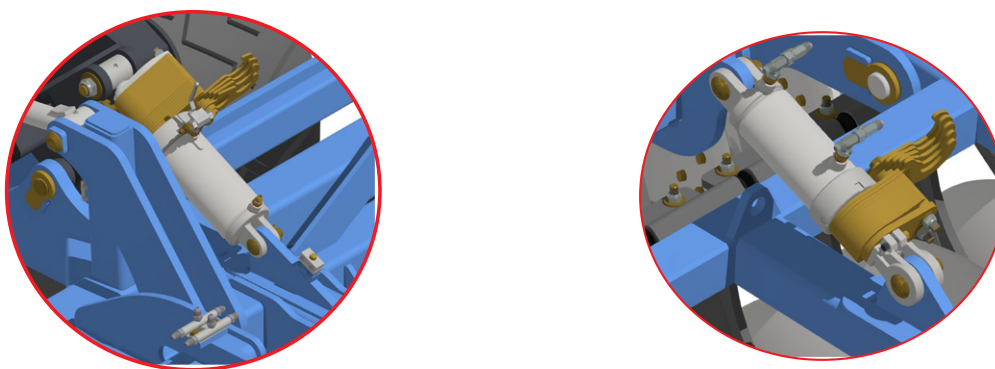
- Always place the depth stops that are near the rod to the cylinder barrel direction and never the opposite, as such act may cause damages to the cylinder and equipment.

Adjustments and operations

Disc blades depth adjustment

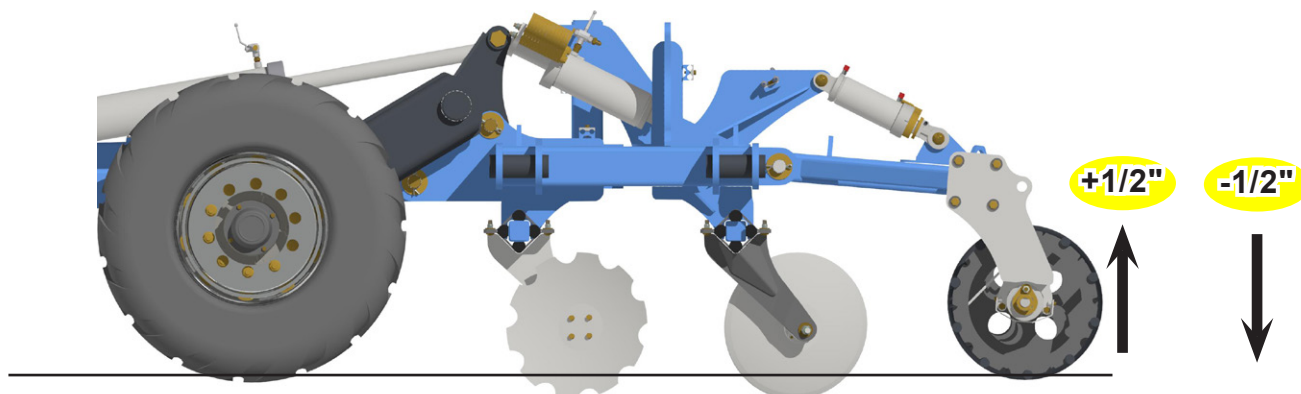
To start the disc blades depth adjustment, position all the depth stops around the wheel support and cage roller cylinder rods.

As an initial adjustment reference, it is necessary to remove four depth stops from the wheel support cylinder rods and five depth stops from the cage roller cylinder rods.



The front and rear disc blades penetration will be of 2", considering disc blades with a diameter of 22" installed on the front and rear disc gangs.

Once the initial adjustment cited above were executed, start the passes to check if the leveling and texture are as desired, otherwise for every 1/4" that is added on the wheel support cylinder rod and cage roller cylinder rod, 1/2" on the front and rear disc blades working depth will be decreased. Thus, for every 1/4" that is removed on the wheel support cylinder rod and cage roller cylinder rod, 1/2" on the front and rear disc blades working depth will be increased.



ATTENTION

- An average working depth of 2" is recommended. This depth, however, can be adjusted according to the soil type, humidity, culture and topography.
- To adjust an equipment that has a 20" cutting depth (50 disc blades), remove four depth stops from the wheel support cylinder rods and 10 depth stops from the cage roller cylinder rods to reach a 2" working depth on the front and rear disc blades.

Adjustments and operations

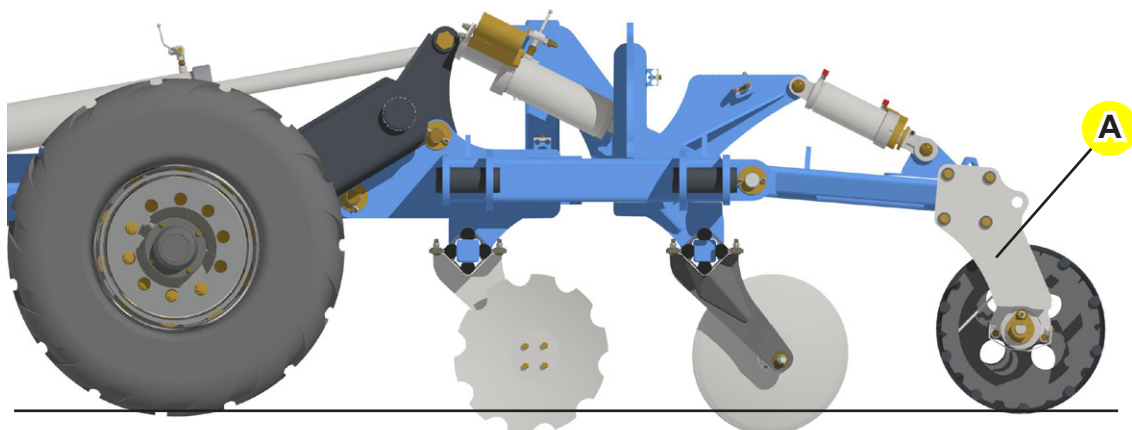
Disc blades depth adjustment

It is recommended to keep the working depth on a range of 2" to 4" (50.4 mm to 101.6 mm) on the front and rear disc blades, especially when cutting residues to reduced sizes and then incorporating these residues to the soil, as well as for leveling and texturization operations.

For the cutting and residue incorporation operations, it is recommended to keep a working depth range of 2" to 4" (50.4 mm to 101.6 mm) on the front and rear disc blades and to keep a working speed range of 12.8 km/h to 22.5 km/h (8 mph to 14 mph).

For the soil leveling and texturization operations, it is recommended to keep a working depth range of 1.5" to 3.5" (38.1 mm to 88.9 mm) on the front and rear disc blades and to keep a working speed range of 12.8 km/h to 19.3 km/h (8 mph to 12 mph).

For extremely clayey and wet soils, lift the cage roller (A) and let the equipment to operate only with the front and rear disc blades to avoid problems caused by the accumulation of clayey soil on the rollers.



IMPORTANT

- A disc blade depth range greater than 4.5" to 5" and a speed below 12.8 km/h (8 mph) may cause the equipment to move laterally, thus unaligning the tractor-equipment set.

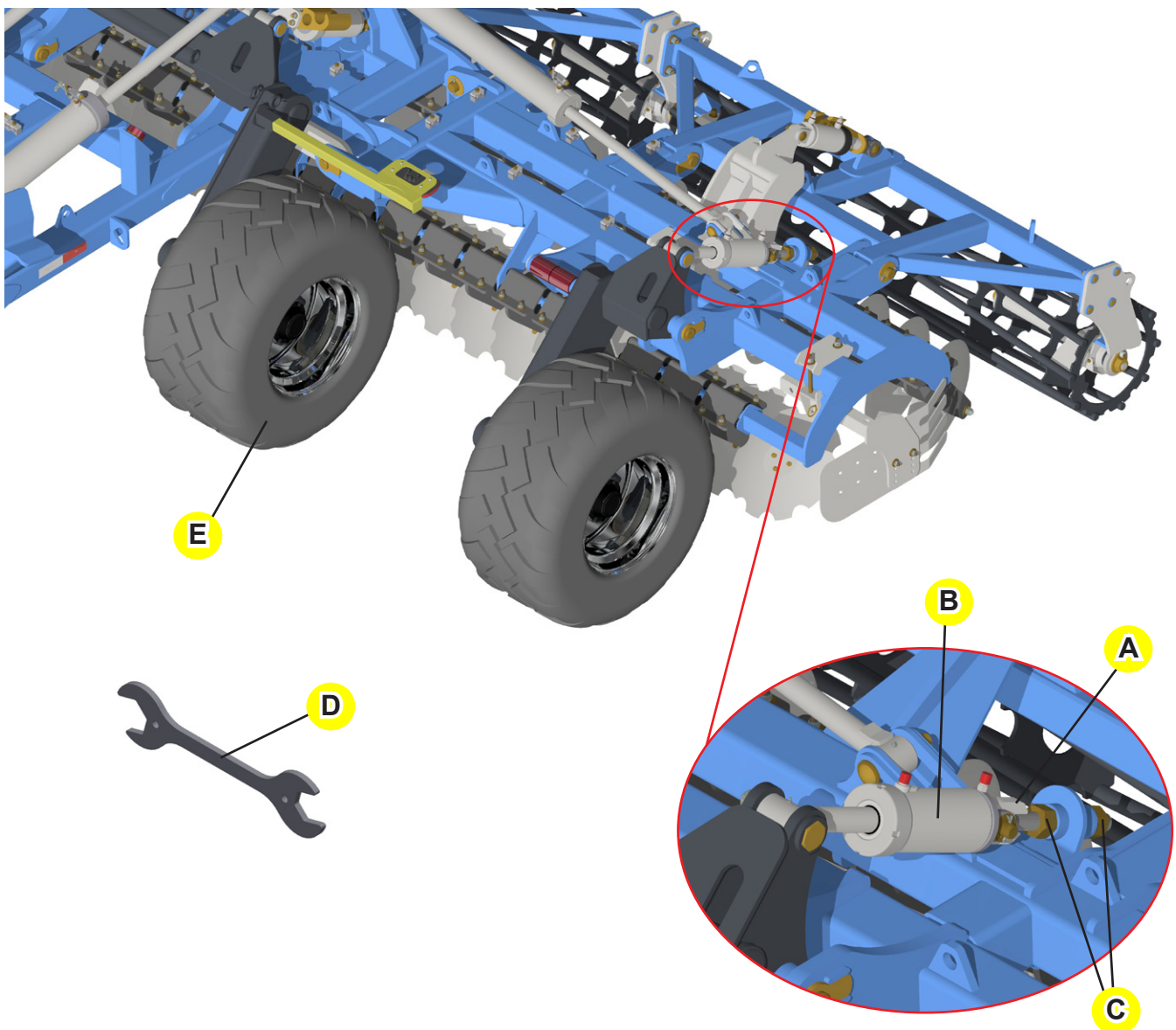
Adjustments and operations

Lateral wheel supports alignment

The lateral wheel support adjustments are done through the spindle (A) that fasten the cylinder (B) to the wings and wheel supports.

