GAPCR-HD 8013
GASPCR-HD 9017
GASPCR-EHD 10020

OPERATOR'S MANUAL

TATU MARCHESAN

IDENTIFICATION

Dealer: _____

Owner: _____

Firm / Farm: _____

City: _____ State: _____

No. of the Certificate of Guarantee: _____

Serial / No.: _____

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

Product: _____

Notes: _____

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This operator's manual helps on the assembly process and provides the necessary information for the correct operation and maintenance, thus assuring a higher yield, safety and durability. This manual contains the necessary information for the best performance of your equipment. The operator and the maintenance staff must carefully read the entire manual before working with the equipment. They must 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 Technical support department of the factory, as they can ensure the fully functioning of your TATU equipment.

We reiterate that a careful read and an observation of every item on this manual are needed to assure a greater lifetime of your equipment.

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

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1. 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.

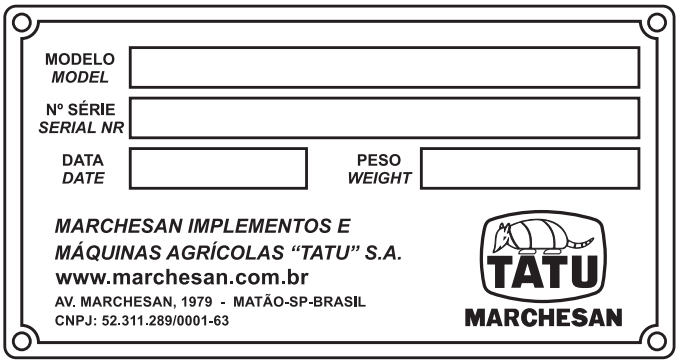
IMPORTANT!

- 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.



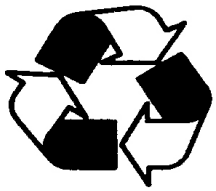
NOTE

- 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.

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.

Recycle damaged and disposable items to preserve a clean environment.

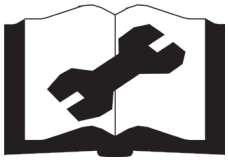
Working safely

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. **The security aspects must be carefully observed to avoid accidents.**

⚠ ATTENTION!

- This symbol is a warning used to prevent accidents.
- The instructions under this symbol refers to the safety of the operator, mechanician 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.



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

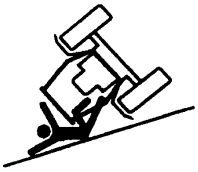
Follow every recommendation, warning and safety practice that can be found inside this manual, as any accident may lead to injuries or death.

REMEMBER, ACCIDENTS MUST BE AVOIDED!

Working safely

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

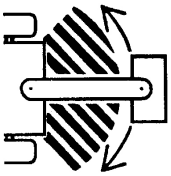
Never attempt to change the adjustments, clean or lubricate the equipment when the same is switched on or in movement.



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.

Always use the safety locks to carry out any maintenance or to transport the equipment.

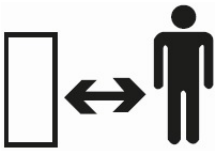
Have extreme caution when operating with the power take-off (PTO), which you should not get closer during operation.

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

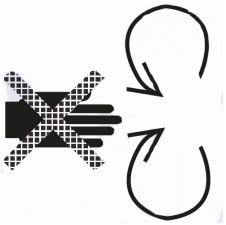
Working safely

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.

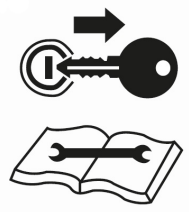
Have extreme caution when driving under electrical power lines. Any contact may result in severe shocks, injuries or death.



Keep a safe distance from the equipment during the job.



Do not open or remove the safety protections while the equipment is on.



Shut down the engine and remove the tractor key from the ignition before carrying out any maintenance or repair on the equipment.

Use the adequate devices to assemble the tires. Only capacitated personnel must do this job.

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

When filling up the tires, position yourself at the side of the tire and never in front of it.

Every professional should be oriented when lifting and carrying heavy loads to avoid any serious accident that a bad execution of this process may cause.

Personal protective equipment (PPE)

The personal protective equipment must be used as stated by the Ministry of Labor and Employment on the working standards.

⚠ ATTENTION!

- Safety must be present on every working step to avoid accidents, such as the impact of objects, falling, noises, cuts and similar. Therefore, the working person is subject to inner and outer damages to the body.

Use earplugs or muffs to avoid loud noises that may lead to complications or hearing loss.

Use gloves to protect your hands and arms from the abrasive elements that may cause cuts or scratches. Whenever assembling or disassembling the equipment, always use safety gloves.

The safety helmet protect the worker's head from any injury that would be caused by falling objects.

The safety glasses protect the eyes from any type of debris that would cause irritation or injuries.

Use the respiratory protection to filter the air and avoid that any dirt particles or material debris may be inhaled by the worker, what would compromise its respiratory system.

The foot protection will prevent damages from the impact of objects, nails or bolts scattered on the floor, crushing hazards, injuries from falling on slippery or wet areas and so on. Always use foot protecion during the job.

Personal clothing must be used. Avoid tight or hanging clothes that may become entangled to the moving parts of the equipment.

NOTE

- Only certified PPE must be used.

General and mandatory safety measures

1. Only trained and qualified personnel are allowed to operate the equipment.
2. While working or during transportation, only the presence of the operator is allowed on the tractor.
3. Do not allow any passengers on the equipment.
4. Do not allow children to play or to get over the equipment while it is operating, during transportation or storage.
5. When setting the equipment to transport position, check if there are no people or animals close or under it.
6. Use personal protective equipment (PPE).
7. Wear appropriate clothes and footwear. Avoid tight or hanging clothes that may become entangled to the moving parts of the equipment.
8. Never operate the equipment without its **protective devices**.
9. 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.
10. Carefully check the transport width on narrow locations.
11. Be careful while hitching the equipment to the tractor.
12. Only pull the equipment using a tractor with appropriate power.
13. Do not drive the equipment under the influence of alcohol or any soothing/ stimulating medicine, as it may result in a serious accident.
14. 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 in hands.
15. In case of emergency, know how to stop the tractor and equipment quickly.

General and mandatory safety measures

16. Always shut down the engine, remove the key and use the handbrake before leaving the tractor seat.

17. Never attempt to change the adjustments, clean or lubricate the equipment while it is moving.

18. Whenever unhitching the equipment, either on the field or shed, do it on a flat and firm surface. Make sure that the equipment is properly supported.

19. 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.

20. Fasten the safety chain between the tractor and equipment.

21. Do not allow any person or animal to get under the equipment at any time.

22. 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.

23. Please check the general safety instructions on the back cover of this manual.

Transportation over truck or trailer

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

1. Use adequate ramps to load or unload the equipment. Do not make the loading on ditch banks, it can cause a serious accident.
2. When lifting with a hoist, use the appropriate points to lift.
3. Fasten the moving parts that may get loose and cause accidents.
4. Underpin the equipment wheels appropriately.
5. Use chock blocks and safety chains to secure the equipment to the truck or trailer during the transport.
6. Stay away from the straps, cables or chains that are working under load.
7. Make sure the SMV (Slow moving vehicle) sign, and all the lights and reflectors that are required by the local highway and transport autorithies are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.
8. After 8 to 10 km transporting, please inspect the load condition. Repeat this procedure every 80 to 100 km. Give more attention when transporting the equipment on rough roads, slopes and other adverse conditions.
9. Always be careful with the load height, especially when passing under electrical power lines, bridges and others.
10. 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 to give adequate warning to the other drivers.

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 agicultural machines and equipments, we specifically cited the **NR 06**, **NR 12, NR 17** 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 17**:

• The purpose of this Regulatory Standard is to establish parameters for the adaption of the working conditions to the psycho-physiological characteristics of the workers in order to provide maximum comfort, safety and efficient performance.

• The working conditions include the aspects of lifting, carrying and unloading materials, furnitures, equipments and environmental conditions of the job and the organization of work itself.

Regulatory Standard - **NR 31**:

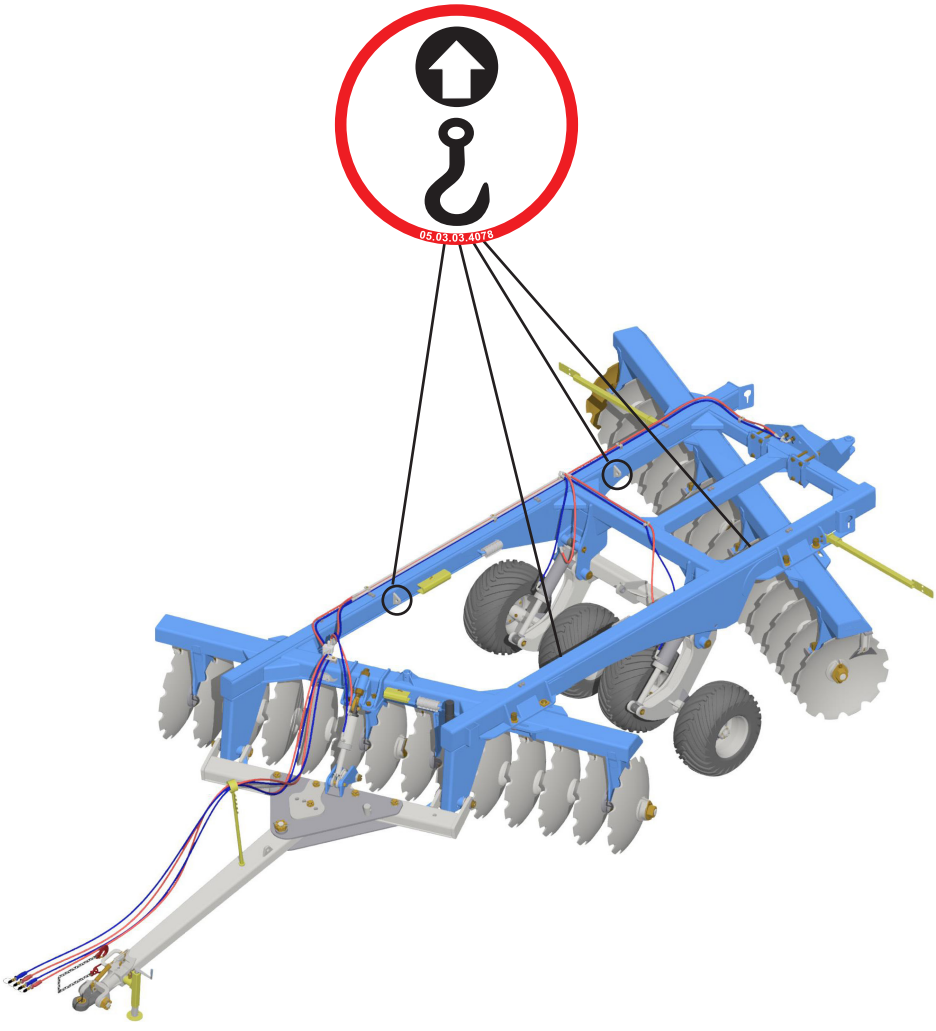
• This Regulatory Standard has the purpose to establish the precept to be applied on the organization and on the working environment, in order to make compatible the planning and development of agriculture, livestock, forestry, forest exploration and aquaculture with safety on the working environment.

Lifting points

ATTENTION! RISK OF ACCIDENT

- Only **CAPABLE** and **AUTHORIZED** personnel should carry out the equipment movimentation.
- Note every condition of each PPE, such as the foot protection, safety glasses, safety helmet, protective gloves and other PPE as required.
- Use chains, of at least 3 meters long, to lift the equipment safely.
- Use the adequate points for lifting and be sure that the equipment is safe. Avoid accidents.
- Always isolate the area where the lifting and components movimentation will be carried out. Always keep a safe distance from the equipment.

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.



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 provides decals, upon request and indication of the respective serial number.

Safety decals

Decal set

Qty.	Model	Serial number
2	GAPCR HD 8013 decal	**05.03.03.4064**
2	GASPCR HD 9017 decal	**05.03.03.4976**
2	GASPCR EHD 10020 decal	**05.03.03.4977**
2	TATU logotype decal	**05.03.03.3428**
1	Read the manual decal	**05.03.03.1428**
1	Warning decal	**05.03.03.1738**
1	Danger decal	**05.03.03.1739**
1	Lubricate and retighten daily decal	**05.03.03.1827**
1	Danger decal	**05.03.03.1896**
1	Danger decal	**05.03.03.3038**
4	Lifting points decal	**05.03.03.4078**
1	Grip coupler colors decal	**05.03.03.4499**

Intended use of the equipment

The **GAPCR-HD 8013** disk harrow is specially designed for hard-working, either in newly deforested areas or sugar cane ratoons.It is great for seedbed preparation in large areas after the crop and stubble incorporation.

The **GASPCR-HD 9017** disk harrow is specially designed to prepare the soil deeply and to harrow newly deforested areas and extreme conditions in civil construction, like roads and dams.

The **GASPCR-EHD 10020** disk harrow is specially designed to build roads and dams in severe conditions, harrow newly deforested areas and savannas; as well as to eliminate the ratoons with a great straw concentration.

All models feature an efficient wheel system with hydraulic activation to control the depth and transport the equipment safely over long distances. This wheel also streamlines the maneuvers during the service.

This equipment meets the ABNT NBR and ISO applicable standards.

Prohibited use of the equipment

1. To avoid damages, serious accidents or death, do NOT allow passengers on any part of the equipment.

2. The equipment must not be used by an inexperienced operator or one that do not know every conduction, operation and command controlling techniques.

GAPCR-HD 8013 (mechanical)

Type: .....Heavy duty wheel offset disk harrow

Model:..... **GAPCR-HD 8013**

Spacing between disc blades:.....340 mm

Disc blades dimension:..... Ø 32" x 9 mm, Ø 34" x 9 mm or Ø 36" x 9 mm

Disc blade type:..... Concave notched

Bearings - length:.....330 mm

- type: ..... Tapered roller bearings

Spacer spools - length: .....330 mm

- type:.....Iron cast

Axle diameter:.....Ø 63.50 mm (2.1/2")

Hitching type:.....Drawbar

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

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

Transport speed:.....30 km/h

Model	Number of disc blades	Cutting width (mm)	Weight (kg)	Tractor required power (cv)
GAPCR-HD 8013	29	4815	8558	310 - 330
	31	5131	8554	330 - 340
	33	5447	8825	340 - 360
	35	5766	9045	380 - 400
	37	6085	9816	420 - 440
GAPCR-HD 8013 Folding wings	45	7499	12535	540 - 560
	49	8070	12784	600 - 640

NOTE

- The weights above were obtained using Ø 36'' x 9 mm disc blades with rear hitch.
- The required tractor power can suffer variations according to the soil conditions.

GAPCR-HD 8013 (hydraulic)

Type: .....Heavy duty wheel offset disk harrow
Model:..... **GAPCR-HD 8013**
Spacing between disc blades:.....340 mm
Disc blades dimension:..... Ø 32" x 9 mm, Ø 34" x 9 mm or Ø 36" x 9 mm
Disc blade type:..... Concave notched
Bearings - length:.....330 mm
- type: ..... Tapered roller bearings
Spacer spools - length: .....330 mm
- type:.....Iron cast
Axle diameter:.....Ø 63.50 mm (2.1/2")
Hitching type:.....Drawbar
Tires: .....Check the 'tires inflation' page
Working speed:.....5 to 7 km/h
Transport speed:.....30 km/h

Model	Number of disc blades	Cutting width (mm)	Weight (kg)	Tractor required power (cv)
GAPCR-HD 8013	21	3716	5899	210 - 230
	23	4032	6130	230 - 250
	24	4032	6122*	250 - 280
	25	4350	6351	250 - 280
	27	4670	6546	280 - 310
	29	4815	8448	310 - 330
	31	5131	8671	330 - 340
	33	5447	8822	340 - 360
	35	5766	9034	380 - 400
	37	6085	9705	420 - 440
	39	6546	12741	460 - 480
	41	6861	13078	510 - 530
	45	7499	13720	540 - 560
GAPCR-HD 8013 Folding wings	41	6861	11926**	510 - 530
	45	7499	12443	540 - 560
	49	8070	14056	600 - 640

NOTE

- The weights above were obtained using Ø 36" x 9 mm disc blades with rear hitch.
- *The weight above was obtained using a Ø 34" x 9 mm disc blade.
- **The weight above was obtained using a Ø 36" x 9 mm disc blade without rear hitch.
- The required tractor power can suffer variations according to the soil conditions.

GASPCR-HD 9017 (mechanical)

Type: .....Heavy duty wheel offset disk harrow

Model:.....**GASPCR-HD 9017**

Spacing between disc blades:.....440 mm

Disc blades dimension:..... Ø 36" x 12 mm, Ø 38" x 12 mm or Ø 40" x 12 mm

Disc blade type:..... Concave notched

Bearings - length:.....430 mm

- type: ..... Tapered roller bearings

Spacer spools - length: .....430 mm

- type:.....Iron cast

Axle diameter:.....Ø 63.50 mm (2.1/2")

Hitching type:.....Drawbar

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

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

Transport speed:.....30 km/h

Model	Number of disc blades	Cutting width (mm)	Weight (kg)	Tractor required power (cv)
GASPCR-HD 9017	18	3795	8180	310 - 330
	20	4207	8525	330 - 350
	22	4621	8875	350 - 370
GASPCR-HD 9017 Folding wings	32	6626	13745*	480 - 500
	34	7037	14071*	500 - 520
	36	7431	14313	520 - 560

NOTE

- The weights above were obtained using Ø 40" x 12 mm disc blades.
- *The weight above was obtained using a Ø 40" x 12 mm disc blade with hitch.
- The required tractor power can suffer variations according to the soil conditions.

GASPCR-HD 9017 (hydraulic)

Type: .....Heavy duty wheel offset disk harrow

Model:.....**GASPCR-HD 9017**

Spacing between disc blades:.....440 mm

Disc blades dimension:..... Ø 36" x 12 mm, Ø 38" x 12 mm or Ø 40" x 12 mm

Disc blade type:..... Concave notched

Bearings - length:.....430 mm

- type: ..... Tapered roller bearings

Spacer spools - length: .....430 mm

- type:.....Iron cast

Axle diameter:.....Ø 63.50 mm (2.1/2")

Hitching type:.....Drawbar

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

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

Transport speed:.....30 km/h

Model	Number of disc blades	Cutting width (mm)	Weight (kg)	Tractor required power (cv)
GASPCR-HD 9017	12	2526	5219	250 - 270
	14	2942	5772	270 - 290
	16	3344	6292	290 - 310
	18	3795	8099	310 - 330
	20	4207	8450	330 - 350
	22	4621	8800	350 - 370
	24	4970	9271	370 - 390
	26	5384	9615	390 - 410
	28	5798	9962	410 - 430
	30	6203	10703	430 - 450
	32	6626	11773	480 - 500
	34	7037	12116	500 - 520
	36	7431	12458	520 - 560
GASPCR-HD 9017 Folding wings	32	6626	13631	480 - 500
	34	7037	14022	500 - 520
	36	7431	14124	520 - 560

NOTE

- The weights above were obtained using Ø 40" x 12 mm disc blades.
- The required tractor power can suffer variations according to the soil conditions.