To align the lateral wheel supports with the central one, loosen up the spindle (A) nuts (C) with the open end wrench (D). Right after, adjust the wheel support until it is leveled with the central wheel support (E).

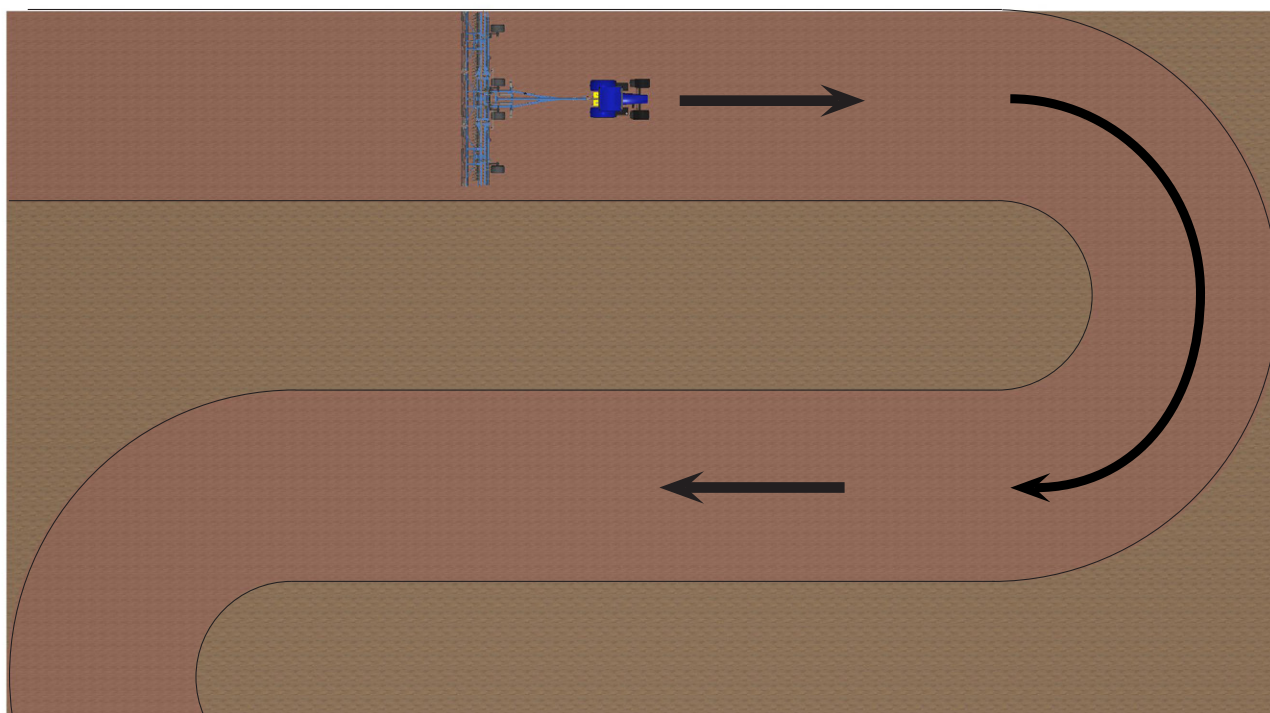
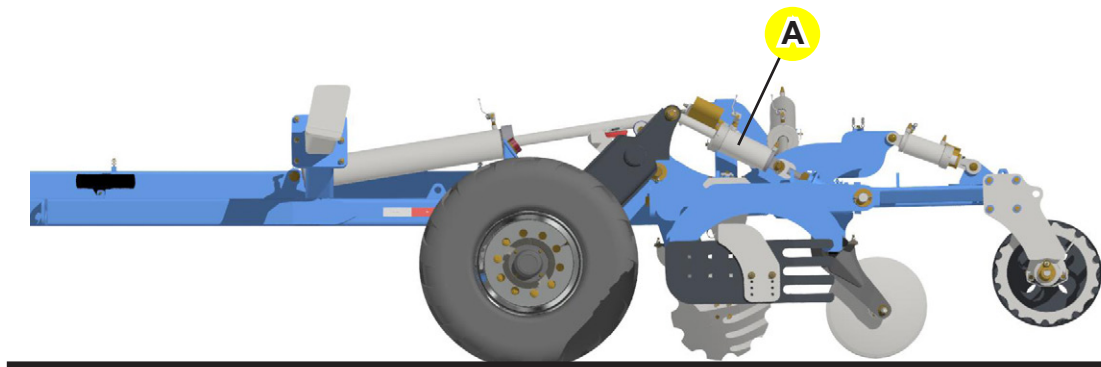
After the adjustment, retighten the spindle nuts (C).



Adjustments and operations

Maneuvering on the edge of the field

When maneuvering, skip a row unit to increase the maneuver radius and thus reduce the efforts over the equipment on the curves. Then, it is recommended to activate the wheel support cylinders (A) to lift the front and rear disc blades and the cage rollers, so they are not touching the soil.



For sharp turns, it is mandatory to activate the wheel support cylinders (A) to lift the front and rear disc blades and the cage roller, so they will not touch the soil.

Avoid to perform maneuvers keeping the cage roller lowered, as this may overload it and cause failures and breaks on the equipment.

ATTENTION

- Lifting the disc blades using the cage rollers while maneuvering on the edge of the field is prohibited.
- Breaks and failures of this part caused by this practice are not covered by the Marchesan warranty.

Adjustments and operations

Troubleshooting guide

PROBLEM	CAUSES	POSSIBLE SOLUTIONS
The equipment is not going on a straight line.	Equipment is not leveled.	Adjust the hitching height related to the tractor drawbar.
		Add depth stops to the cylinders.
Furrow to the left hand side.	The soil is not filling up the furrow.	Increase the equipment speed.
		Adjust the deflector to the rear disc gang direction.
		Make sure that the deflector is not touching the soil.
Unsatisfactory surface finishing job.	Speed is too low.	Gradually increase the equipment speed.
Accumulation of earth over the surface.	Equipment is not leveled.	Check if the depth stops and the hitch are properly adjusted.
Deflector obstruction.	Excess of residue.	When preparing the soil during fall, adjust the residue deflector upwards.
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 repairs.	Replace the repairs.
	Damaged rod.	Replace the rod.
	Oil with impurities.	Replace the oil, repairs 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: 200 kgf/cm² (2844 PSI) .
Quick couplers leaking.	Insufficient tightening.	Retighten carefully.
	Lack of sealing material on the thread.	Use thread sealing tape and retighten carefully.
	Damaged repairs.	Replace the repairs.

Adjustments and operations

Operations - important points



- Retighten nuts and bolts after the first day of work and check the conditions of all pins and cotter pins. Then, retighten every 24 operating hours and every end of planting season.
- Carefully observe the lubrication intervals.
- The tires inflation must always be done with a contention device (inflation cage).
- Choose a gear that allows the tractor to maintain certain power reserve, ensuring against unforeseen efforts.
- The speed is relative to the tractor gear and can only be determined by local conditions. We adopted an average 16 to 22.5 km/h (10 to 14 mph), which is not advisable to overcome to maintain service efficiency and avoid possible damages to the equipment.
- The correct tire inflation is important; follow the instructions on the "maintenance" section.
- Only people who own a full knowledge of the tractor and equipment must operate them.
- To hitch the equipment to the tractor, carry out maneuvers on a lower gear and on a wide area, being ready to brake when close enough.
- The tractor drawbar must remain fixed.
- Special attention should be given to the disc gangs, retightening daily during the first week of use. Then, retighten periodically.
- Always operate on a careful and controlled way.
- Activate the hydraulic cylinder gradually to lift the disc gangs before maneuvering.
- Remove any object that may get stuck on the disc blades.
- Do not check eventual leaks with your bare hands, the high pressure may cause body injury; use cardboard or other suitable object.
- Use an adequate tractor to operate with the equipment.
- Do not maneuver if the equipment is lowered to the soil during operation, as the angle formed by the disc gangs transmit 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 cylinder.
- During work or transportation, do not allow passengers on the tractor or equipment.
- As previously mentioned, this equipment has several settings. However, only the local conditions can determine its best adjustment.

Maintenance

Lubrication

To reduce the wear caused by the friction caused by the moving parts of the equipment, it is necessary to carry out a proper lubrication, as indicated below:

1) Every 24 hours of service, lubricate every grease fitting.

- Be sure about the lubricant quality in relation to its efficiency and purity, avoiding the use of products contaminated by water, dirt 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.
- Introduce enough amount of new grease.
- Use medium consistency grease.

2) The lubrication of the roller bearings should be done in the same aforementioned period (24 hours).

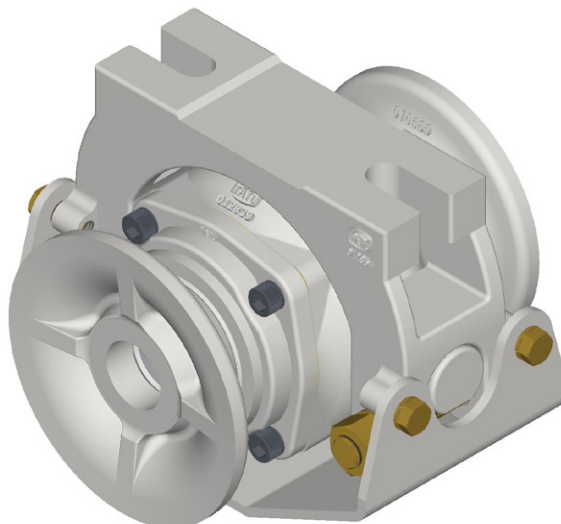
2.1) The roller bearings with oil bath works in constant lubrication, but it is still necessary to give them the following attention:

- In a flat place, check the oil level of each bearing before using the disk harrow for the first time and every day of the first week.
- Then, start to check weekly.
- Change all the oil every 1,000 operating hours.
- Use SAE 90 mineral oil only.

2.2) DMO bearings do not need maintenance.

NOTE Duromark steel-plated bearing.

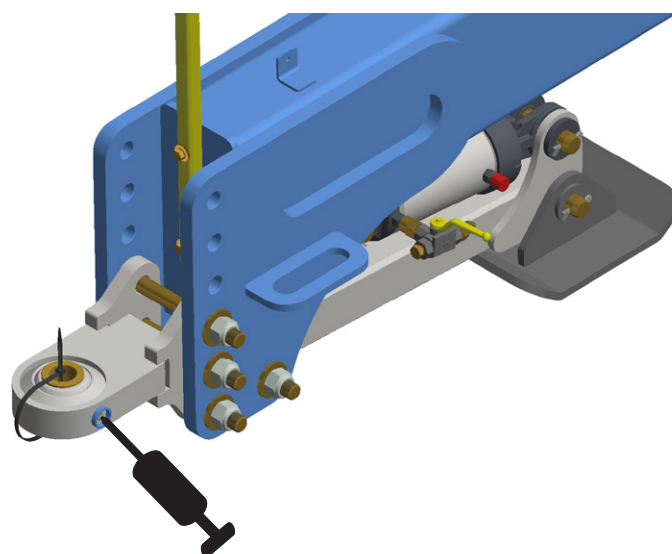
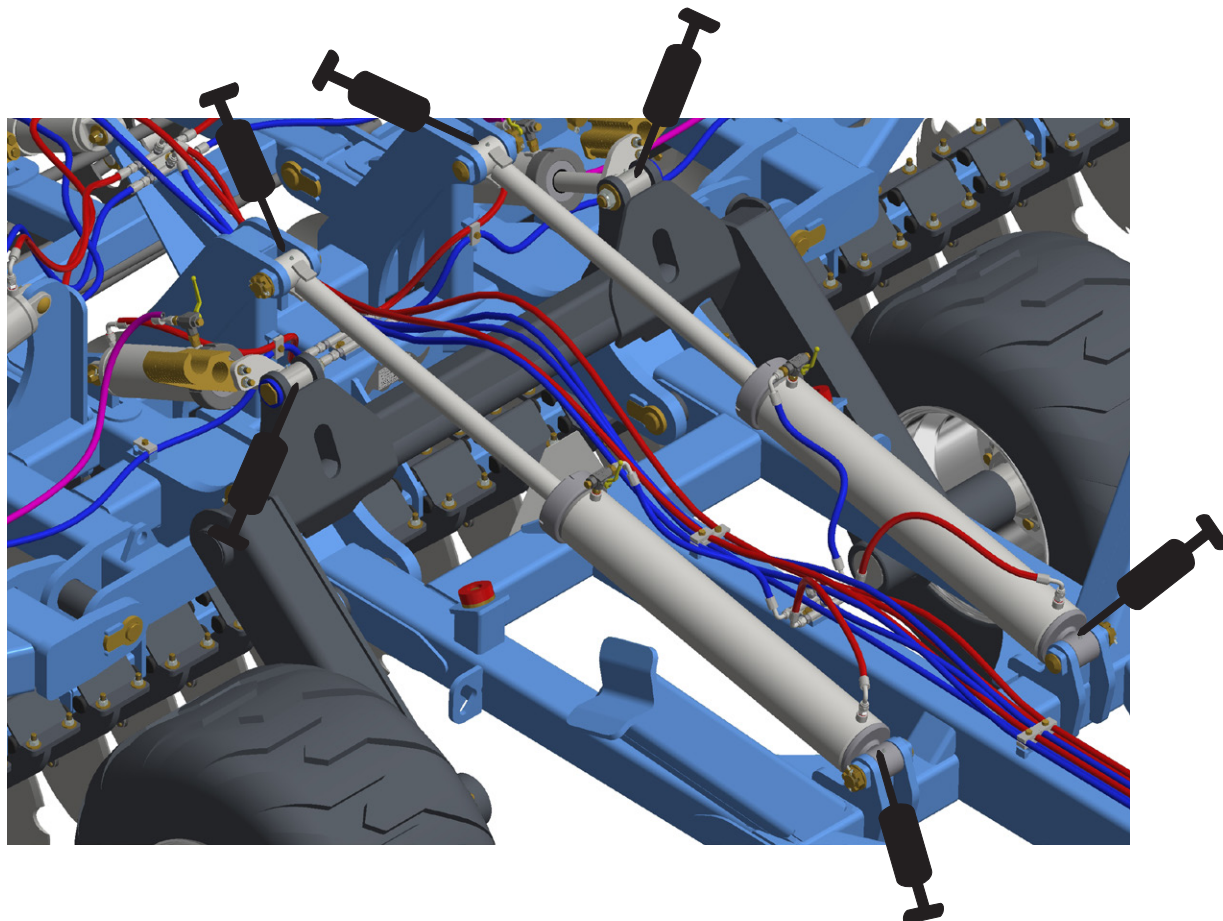
Assembled with a high-performance lubricant, the Duromark steel-plated bearing do not have a plug since there is no need to refill it, avoiding the risk of mixing incompatible lubricants.



Maintenance

Lubrication points

Lubricate every 24 operating hours.



NOTE • Lubricate the points shown above and all grease fittings as well.

Maintenance

Hydraulic cylinder maintenance

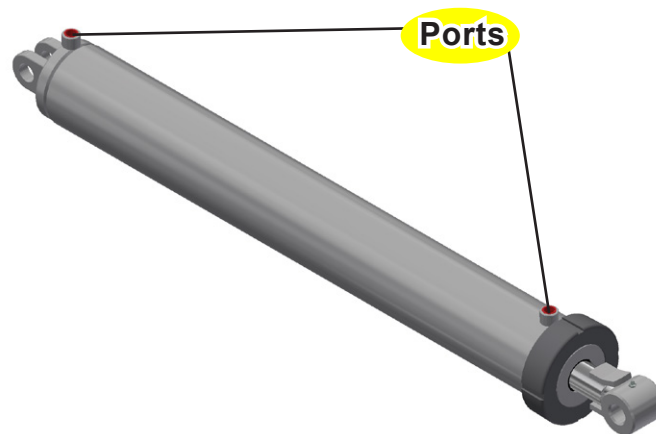
When cylinder repair is required, clean off unit, disconnect hoses and plug ports before removing cylinder.

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.

Maintenance

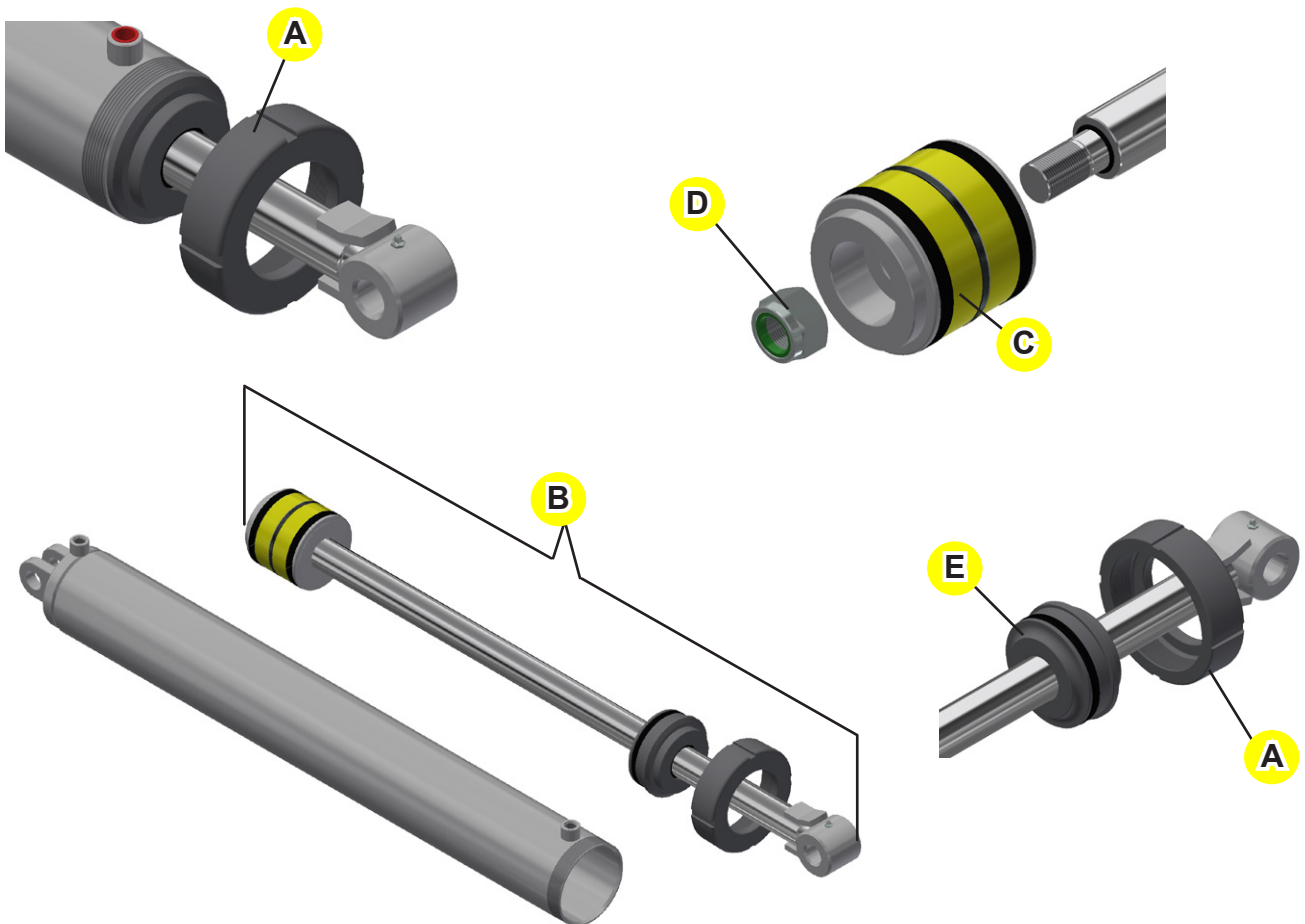
Hydraulic cylinder assembly

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 Lbf.ft (542 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.