GASPCR-EHD 10020 (mechanical)

Type: ..... Extra heavy duty wheel offset disk harrow

Model: ..... **GASPCR-EHD 10020**

Spacing between disc blades: ..... 507 mm

Disc blades dimension: ..... Ø 36" x 12 mm, Ø 38" x 12 mm

..... Ø 40" x 12 mm or Ø 42" x 12 mm

Disc blade type: ..... Concave notched

Bearings - length: ..... 504 mm

- type: ..... Tapered roller bearings

Spacer spools - length: ..... 495 mm

- type: ..... Iron cast

Axle diameter: ..... Ø 69.85 mm (2.3/4")

Hitching type: ..... Drawbar

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

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

Transport speed: ..... 30 km/h

Model	Number of disc blades	Cutting width (mm)	Weight (kg)	Tractor required power (cv)
GASPCR-EHD 10020	16	3815	8804	360 - 390
	18	4286	9180	390 - 420
	20	4759	9555	420 - 460
	22	5230	11389	460 - 500
	24	5708	11910	500 - 540

NOTE

- The weights above were obtained using Ø 38" x 12 mm disc blades.
- The required tractor power can suffer variations according to the soil conditions.

GASPCR-EHD 10020 (hydraulic)

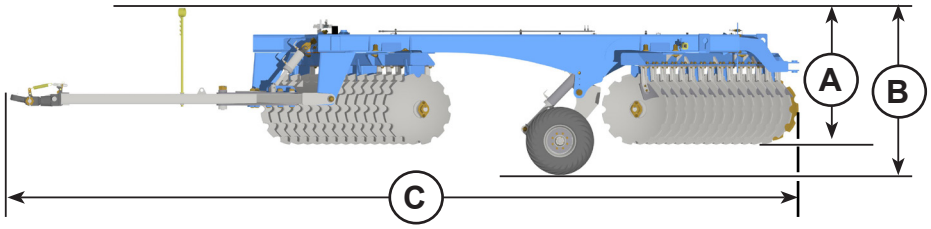
Type: ..... Extra heavy duty wheel offset disk harrow
Model: ..... **GASPCR-EHD 10020**
Spacing between disc blades: ..... 507 mm
Disc blades dimension: ..... Ø 36" x 12 mm, Ø 38" x 12 mm
..... Ø 40" x 12 mm, Ø 42" x 12 mm or Ø 44" x 12 mm
Disc blade type: ..... Concave notched
Bearings - length: ..... 504 mm
- type: ..... Steel-plated bearing (DMO)
Spacer spools - length: ..... 495 mm
- type: ..... Iron cast
Axle diameter: ..... Ø 69.85 mm (2.3/4")
Hitching type: ..... Drawbar
Tires: ..... Check the 'tires inflation' page
Working speed: ..... 5 to 7 km/h
Transport speed: ..... 30 km/h

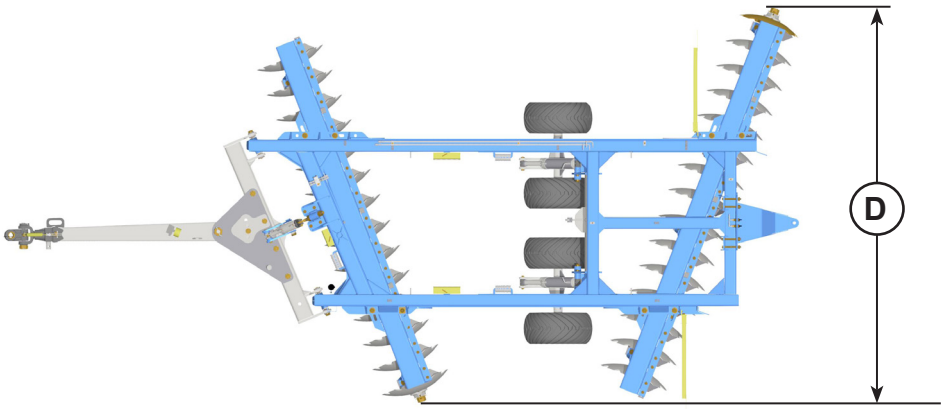
Model	Number of disc blades	Cutting width (mm)	Weight (kg)	Tractor required power (cv)
GASPCR-EHD 10020	12	2881	6484	300 - 330
	14	3351	7321	330 - 360
	16	3815	8688	360 - 390
	18	4286	9064	390 - 420
	20	4759	9438	420 - 460
	22	5230	11273	460 - 500
	24	5708	11775	500 - 540
	26	6328	13341	540 - 580
	28	6775	13731	580 - 620
	30	7252	14276	620 - 660

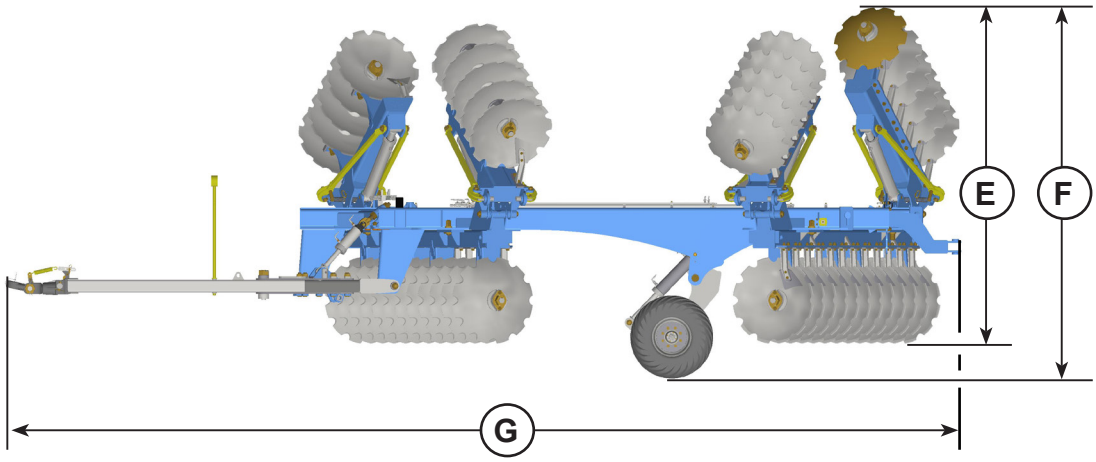
NOTE

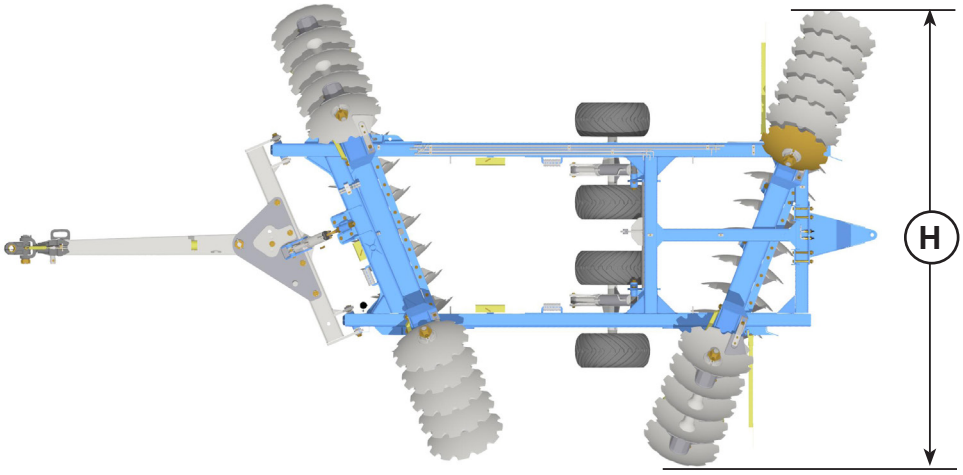
- The weights above were obtained using Ø 38" x 12 mm disc blades.
- The required tractor power can suffer variations according to the soil conditions.

Dimensions for transportation and storage









Dimensions for transportation and storage

Model	Number of disc blades	A	B	C	D	E	F	G	H
GAPCR-HD 8013	21	1770	2140	8560	3920	-	-	-	-
	23	1770	2140	8625	4230	-	-	-	-
	24	1770	2140	8680	4535	-	-	-	-
	25	1770	2140	8690	4550	-	-	-	-
	27	1770	2140	8750	4860	-	-	-	-
	29	1770	2140	10080	5015	-	-	-	-
	31	1770	2140	10140	5335	-	-	-	-
	33	1770	2140	10200	5655	-	-	-	-
	35	1770	2140	10265	5970	-	-	-	-
	37	1770	2140	10325	6290	-	-	-	-
	39	1770	2275	10805	6755	-	-	-	-
	41	1770	2275	10860	7070	-	-	-	-
	45	1770	2275	10985	7705	-	-	-	-
GAPCR-HD 8013 Folding wings	41	1770	2140	10285	7025	3545	3905	9935	4635
	45	1770	2140	10410	7650	3545	3910	9935	5270
	49	1770	2140	10465	8290	3660	4140	9935	5270

NOTE

- The dimensions are subjected to change due to the disc blades features, used tires and frame opening adjustments.
- Measures in millimeters.