Maintenance

Disc hub

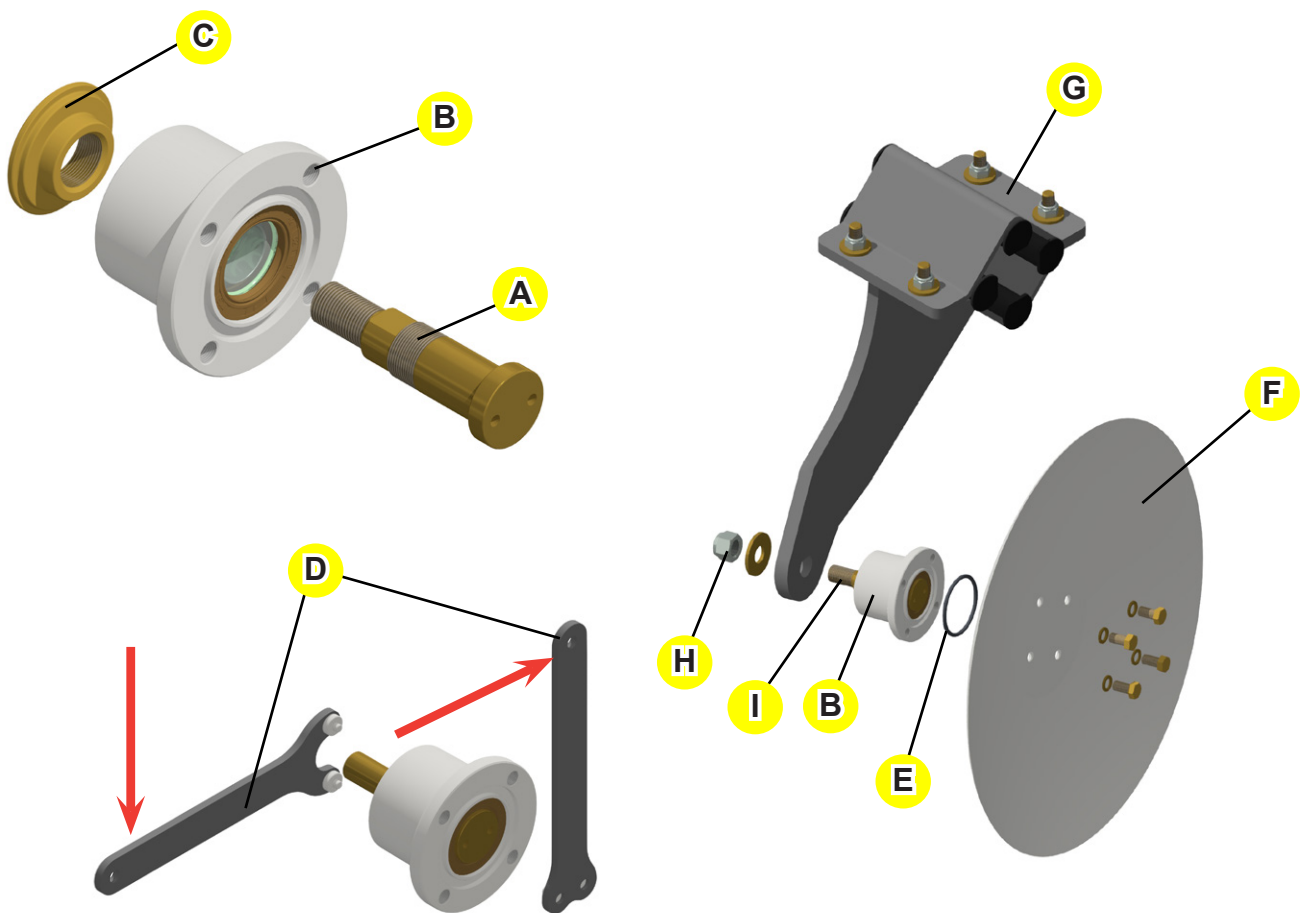
Give maintenance on the disc blades periodically or after finishing a job.

After assembling the inner parts of the hub, it is necessary to tighten the disc axle (A) to the hub (B) using the adjusting nut (C).

To tighten the nut (C) to the axle (A), use both wrenches (D) as shown below. (Tighten it completely then turn 1/4 back).

Lastly, couple the o' ring (E) between the hub (B) and the disc (F), tightening with spring washers and nuts.

Fasten the hub (B) to the shank (G) using a flat washer and nut.



- NOTE**
- The hub greasing process is done on the factory and must be repeated only when necessary.
 - If it is necessary to grease the self lubricating bushings, grease the bushing housing and the axle before assembling.
 - The nut (H) that fasten the bolt (I) must have a maximum torque of 550 Nm (406 Lbf.ft) if lubricated or 740 Nm (546 Lbf.ft) if not lubricated.
 - These disc blades are sharp and may cause serious wounds. To avoid cuts, wear protective gloves when handling them.

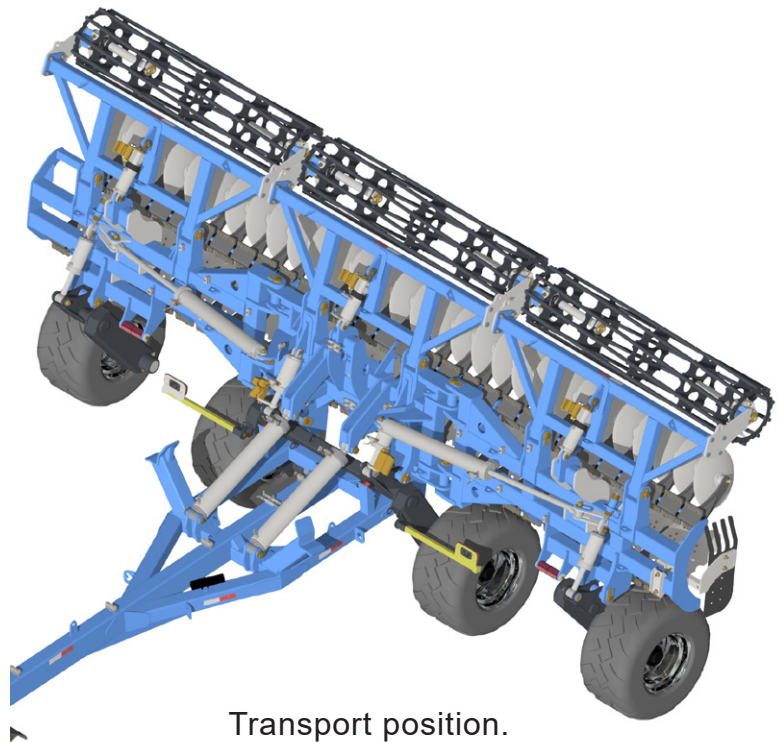
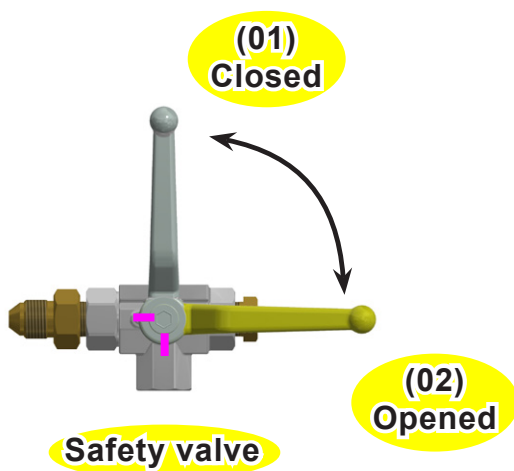
Maintenance

Disc hub bearing adjustment

To adjust the bearing on the hub, set the equipment to transport position.

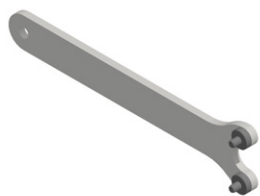
When carrying out the maintenance operation while in transport position, all valves must be closed.

Make sure that all safety valves are closed.

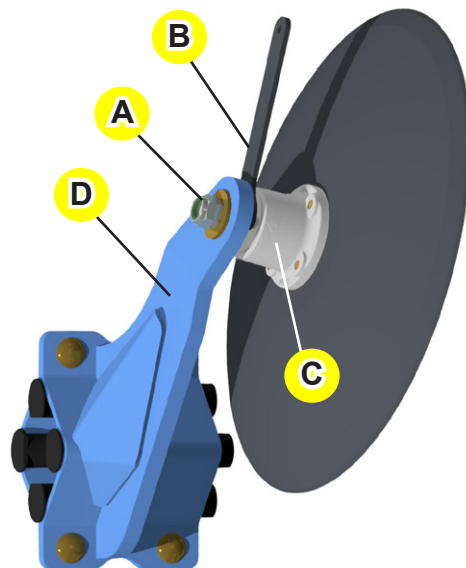


If the disc blades (A) show any clearances, proceed as follows:

- Loosen up the nut (A) until there is enough room to the wrench (B) to enter between the hub (C) and the disc arm (D).
- After adjusting the bearing on the hub, adjust the nut (A), respecting the torque values as stated on the previous page.



Pin wrench (B).



IMPORTANT

- The adequate handling and maintenance procedures are essential. Always follow the installation instructions and keep an appropriate lubrication.
- These disc blades are sharp and may cause serious wounds. To avoid cuts, wear protective gloves when handling them.

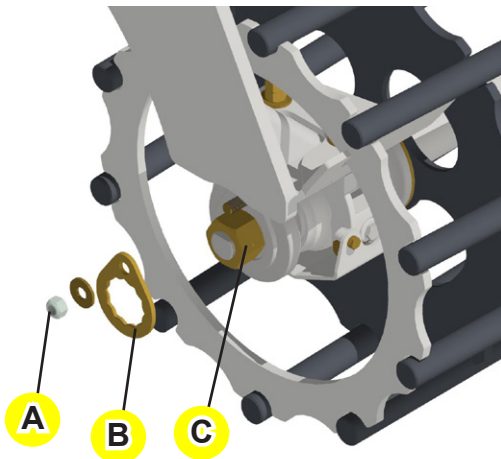
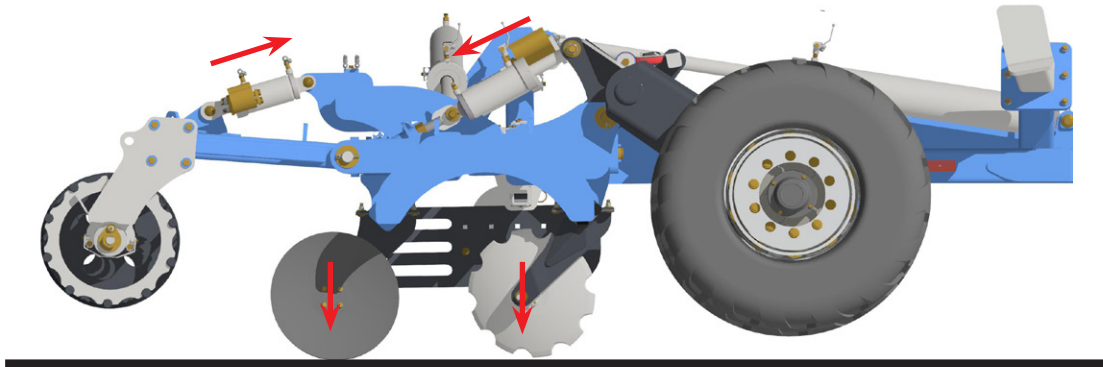
Maintenance

Tightening the cage roller

Retreat the wheel support cylinders and the cage roller cylinders until the disc blades touch the soil.

The equipment must be into operation position.

Close every cylinder valve.



Being the cage roller supported on the ground, loosen up the nut (A) and remove the lock (B) that locks the bearing axle nut (C).

Insert an electric screwdriver with an hexagonal socket of 60 mm (2.3/8") on the nut (C).

Tighten the nut with a torque of 2807 Nm. (2070 Lbf.ft), being the axle lubricated.

If the axle is not lubricated, tighten the nut with a torque of 3500 Nm. (2600 Lbf.ft).

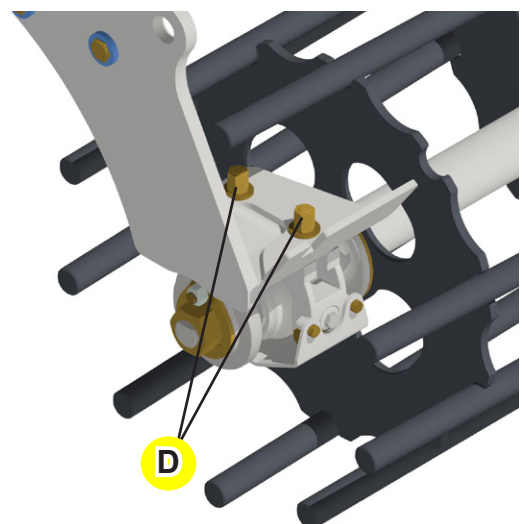
Being the bearing nut (C) already tightened, the next step consists of tightening the bearing nut (D) with cage roller.

Tighten the nut with a torque of 250 Nm. (184 Lbf.ft), being the axle lubricated.

If the axle is not lubricated, tighten the nut with a torque of 330 Nm. (243 Lbf.ft).

Replace the lock (B) on the bearing and tighten with the nut (A).

Carry out the same procedure on the other side of the cage roller.



Maintenance

Wheel support hubs lubrication

The wheel support hubs must be lubricated every 150 hours. When the existence of any clearance is noticed, carry out a maintenance on the wheel hubs.

Disassemble the hubs and remove their internal components. Clean all parts using diesel oil or kerosene.

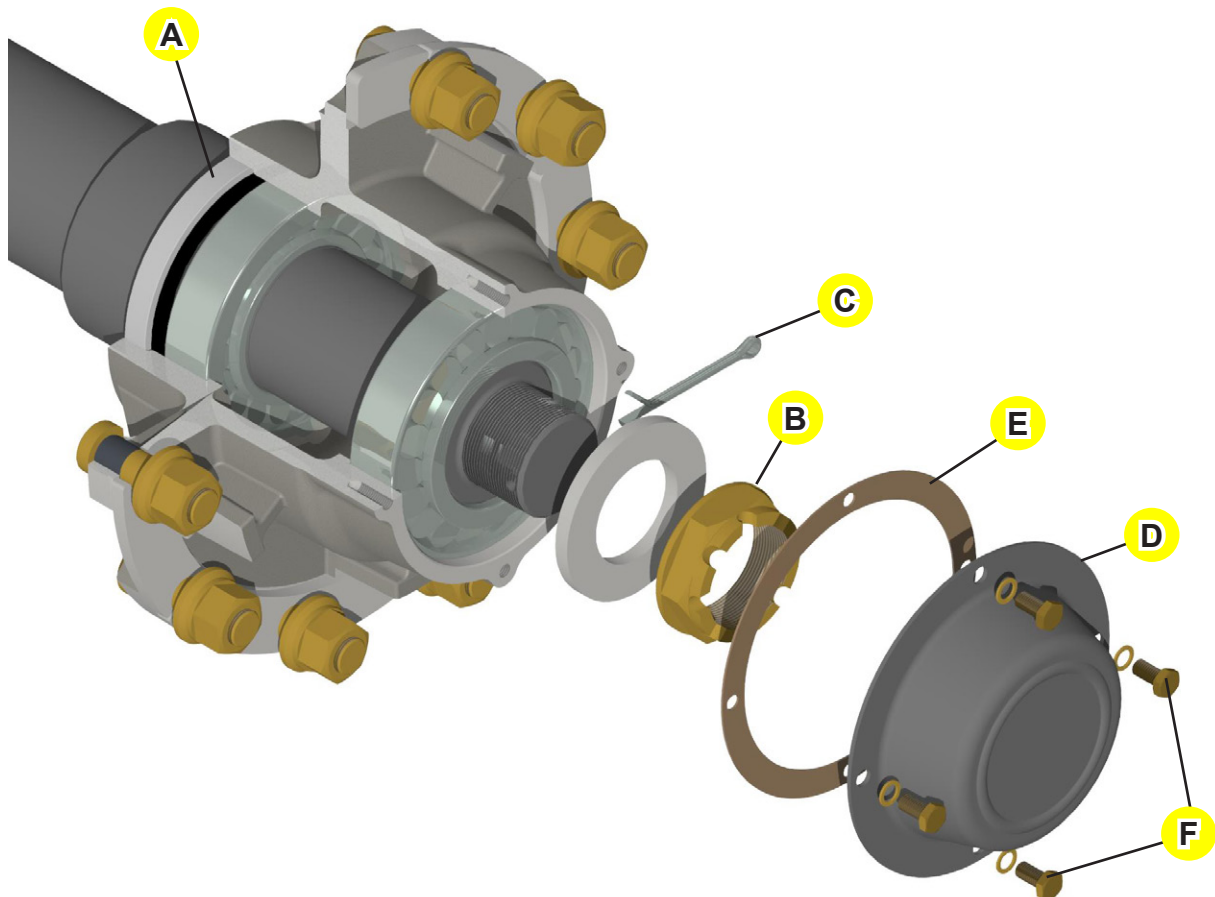
Check the existence of clearances, the condition of the bearings, retainers or bushings. If there is any part that shows excessive wear or damages, replace them.

The bearing must be replaced in a preventive manner, to avoid that it breaks and to avoid greater maintenance costs, since more parts of the set suffer damages when the bearing breaks during the job.

Check the retainer position (A) to let the excess of grease flow out of the hub and be careful to not damage the retainer.

Adjust the castle nut (B) on the hub using a wrench to get some resistance while turning the hub. Do not totally tighten it. Lock it using a cotter pin (C).

Place the hubcap (D) and lock using a ring (E), bolt (F) and spring washer.



Whenever the retainer is damaged, replace it immediately.

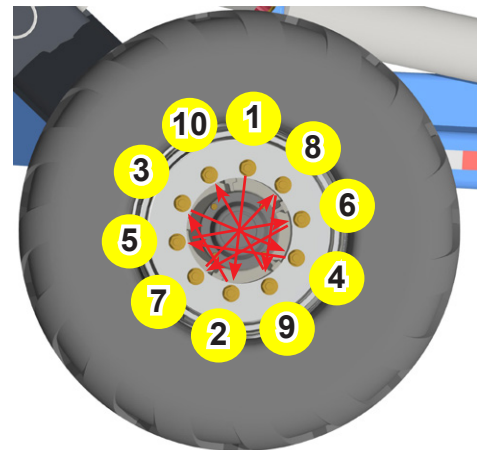
Do not forget to apply the specific grease, that is a lithium soap grease for this equipment, grade NLGI 2 with Extreme Pressure additive, anticorrosive and antioxidant.

Maintenance

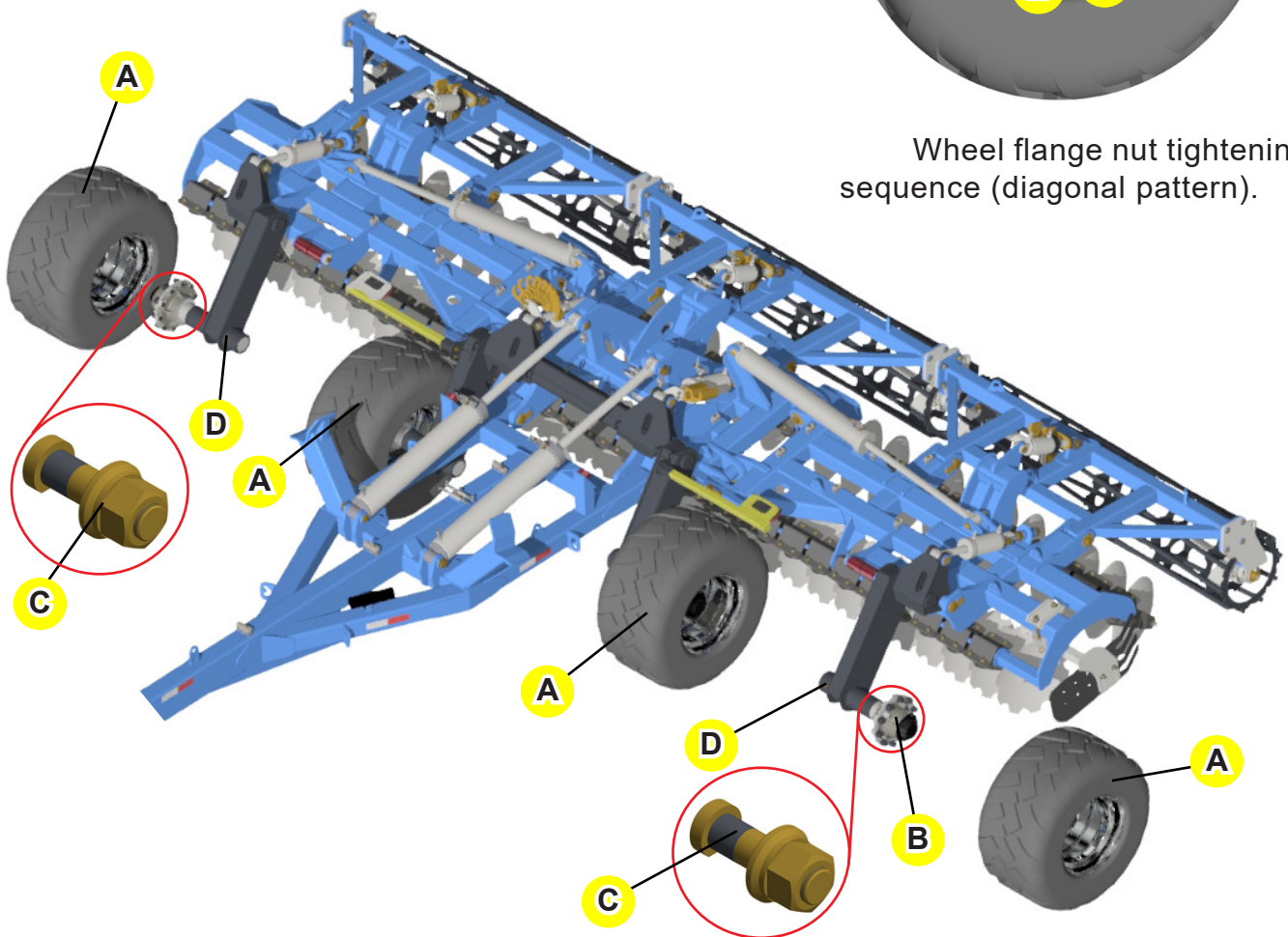
Replacing the tires

If the equipment tires need repairs, proceed as follows:

- Support the equipment in a safe way;
- Totally retreat the hydraulic cylinder to lift the tire (A) from the soil;
- It is not necessary to loosen up the hub (B) from the wheel, just loosen up the bolts (C) and nuts that fasten the tire (A) to the hub (B);
- If it is necessary to carry out any repair on the hub just loosen up the bolt (D), spring washer and nut.
- Carry out the repairs and proceed the assembly according to the instructions on the 'tires assembly' page ('Assembly' section).