Dimensions for transportation and storage

Model	Number of disc blades	A	B	C	D	E	F	G	H
GASPCR-HD 9017	12	1825	2205	8355	2725	-	-	-	-
	14	1825	2205	8430	3125	-	-	-	-
	16	1825	2205	8510	3540	-	-	-	-
	18	1825	2205	9870	4000	-	-	-	-
	20	1825	2205	9948	4400	-	-	-	-
	22	1825	2205	10026	4790	-	-	-	-
	24	1825	2205	10115	5135	-	-	-	-
	26	1825	2205	10195	5575	-	-	-	-
	28	1825	2205	10270	5990	-	-	-	-
	30	1825	2205	10360	6405	-	-	-	-
	32	1825	2275	10845	6800	-	-	-	-
	34	1825	2275	10925	7220	-	-	-	-
	36	1825	2275	11005	7650	-	-	-	-
GASPCR-HD 9017 Folding wings	32	1825	2235	10290	6950	3465	3865	9935	4825
	34	1825	2235	10370	7360	3465	3875	9935	5235
	36	1825	2235	10448	7770	3720	4135	9935	4825

NOTE

- The dimensions are subjected to change due to the disc blades features, used tires and frame opening adjustments.
- Measures in millimeters.

Dimensions for transportation and storage

Model	Number of disc blades	A	B	C	D
GASPCR-EHD 10020	12	1880	2225	8440	3035
	14	1880	2225	8535	3505
	16	1880	2205	9920	3970
	18	1880	2205	10010	4445
	20	1880	2205	10105	4915
	22	1880	2205	10195	5390
	24	1880	2205	10285	5861
	26	1910	2350	10250	6530
	28	1910	2350	10340	6995
	30	1910	2350	10430	7485

NOTE

- The dimensions are subjected to change due to the disc blades features, used tires and frame opening adjustments.
- Measures in millimeters.

GAPCR-HD 8013 - 29 to 37 disc blades (mechanical)

01 - Frame

02 - Front disc gang

03 - Rear disc gang

04 - Wheels

05 - Hydraulic cylinder

06 - Extensor

07 - Stabilizer bar

08 - Hose support

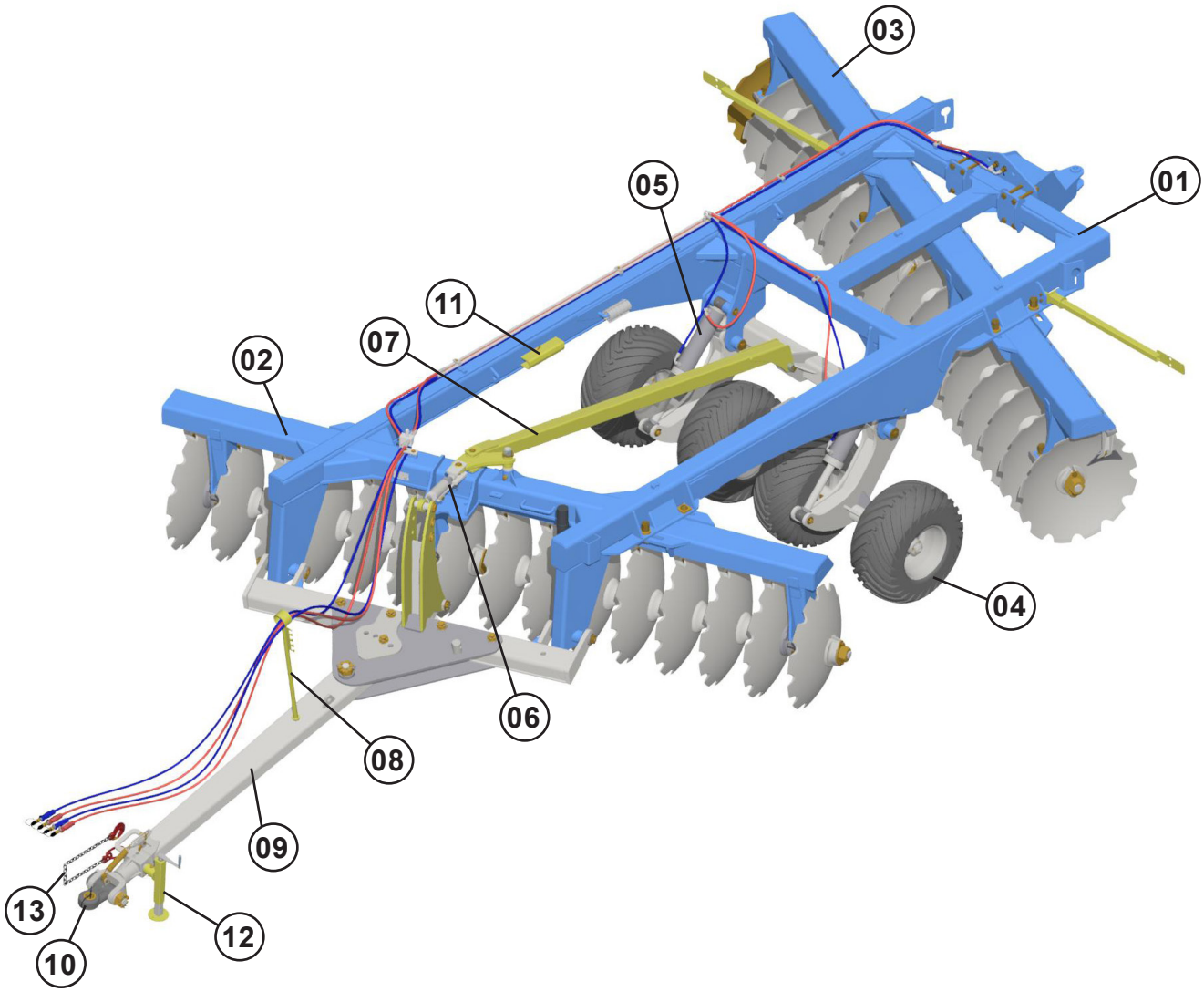
09 - Drawbar

10 - Tractor hitch

11 - Transport lock

12 - Jack

13 - Safety chain



GAPCR-HD 8013 - 45 and 49 disc blades (mechanical) - folding wings

01 - Frame

02 - Front disc gang

03 - Rear disc gang

04 - Wheels

05 - Hydraulic cylinder

06 - Extensor

07 - Stabilizer bar

08 - Hose support

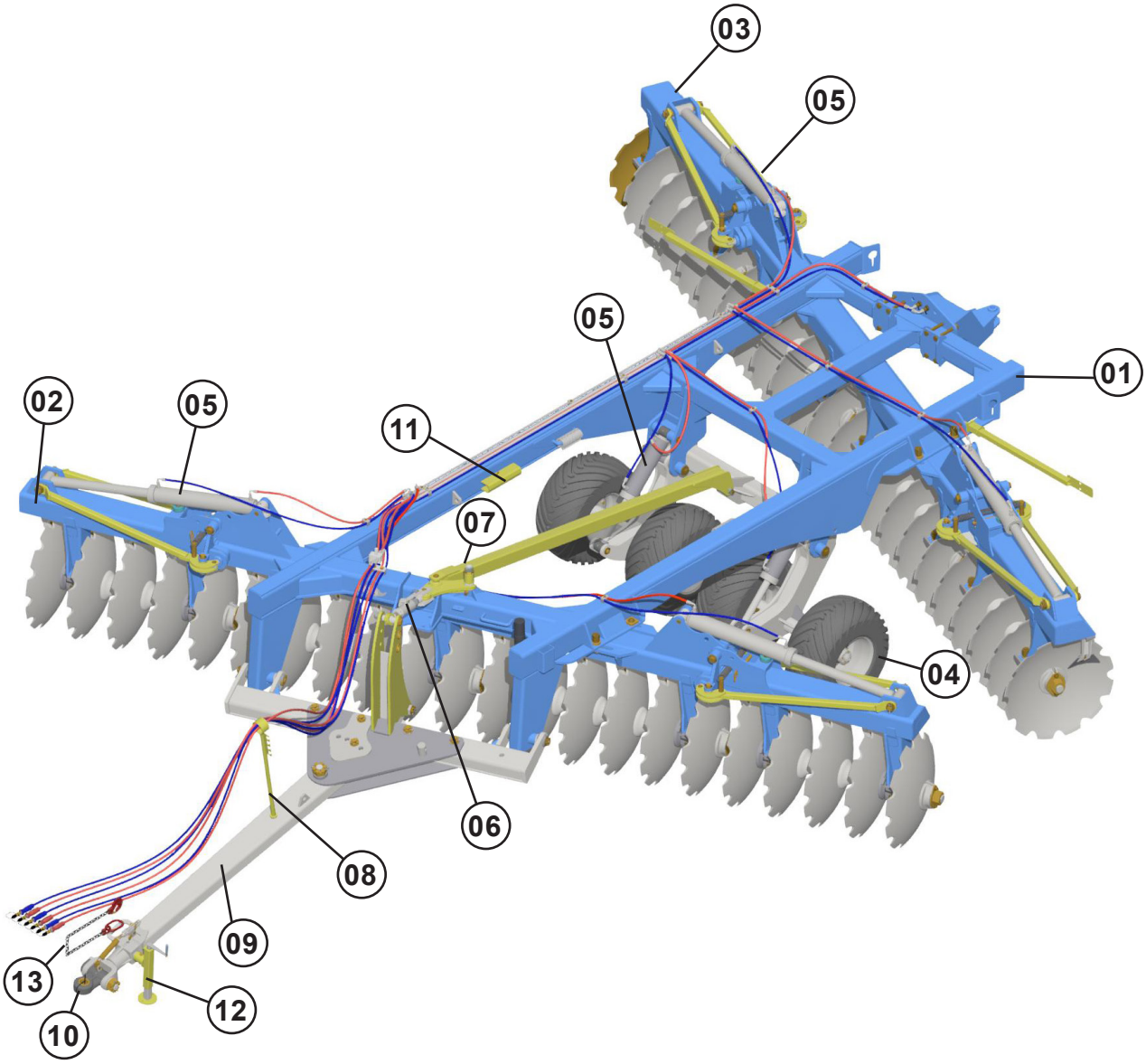
09 - Drawbar

10 - Tractor hitch

11 - Transport lock

12 - Jack

13 - Safety chain



GAPCR-HD 8013 - 21 to 27 disc blades (hydraulic)