Wheel flange nut tightening sequence (diagonal pattern).



• Check if the equipment is well supported to avoid accidents.

Maintenance

Equipment maintenance

If the equipment is connected to the tractor, park it on a leveled surface, use the brakes, shut down the tractor engine, remove the key and wait for every moving part to stop before leaving the tractor cabin.

Wash the whole planter using only water.

Verify all moving parts of the planter for wearing occurrence. If necessary, replace some parts and leave the planter ready for the next planting season.

Repair the damaged paintwork.

Spray the metallic parts with protective oil. Never spray used engine lubricant oil.

Tighten the bolts and nuts of all components that may get loose if any vibration occurs.

Clean and lubricate all grease fittings.

After making all repairs and maintenance cares, store the planter in a covered and dry place.

Keep the planter properly supported and avoid the direct contact of the disc blades and tires with the soil.

Check if the battery used on the planter is in good conditions.

Watch carefully the installation and handling position of the planter cables, since more than half of the maintenance causes are related to that.

Regularly check the electric connections and also check the equipment - planter connector.

Do not make any unauthorized modification on your equipment. Any modification that was done without consultation will take out the manufacturer responsibility for any damage or injury caused.

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.

Maintenance

Important recommendations

Before starting the job, carry out a general inspection on the equipment and retighten all nuts and bolts, also checking the conditions of all pins and cotter pins to avoid future damages. Repeat this operation after the first day of work.

The tractor drawbar must remain fixed and centered.

To transport the equipment, the wheel support cylinder must be totally opened.

To transport the equipment, close the safety valve as mentioned on the 'Hitching to the tractor' page ('Set-up instructions' section) to prevent an accidental functioning of the circuit during the transportation.

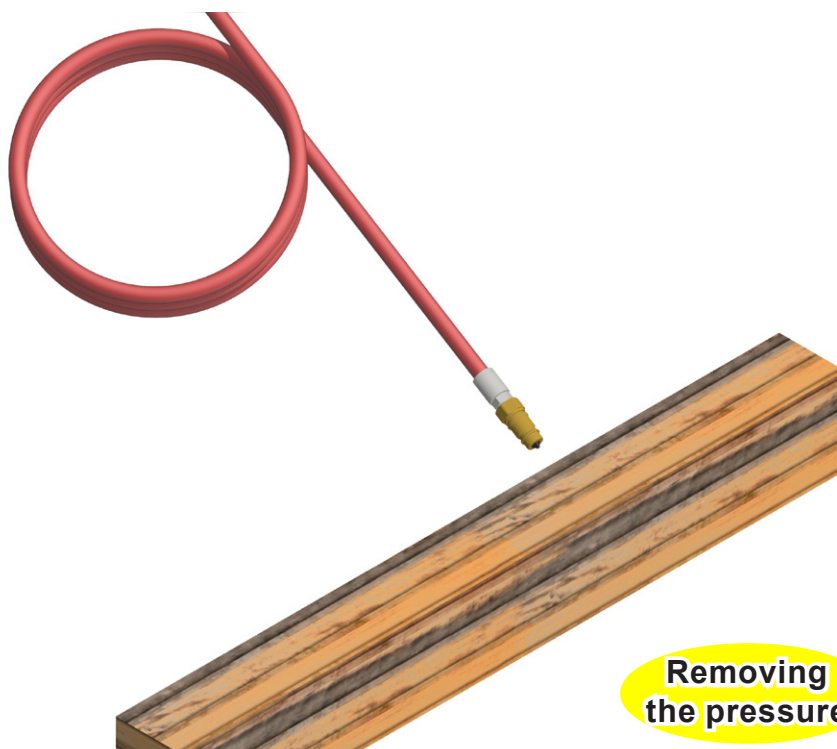
After this action, the cylinder will be inactive so damage to the hoses and cylinders during transportation will be avoided.

Inflate the tires following the pressure instructions on the 'tires inflation' page.

Before connecting the equipment hoses to the tractor, check if the hose is pressurized. If the answer is positive, the operator will not be able to connect the male part to the female one - and forcing this operation may lead to severe damages to the eye and skin as the fluid may escape. To remove the pressure on the tip of the hose, press the male coupling against a non-metallic surface to move the retention valve, until there is no oil leakage anymore.

On some cases, it may be necessary to use a wrench to loosen up the hose coupling to relieve the pressure.

After hitching the hoses, activate the control valve lever and check if there is no leakage on the terminals and on the quick couplers.

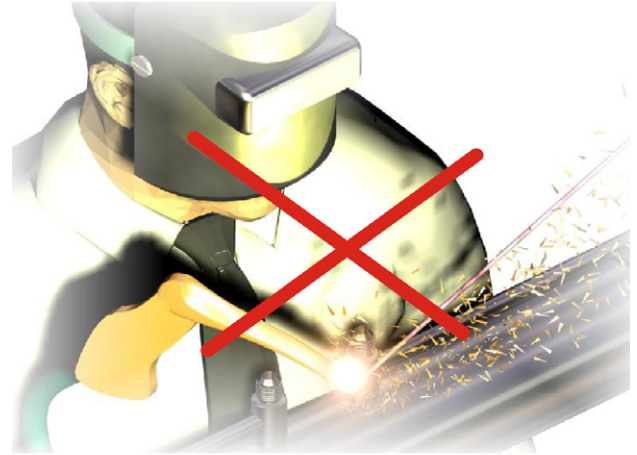


Maintenance

Hydraulic safety

Make sure that all components in the hydraulic system are kept in good condition and are clean. Carry out the maintenance of the hydraulic parts on a clean place, free from dust or contaminants. Otherwise, there may have malfunction or premature wear on the equipment.

The correct operation and maintenance of the hydraulic system will prevent damages, air infiltration on the system, oil and system overheating, damages to the rubber components, etc.



Periodically or when the oil is replaced anormally or even when there is loss of power, inspect the hydraulic system, fasten the connections that are leaking, replace the hoses that are almost reaching its expiration date or if they show any cut, crack or dryness. Regarding the hoses assembly, do it in a way that they always can flex, without twisting or pulling it.

If there is any problem with the hydraulic cylinder, do not carry out any maintenance procedure or weld heating, as both of this may cause roundness on the barrel or other problems, consequently leading to internal leakages, lack of power, gripping, damages to the cylinder rods, etc.

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 fall 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 type 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 coupling are not damaged.

Carry out the operations on a carefully and controlled manner. Avoid to let the hydraulic system working when it is not being used.

Failure to follow these procedures may lead to fatal accidents or even death.

Maintenance

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.

600/50 - 22.5 TL tire (51 PSI).



NOTE • Use TATU original parts only.

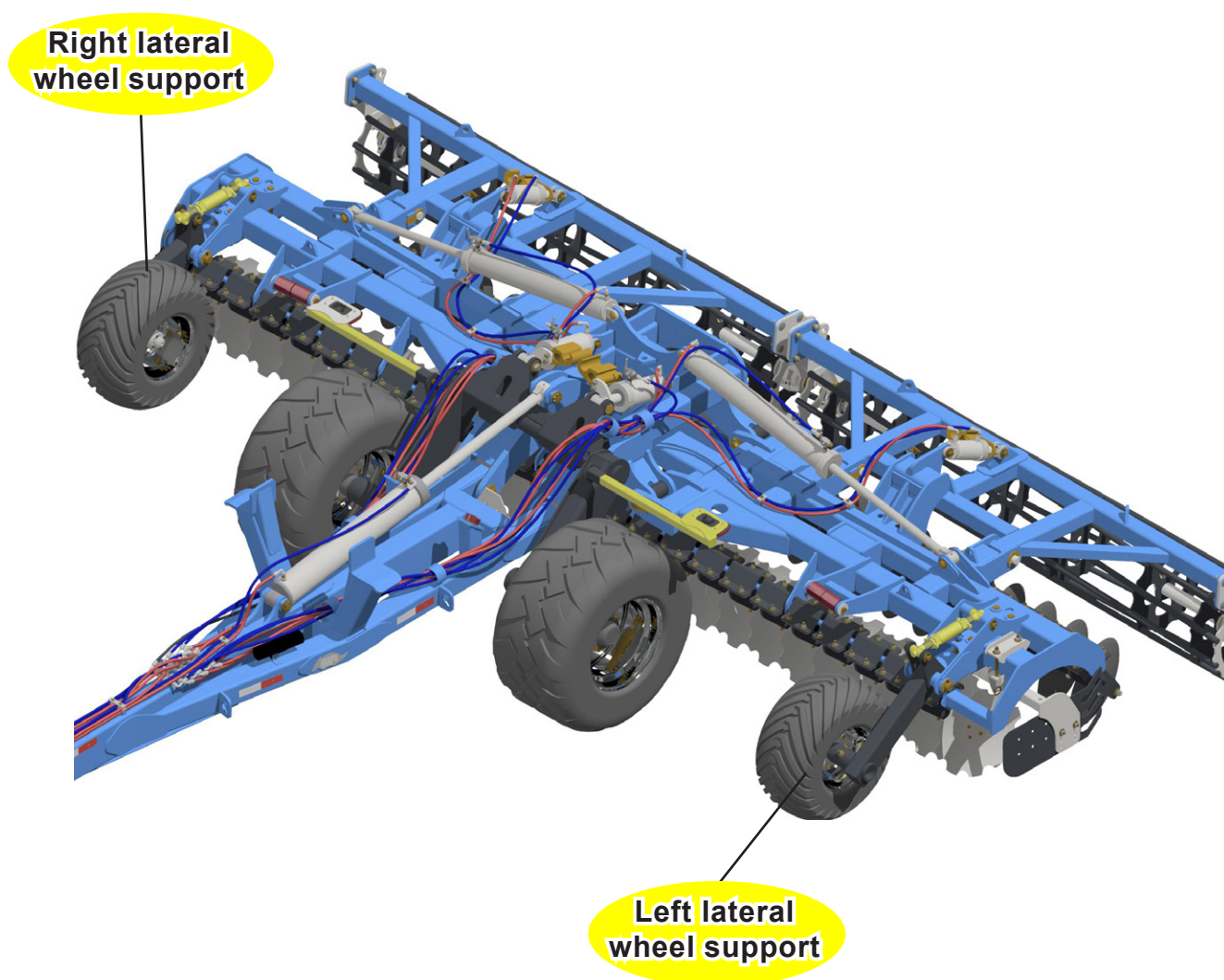
- For the cases when the maximum pressure is not specified on the tires, consult the tire manufacturer and adopt the pressure indicated by them.