01 - Frame

02 - Front disc gang

03 - Rear disc gang

04 - Wheels

05 - Hydraulic cylinder

06 - Stabilizer cylinder

07 - Hose support

08 - Hitch bar

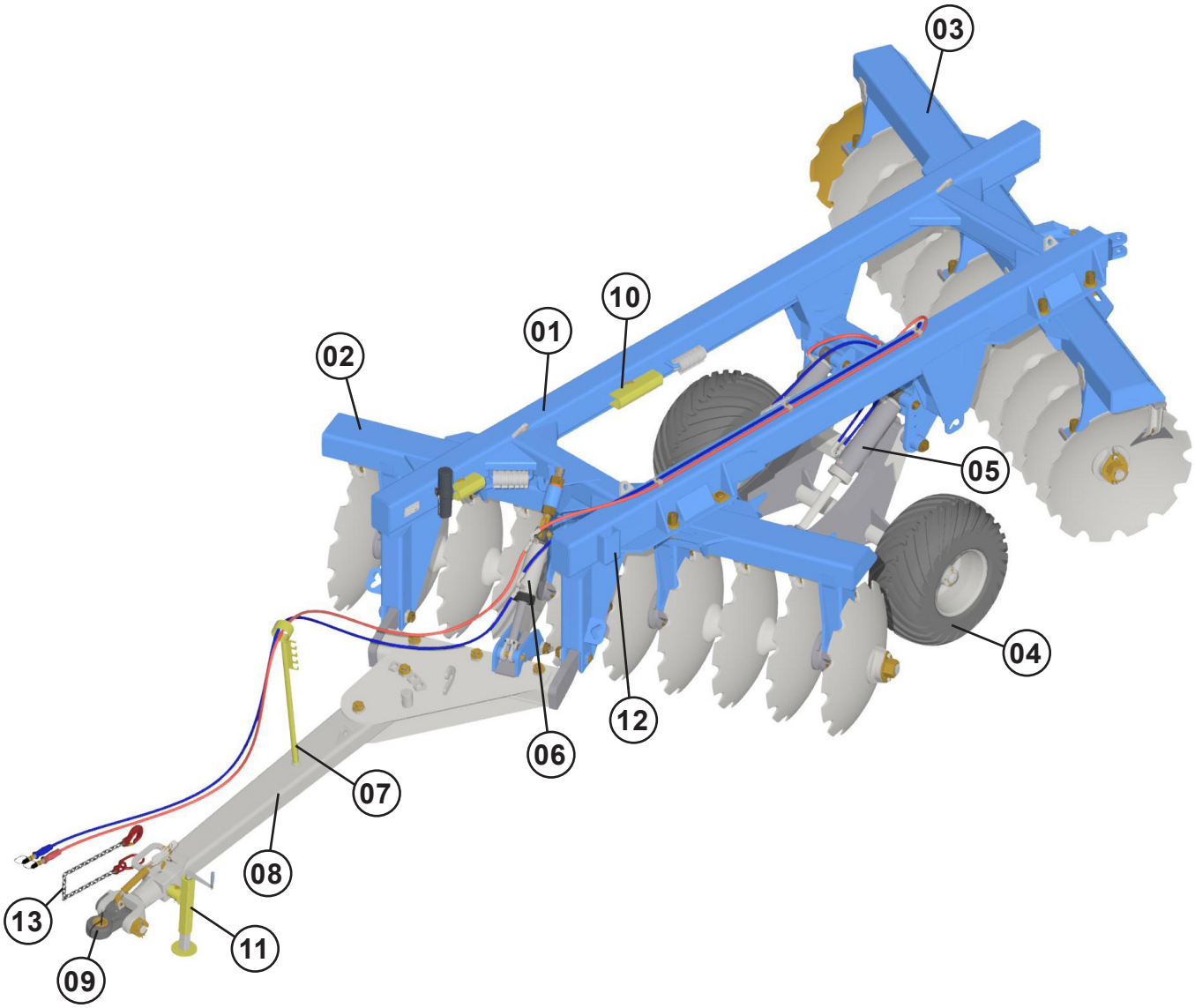
09 - Drawbar

10 - Transport lock

11 - Jack

12 - Wrench support

13 - Safety chain



GAPCR-HD 8013 - 29 to 37 disc blades (hydraulic)

01 - Frame

02 - Front disc gang

03 - Rear disc gang

04 - Wheels

05 - Hydraulic cylinder

06 - Stabilizer cylinder

07 - Hose support

08 - Drawbar

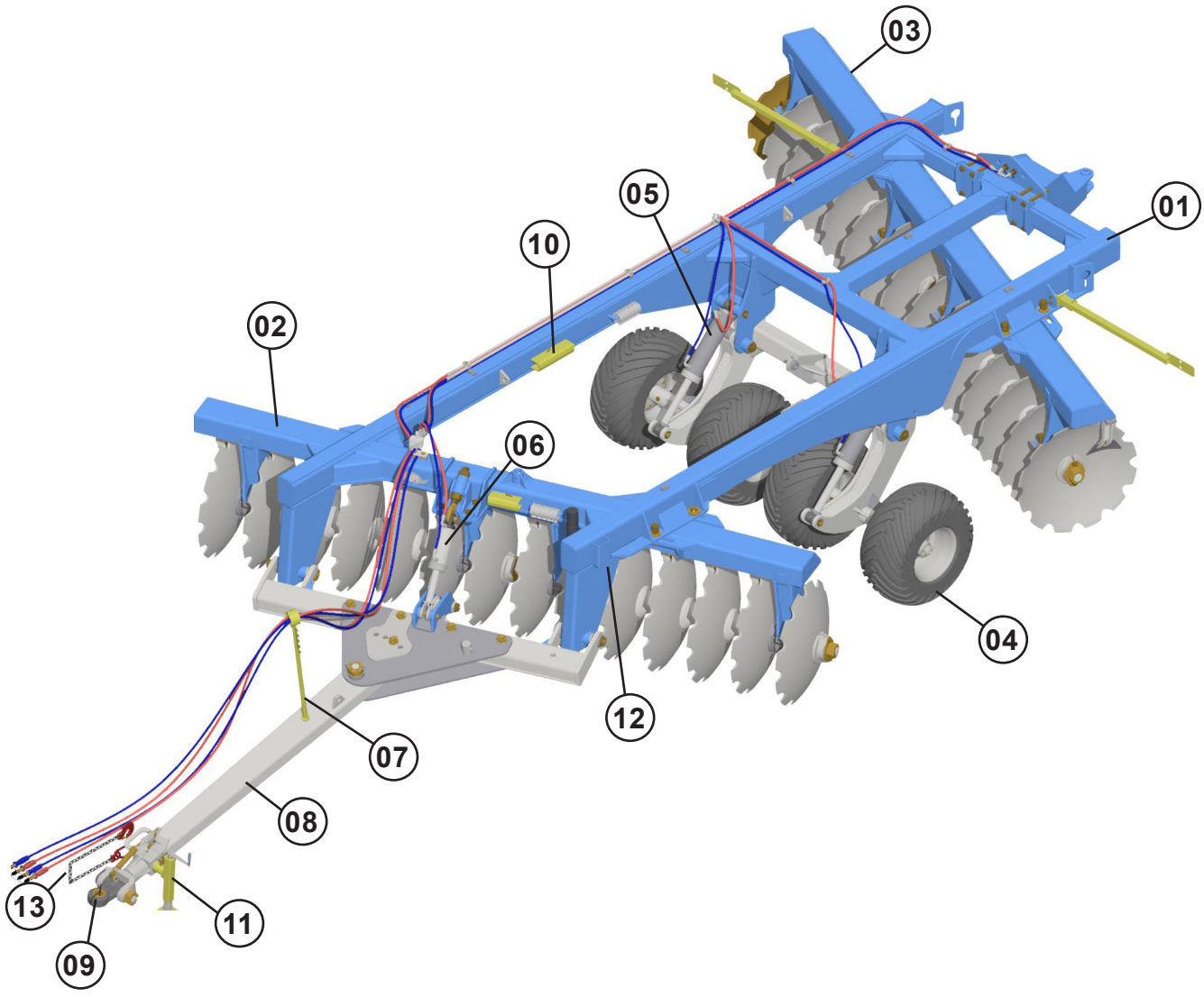
09 - Tractor hitch

10 - Transport lock

11 - Jack

12 - Wrench support

13 - Safety chain



GAPCR-HD 8013 - 39 to 45 disc blades (hydraulic)

01 - Front frame

02 - Rear frame

03 - Front disc gang

04 - Rear disc gang

05 - Wheels

06 - Hydraulic cylinder

07 - Stabilizer cylinder

08 - Hose support

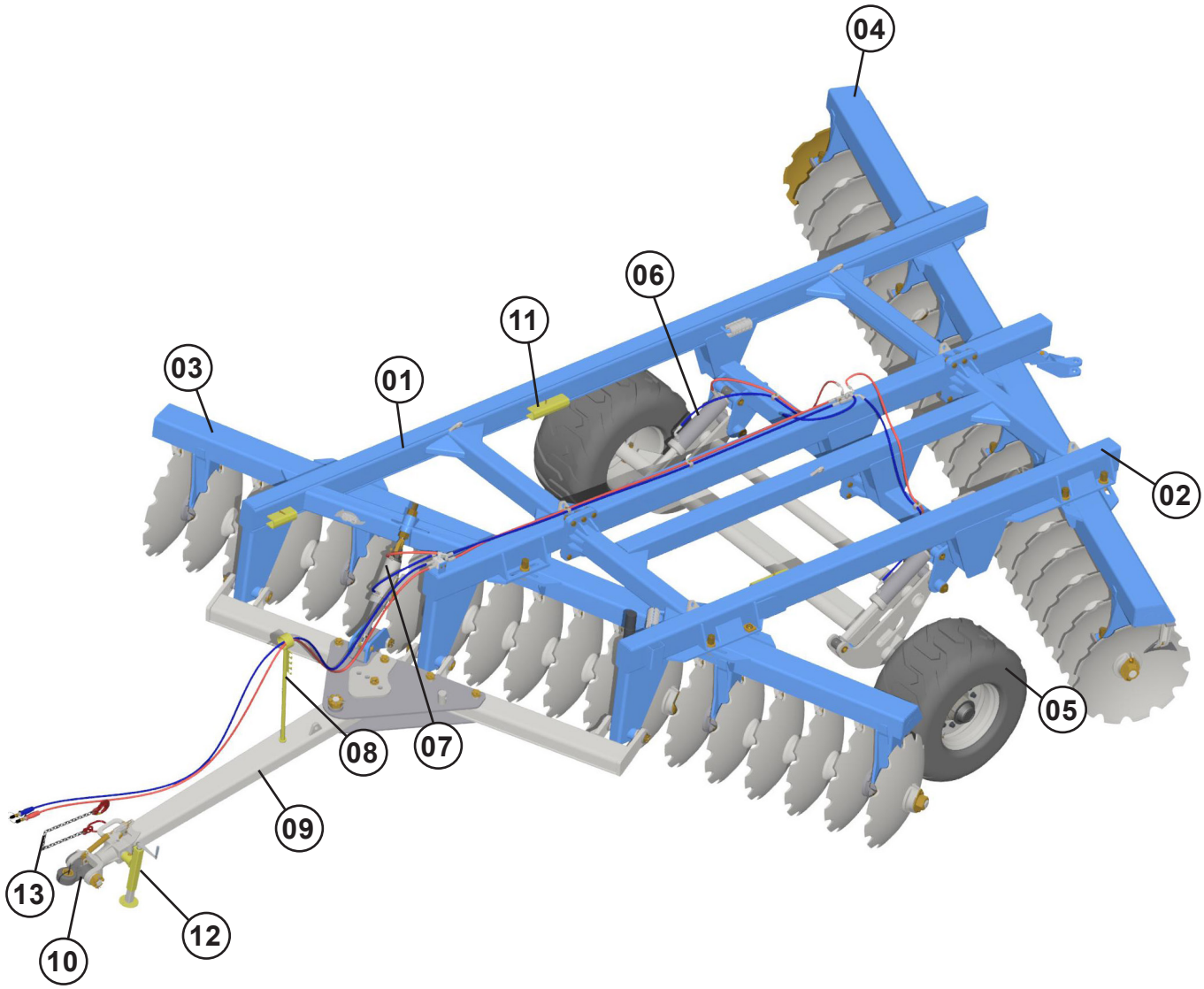
09 - Drawbar

10 - Tractor hitch

11 - Transport lock

12 - Jack

13 - Safety chain



GAPCR-HD 8013 - 41 to 49 disc blades (hydraulic) - folding wings

01 - Frame

02 - Front disc gang

03 - Rear disc gang

04 - Wheels

05 - Hydraulic cylinder

06 - Stabilizer cylinder

07 - Folding wing cylinder

08 - Hose support

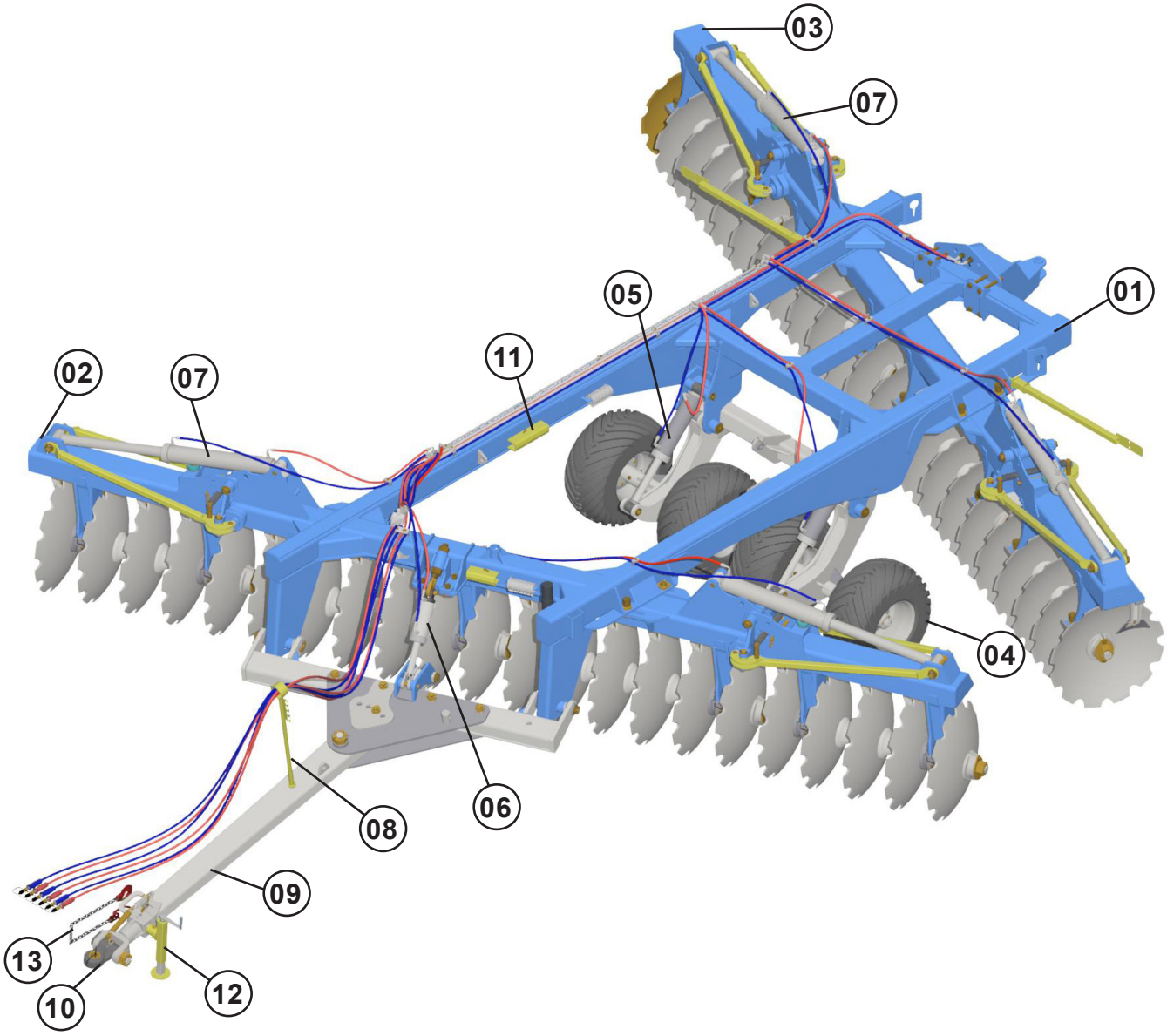
09 - Drawbar

10 - Tractor hitch

11 - Transport lock

12 - Jack

13 - Safety chain



GASPCR-HD 9017 - 18 to 22 disc blades (mechanical)