Optional

Lateral wheel support

Marchesan optionally supplies the right and left lateral wheel supports to increase the stability and depth control on the extremities of the equipment (model with 50 disc blades).

The wheel supports have an adjustment through the spindle to let the wings leveled.



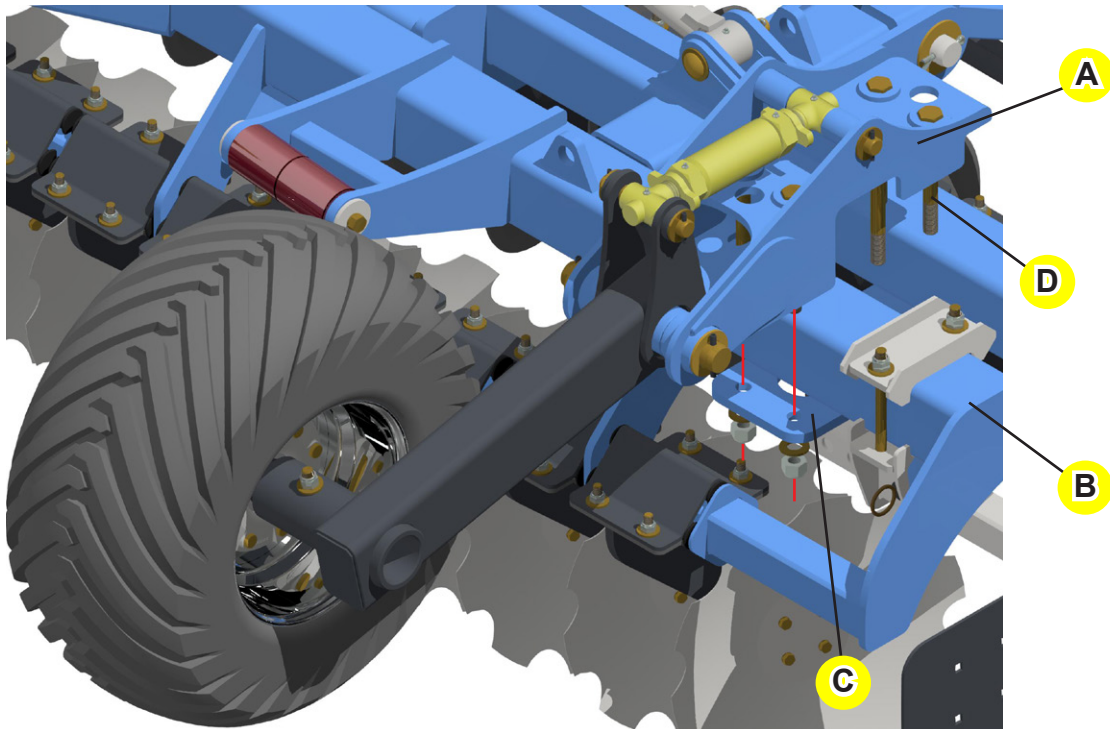
NOTE • 400/60 - 15.5 - T404 tire - 14 ply (52 PSI).

Optional

Lateral wheel support assembly

Support the lateral wheel support (A) on the wing (B) and then pass the upper plate (C) underneath the frame and lock using bolts (D), flat washers and nuts.

Carry out the same assemble operation on the other side of the equipment.

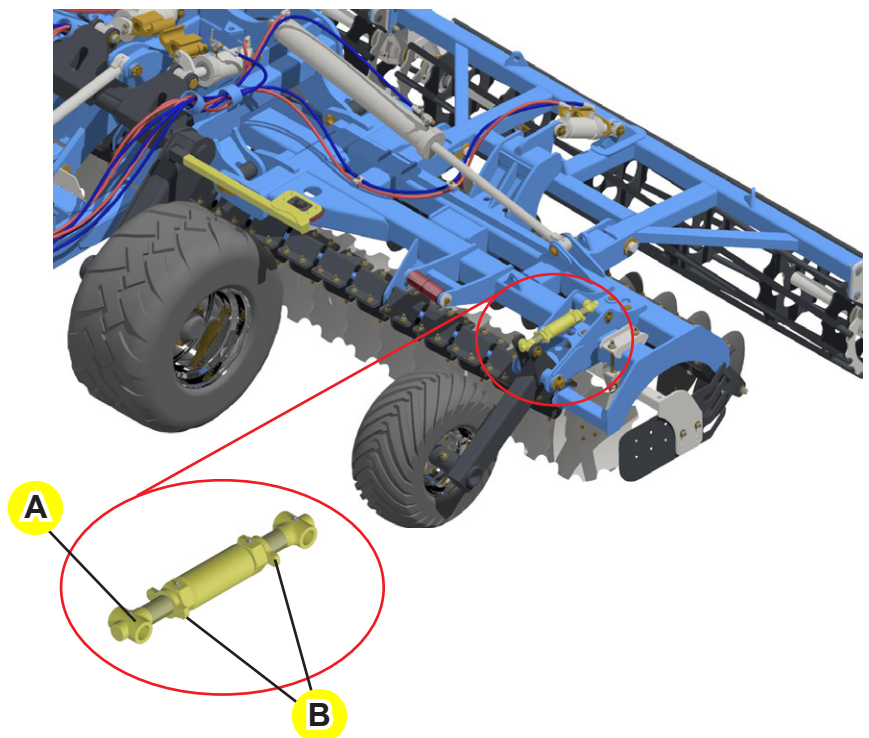


Lateral wheel support adjustment

The adjustment is done using an extensor (A) until it is possible to level the frames.

To adjust the extensor, loosen up the counter nuts (B) and with the aid of a wrench, carry out the necessary adjustments.

Then, retighten the counter nuts to prevent that any unadjustment may occur.



Important data

Hourly income calculation

To calculate the hourly income, use the following calculation:

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

Where:

R = Hourly income;

L = Harrow working width (meters);

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

E = Efficiency: 0.90;

X = Hectare value = 10,000 m².

Using an equipment that has 72 disc blades as example:

R = ?

L = 9.15 m

V = 16 km/h

E = 0.90

X = 10,000 m²

$$R = \frac{9.15 \times 16 \times 0.90}{10,000}$$

R: 13.18 hectares per hour.

NOTE The harrow 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.

Important data

Average income table

Model	Number of disc blades	Cutting width (m)	Hourly income (ha)	Daily income (ha)
Tatu speed disk	50	6.350	9.14	82.30
	60	7.620	10.97	98.75
	72	9.150	13.18	118.63
	84	10.650	15.33	138.02
	96	12.195	17.56	158.04
	108	13.720	19.75	177.81

NOTE • An average speed of 16 km/h was adopted to create 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 100 hectares to be worked with a TATU speed disk model that has 72 disc blades (Hourly income = 13.18 ha).








$$\text{So: } \frac{100}{13.18} = 7.59$$

Approximately will be spent 8 (eight) hours to work in an area of 100 hectares.

Important data

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 TABLE						<i>CIVEMASA</i>					
Bolt Size (Inches) (a)	 Grade 2		 Grade 5		 Grade 8		Bolt Size (Metric) (D)	 4.6		 8.8		 10.9	
	Lbs-ft (b)	N.m (c)	Lbs-ft	N.m	Lbs-ft	N.m		Lbs-ft	N.m	Lbs-ft	N.m	Lbs-ft	N.m
1/4" - 20	5,5	7,5	8,5	11,5	12	16,3	M5 x 0.8	2,5	3,39	5	6,78	8,5	11,526
1/4" - 28	6	8,1	9,5	12,9	14	19,0	M 6 x 1	3	4,068	8	10,85	11,5	15,594
5/16" - 18	10,5	14,2	17,5	23,7	24,5	33,2	M 6 x 0.75	3,5	4,746	8,5	11,53	13	17,628
5/16" - 24	12	16,3	19,5	26,4	27,5	37,3	M 8 x 1.25	7	9,492	19,5	26,44	28	37,968
3/8" - 16	19,5	26,4	31,5	42,7	44	59,7	M 8 x 1	8	10,848	21	28,48	30,5	41,358
3/8" - 24	22	29,8	35	47,5	50	67,8	M 10 x 1.5	14	18,984	38,5	52,21	56	75,936
7/16" - 14	31	42,0	50	67,8	70,5	95,6	M 10 x 1	16	21,696	43	58,31	63	85,428
7/16" - 14	34,5	46,8	56	75,9	79	107,1	M 12 x 1.75	25	33,9	66,5	90,17	98	132,888
1/2" - 13	47	63,7	76	103,1	107,5	145,8	M 12 x 1.25	27	36,612	73	98,99	107,5	145,77
1/2" - 20	53,5	72,5	86	116,6	121,5	164,8	M 14 x 2	40	54,24	107	145,09	156,5	212,214
9/16" - 12	68	92,2	110	149,2	155	210,2	M 14 x 1.5	43	58,308	115,5	156,62	169	229,164
9/16" - 18	76	103,1	122,5	166,1	173	234,6	M 16 x 2	62	84,072	165,5	224,42	243,5	330,186
5/8" - 11	94	127,5	151,5	205,4	214,5	290,9	M 16 x 1.5	66,5	90,174	177	240,01	260	352,56
5/8" - 18	106,5	144,4	171,5	232,6	242,5	328,8	M 18 x 2.5	86	116,616	229	310,52	336	455,616
3/4" - 10	167	226,5	269,5	365,4	380,5	516,0	M 18 x 1.5	96,5	130,854	257	348,49	378	512,568
3/4" - 16	186	252,2	300	406,8	424,5	575,6	M 20 x 2.5	121,5	164,754	323,5	438,67	475	644,1
7/8" - 9	169,5	229,8	434	588,5	612,5	830,6	M 20 x 1.5	134,5	182,382	359	486,80	527	714,612
7/8" - 14	187	253,6	478,5	648,8	676,5	917,3	M 22 x 2.5	165,5	224,418	441	598,00	647,5	878,01
1" - 8	254,5	345,1	650	881,4	918,5	1.245,5	M 22 x 1.5	182	246,792	484	656,30	711,5	964,794
1" - 12	285,5	387,1	729,5	989,2	1031	1.398,0	M 24 x 3	210	284,76	559	758,00	821	1113,276
1.1/8" - 7	360,5	488,8	921,5	1.249,6	1302	1.765,5	M 24 x 1.5	238,5	323,406	636	862,42	933,5	1265,826
1.1/8" - 12	404,5	548,5	1033,5	1.401,4	1460	1.979,8	M 27 x 3	307	416,292	820	1111,92	1204	1632,624
1.1/4" - 7	508,5	689,5	1300	1.762,8	1837,5	2.491,7	M 27 x 1.5	344	466,464	918	1244,81	1348,5	1828,566
1.1/4" - 12	563,5	764,1	1439,5	1.952,0	2034,5	2.758,8	M 30 x 3.5	416,5	564,774	1111,5	1507,19	1632,5	2213,67
1.3/8" - 6	667	904,5	1704,5	2.311,3	2408	3.265,2	M 30 x 1.5	477,5	647,49	1273	1726,19	1870	2535,72
1.3/8" - 12	759,5	1.029,9	1940	2.630,6	2741,5	3.717,5	M 33 x 3.5	567	768,852	1512,5	2050,95	2221,5	3012,354
1.1/2" - 6	885,5	1.200,7	2262,5	3.068,0	3197	4.335,1	M 33 x 1.5	641,5	869,874	1709,5	2318,08	2511	3404,916
1.1/2" - 12	996	1.350,6	2545,5	3.451,7	3597	4.877,5	M 36 x 4	729	988,524	1943	2634,71	2854	3870,024
a) Nominal thread diameter in inches-threads per inch b) Foot pounds c) Newton-meters d) Nominal thread diameter in millimeters x thread pitch							M 36 x 1.5	838,5	1137,006	2236	3032,02	3284	4453,104
							M 39 x 4	943	1278,708	2515	3410,34	3693,5	5008,386
							M 39 x 1.5	1073	1454,988	2860,5	3878,84	4201,5	5697,234