01 - Frame

02 - Front disc gang

03 - Rear disc gang

04 - Wheels

05 - Hydraulic cylinder

06 - Extensor

07 - Stabilizer bar

08 - Hose support

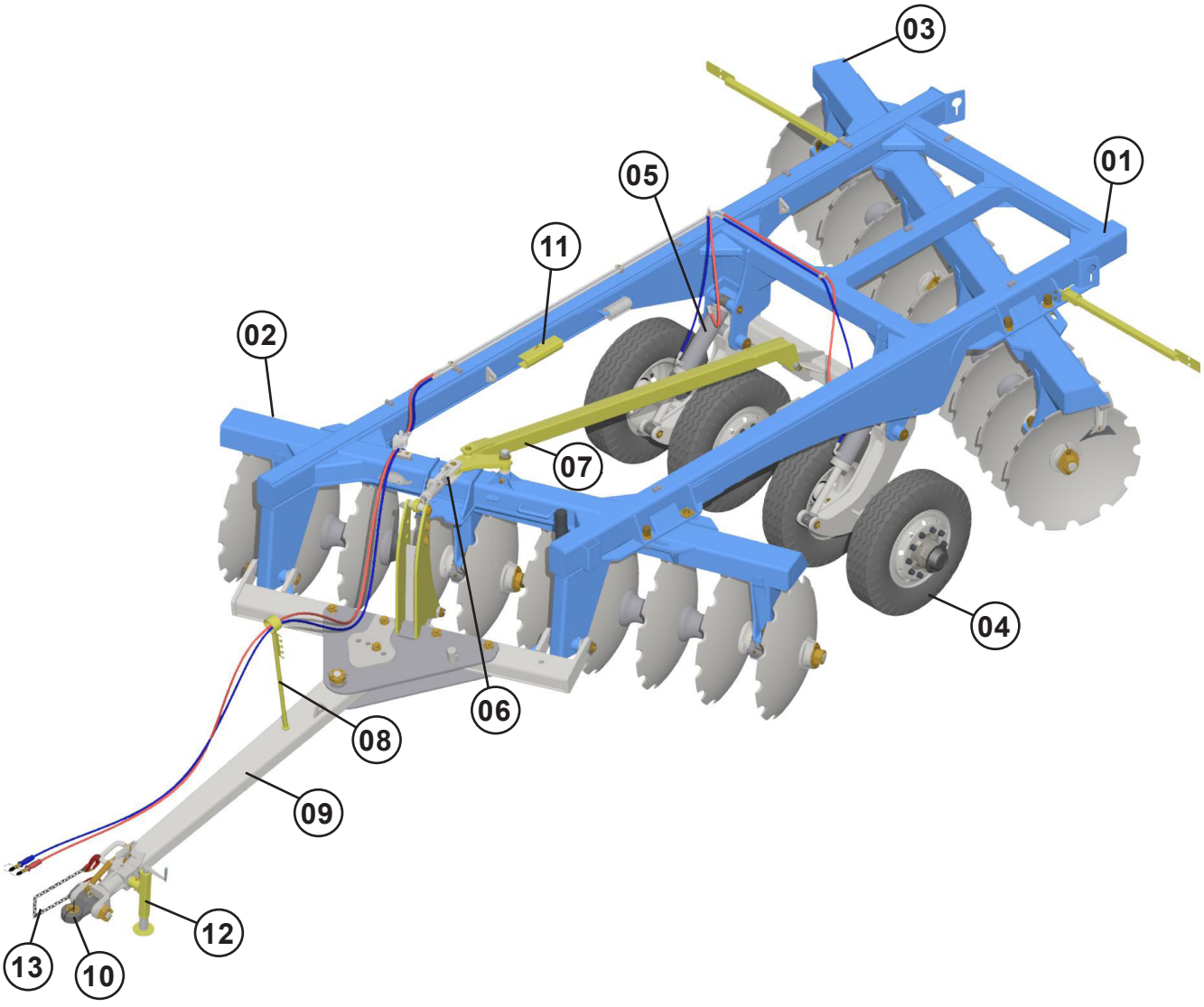
09 - Drawbar

10 - Tractor hitch

11 - Transport lock

12 - Jack

13 - Safety chain



GASPCR-HD 9017 - 32 to 36 disc blades (mechanical) - folding wings

01 - Frame

02 - Front disc gang

03 - Rear disc gang

04 - Wheels

05 - Hydraulic cylinder

06 - Extensor

07 - Stabilizer bar

08 - Hose support

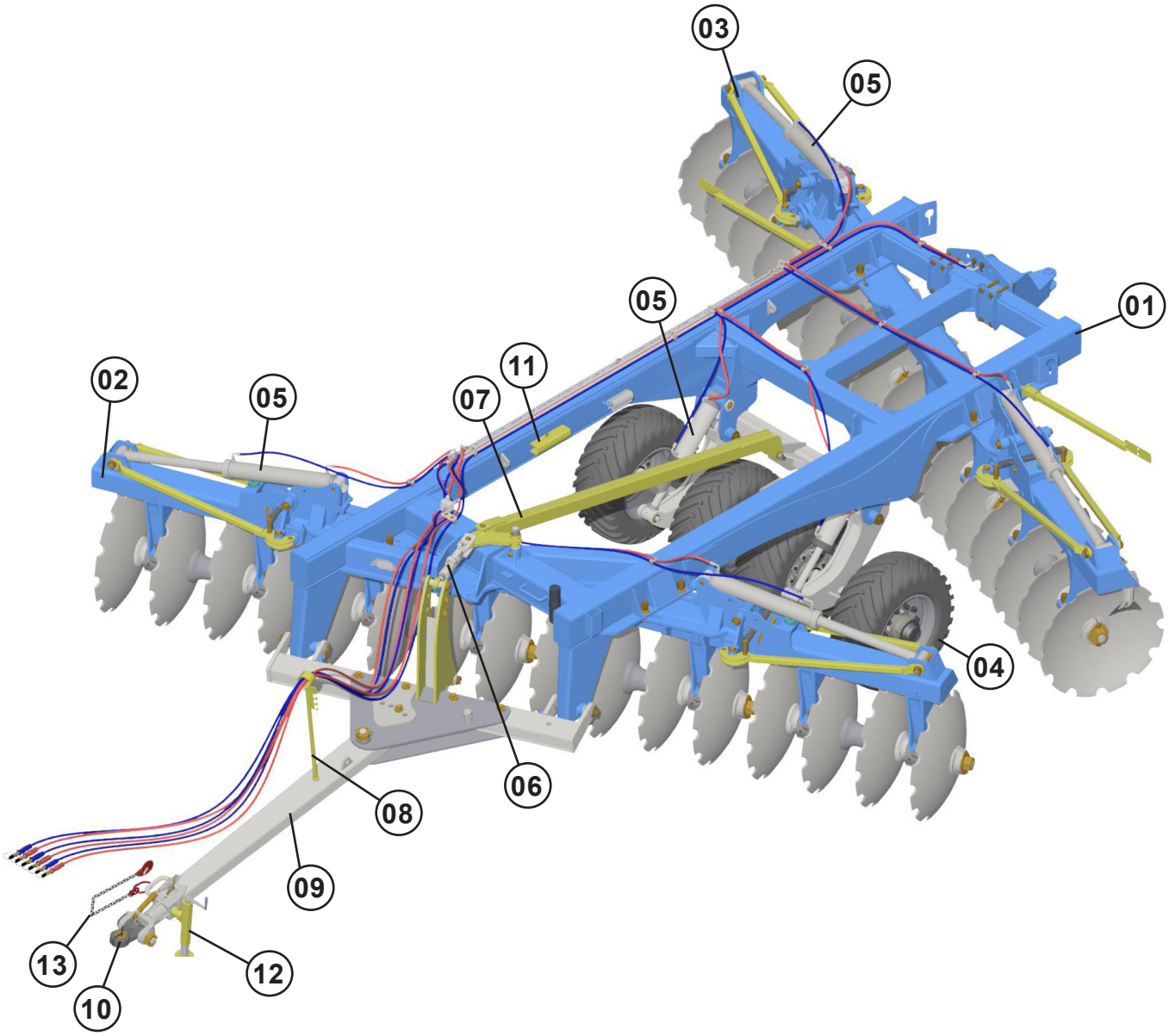
09 - Drawbar

10 - Tractor hitch

11 - Transport lock

12 - Jack

13 - Safety chain



GASPCR-HD 9017 - 12 to 16 disc blades (hydraulic)

01 - Frame

02 - Front disc gang

03 - Rear disc gang

04 - Wheels

05 - Hydraulic cylinder

06 - Stabilizer cylinder

07 - Hose support

08 - Drawbar

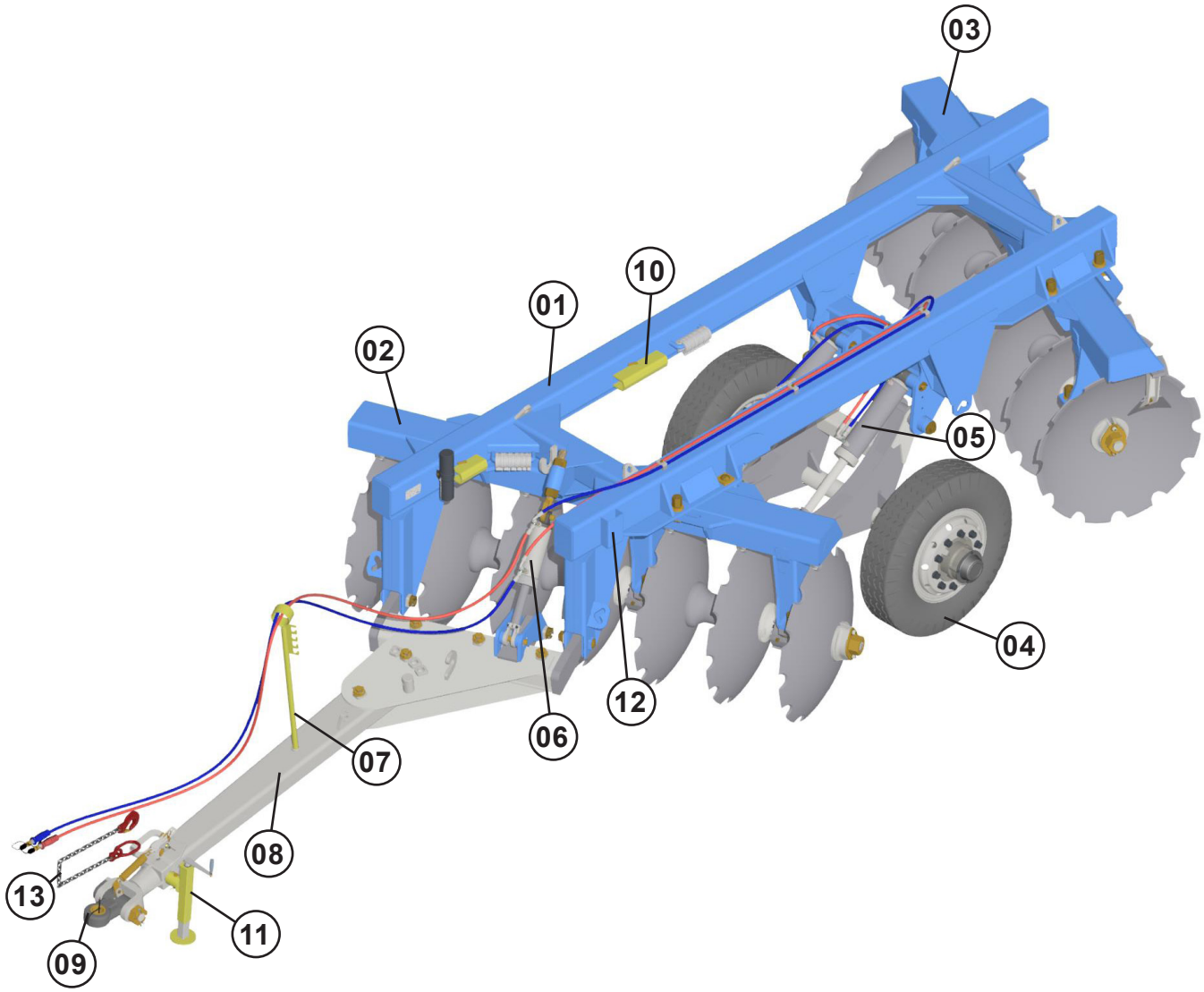
09 - Tractor hitch

10 - Transport lock

11 - Jack

12 - Wrench support

13 - Safety chain



GASPCR-HD 9017 - 18 to 22 disc blades (hydraulic)