Values are for reference and are based on average steel-to-steel friction conditions.

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 / Illustrations: Káthia Regina Datorre

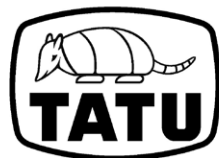
Technical information: Carlos C. Galhardi

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MARCHESAN

MARCHESAN IMPLEMENTOS E MÁQUINAS AGRÍCOLAS "TATU" S.A.

Marchesan Av., 1979 - Zip Code 15994-900 - Matão - SP - Brazil

Telephone 55-16.3382.8282

www.marchesan.com.br

Notes



ATENÇÃO

- RECOMENDAÇÕES GERAIS DE SEGURANÇA -

- 1 - Apenas pessoas que possuem o completo conhecimento do trator e dos implementos devem conduzi-los.
- 2 - Para engatar os implementos, faça as manobras em marcha lenta, em local espaçoso e esteja preparado para aplicar os freios.
- 3 - Para acoplamento na tomada de força, desligue o motor do trator.
- 4 - O motor não deve funcionar em locais sem o ideal arejamento, devido à toxicidade dos gases expelidos.
- 5 - Faça todos os lastres necessários para tracionar equipamentos que os exigem, assim as operações tornam-se mais seguras.
- 6 - Em operações com o trator estacionado, trave os freios e calce as rodas.
- 7 - Todas as peças móveis como correias, polias, engrenagens etc. merecem cuidados especiais.
- 8 - Vista roupas e calçados adequados para a operação das máquinas e implementos agrícolas.
- 9 - Não permita que demais pessoas acompanhem o operador no trator ou no implemento.
- 10 - O uso das roçadeiras exige cuidados especiais. Não permita a aproximação de pessoas ou animais durante o serviço.
- 11 - Não efetue regulagens com o implemento em funcionamento.
- 12 - Não permita que crianças brinquem sobre ou próximo o implemento estando o mesmo em operação, transporte ou armazenado.
- 13 - A velocidade de operação deve ser cuidadosamente controlada.
- 14 - Em terreno inclinado mantenha a estabilidade ideal. Em início de desequilíbrio abaxe a aceleração e não levante o implemento.
- 15 - Os implementos de controle hidráulico devem ser abaixados até o solo e aliviados da pressão antes de desconectar qualquer tubulação.
- 16 - Não verifique vazamentos nos circuitos hidráulicos com as mãos. A alta pressão pode provocar lesões corporais, use papelão.
- 17 - No término do trabalho, os implementos deverão ser desengatados e devidamente apoiados no solo ou sobre cavaletes, não podendo ficar suspensos pelo hidráulico do trator.
- 18 - Não transite em rodovias ou estradas pavimentadas.
- 19 - Os implementos agrícolas tais como grades, arados e outros possuem normalmente órgãos ativos afiados, com bordas cortantes que oferecem riscos de acidentes mesmo quando não estão operando. Portanto, estes devem ser mantidos em local apropriado, devidamente apoiados no solo e impedindo-se o acesso de crianças e pessoas alheias ao manuseio dos mesmos.
- 20 - Para estacionar o trator, desligue o motor, neutralize a ação dos comandos e aplique os freios.



ATENCIÓN

- RECOMENDACIONES GENERALES DE SEGURIDAD -

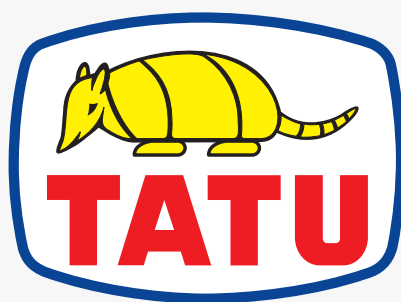
- 1 - Solamente personas con el completo conocimiento del tractor y de los implementos deben conducirlos.
- 2 - Para engancher los implementos, proceda con maniobras en marcha lenta, en local con espacio y este preparado para aplicar los frenos.
- 3 - Para acoples en la toma de potencia apague el motor del tractor.
- 4 - El motor no debe funcionar en locales sin ventilación suficiente debido a la toxicidad de los gases expelidos.
- 5 - Proceda con los lastres necesarios para traccionar equipos que así exigir de esta manera, las operaciones se tornan mas seguras.
- 6 - En operaciones con el tractor estacionado (parqueado) trabar los frenos y las ruedas.
- 7 - Todas las piezas móviles como: bandas, poleas, engranajes, etc... necesitan cuidados especiales.
- 8 - Vestir ropas y calzados adecuados para operación de las máquinas e implementos agrícolas.
- 9 - No permita que otras personas acompañen el operador en el tractor o en el implemento, salvo si posee asiento adecuado.
- 10 - El uso de las rociadoras (cofasmalezas) exige cuidados especiales. No permita la aproximación de personas o animales durante el trabajo.
- 11 - No efectuar regulajes con el equipo en funcionamiento.
- 12 - No permitir que niños jueguen sobre o próximo de los equipos, en operación, durante el transporte o almacenado.
- 13 - La velocidad de operación debe ser cuidadosamente controlada.
- 14 - En terreno inclinado mantenga la estabilidad ideal. En inicio de desequilibrio baje la aceleración y no levante el implemento.
- 15 - Los implementos de control hidráulico deben ser rebajados hasta el suelo y aliviar la presión antes de desconectar cualquier tubería.
- 16 - No verificar filtraciones en los circuitos hidráulicos con las manos, la alta presión puede provocar lesiones corporales, use carton u otro objeto adecuado.
- 17 - Después del término del trabajo, los equipos deberán ser desenganchados y debidamente apoyados en el suelo o sobre cavaletes, aliviando el hidráulico del tractor.
- 18 - No transitar en carreteras o caminos pavimentados.
- 19 - Los implementos agrícolas, como: rastras, arados y otros, tienen normalmente órganos activos afilados, con bordes cortantes que ofrecen riesgos de accidentes, aún cuando detenidos, por lo tanto, estos deben ser mantenidos en local apropiado, debidamente apoyados en el suelo e impidiendo el acceso de niños y personas ajenas al uso de los mismos.
- 20 - Para estacionar (parquear) el tractor, apague el motor, neutralice la acción de los comandos y aplique los frenos.



ATTENTION

- GENERAL RECOMMENDATION ABOUT SAFETY -

- 1 - Only person who owns a full knowledge of tractor and implements must operate them.
- 2 - Take care to prevent injury to the hands or fingers when hitching the implement to the tractor.
- 3 - Always shut the tractor off before connecting the power take off.
- 4 - Never turn on the tractor engine within not aired places, due to toxic gases expelled.
- 5 - Before start the season it is necessary to prepare adequately the tractor and the implement to make the operations safer.
- 6 - Lock the tractor parking brake and block the wheels before dismounting the tractor for service or to make adjustments.
- 7 - Never allow riders to accompany the operator on tractor or implement, except if there is an adequate seat.
- 8 - Be sure that everyone is standing clear before operating the agricultural implement or machinery.
- 9 - Use extreme caution and wear gloves when handling the disc blades or gang assemblies.
- 10 - Wear adequate clothes and shoes to operate agricultural implements and machinery.
- 11 - Do not attempt to make adjustments when the unit is running.
- 12 - Disconnect the hydraulic hoses from breakaway couplers after bleeding off the system.
- 13 - Always block-up raised equipment when servicing. Never rely on the hydraulic system.
- 14 - The speed must be controlled when transporting the implement on rough roads, bridges, steep grades or any other adverse conditions.
- 15 - Lower the implement or machinery completely to the ground before unhitching from the tractor.
- 16 - Before making any inspection on hydraulic hoses for leaks, cycle the hydraulic cylinders several times to purge entrapped air from the system.
- 17 - When the tractor is equipped with swinging drawbar, lock the drawbar in the fixed position.
- 18 - Agricultural implements such as: disc harrows, disc ploughs and others have disc blades that are sharp and could cut hands, feet etc, even when they are not in operation. In order to avoid serious accidents, use chock blocks to prevent the gang assembly from rolling surfaces before assembly to the frame. Wear gloves when handling the blades or gang assemblies.
- 19 - On the transport of the harrow, always install transport lock devices.
- 20 - When parking the tractor, turn the engine off, lock the tractor parking brake and remove the key.



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