01 - Frame

02 - Front disc gang

03 - Rear disc gang

04 - Wheels

05 - Hydraulic cylinder

06 - Stabilizer cylinder

07 - Hose support

08 - Drawbar

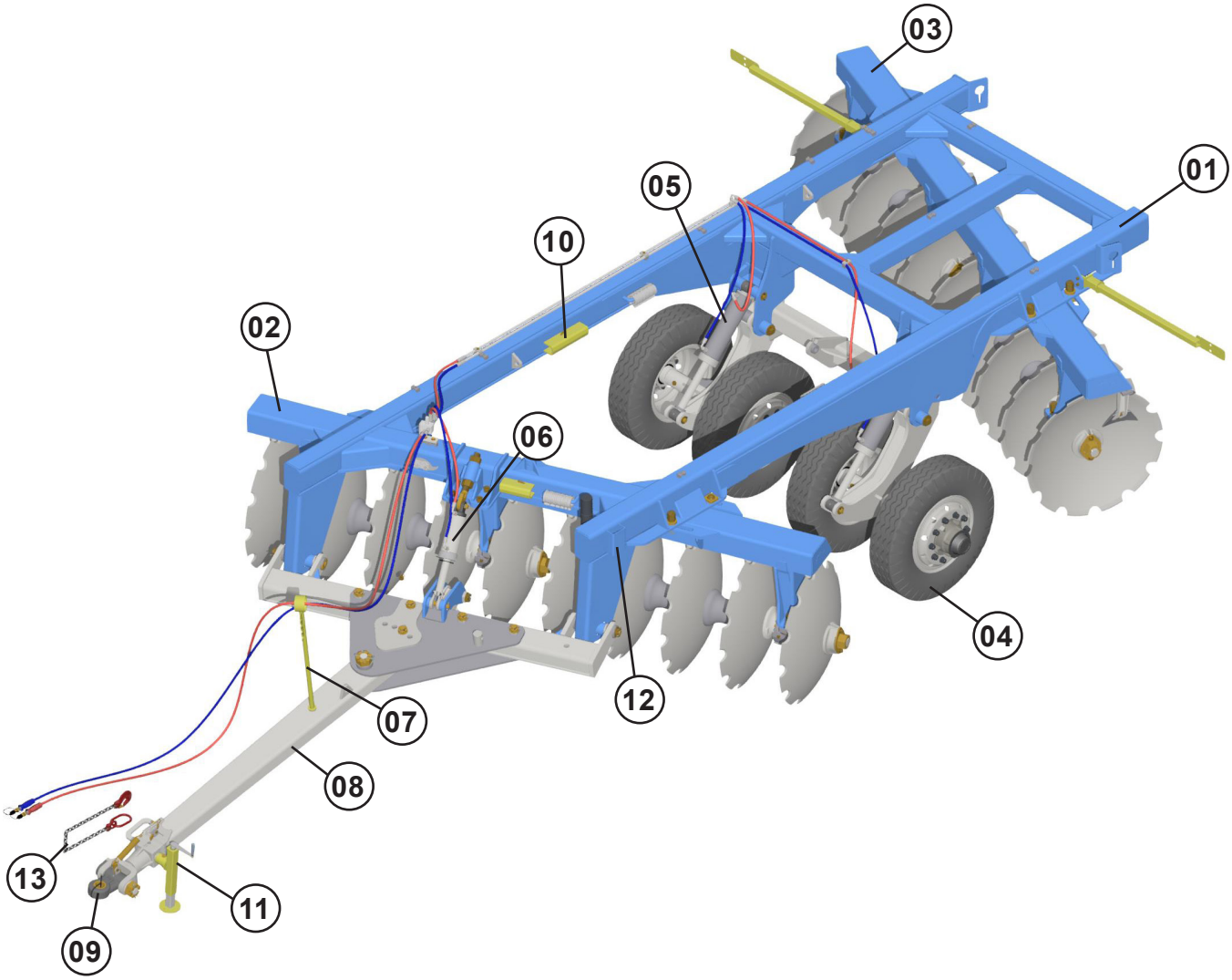
09 - Tractor hitch

10 - Transport lock

11 - Jack

12 - Wrench support

13 - Safety chain



GASPCR-HD 9017 - 24 to 30 disc blades (hydraulic)

01 - Frame

02 - Front disc gang

03 - Rear disc gang

04 - Wheels

05 - Hydraulic cylinder

06 - Stabiilzer cylinder

07 - Hose support

08 - Drawbar

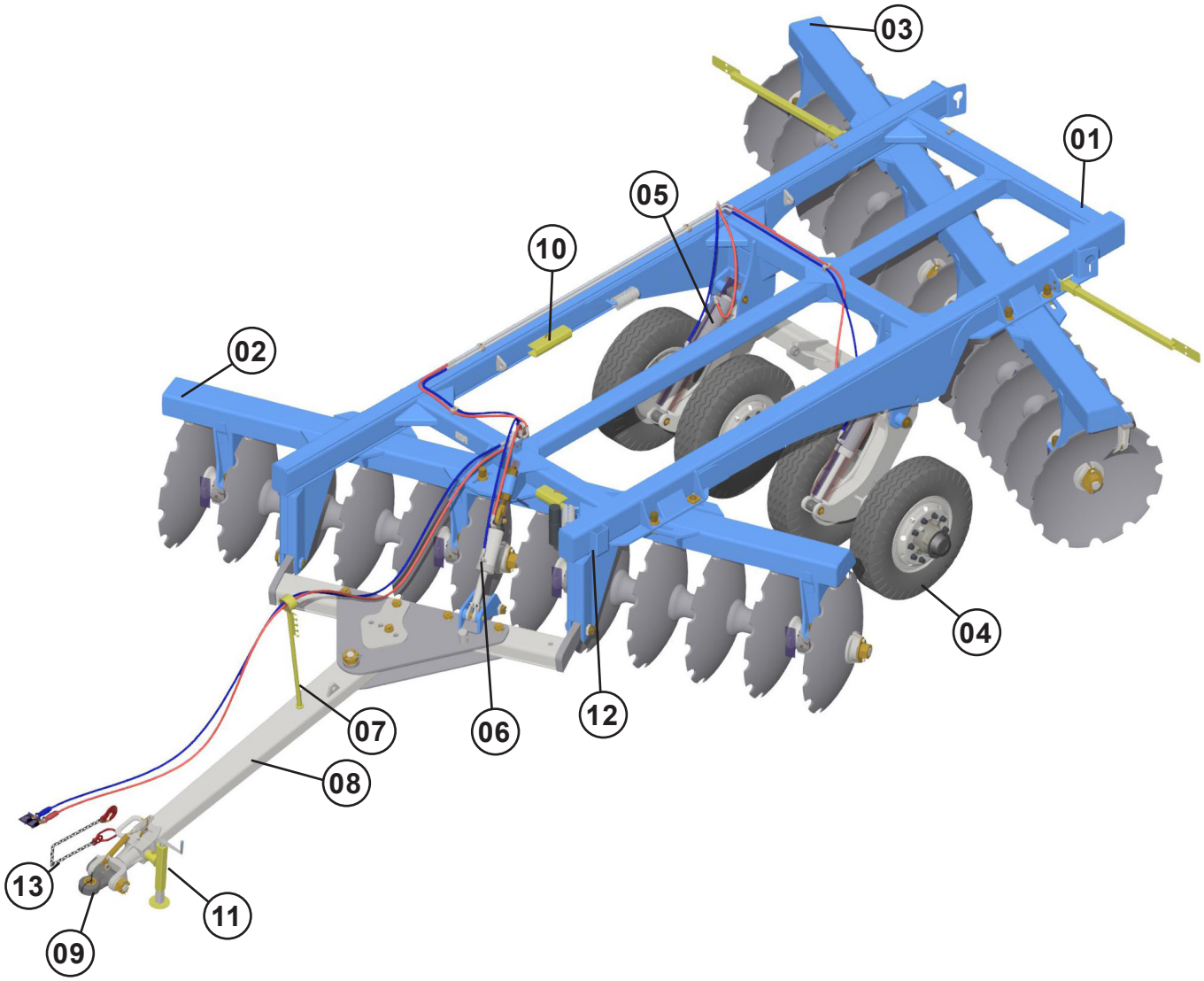
09 - Tractor hitch

10 - Transport lock

11 - Jack

12 - Wrench support

13 - Safety chain



GASPCR-HD 9017 - 32 to 36 disc blades (hydraulic)

01 - Right frame

02 - Left frame

03 - Front frame

04 - Rear frame

05 - Wheels

06 - Hydraulic cylinder

07 - Stabilizer cylinder

08 - Hose support

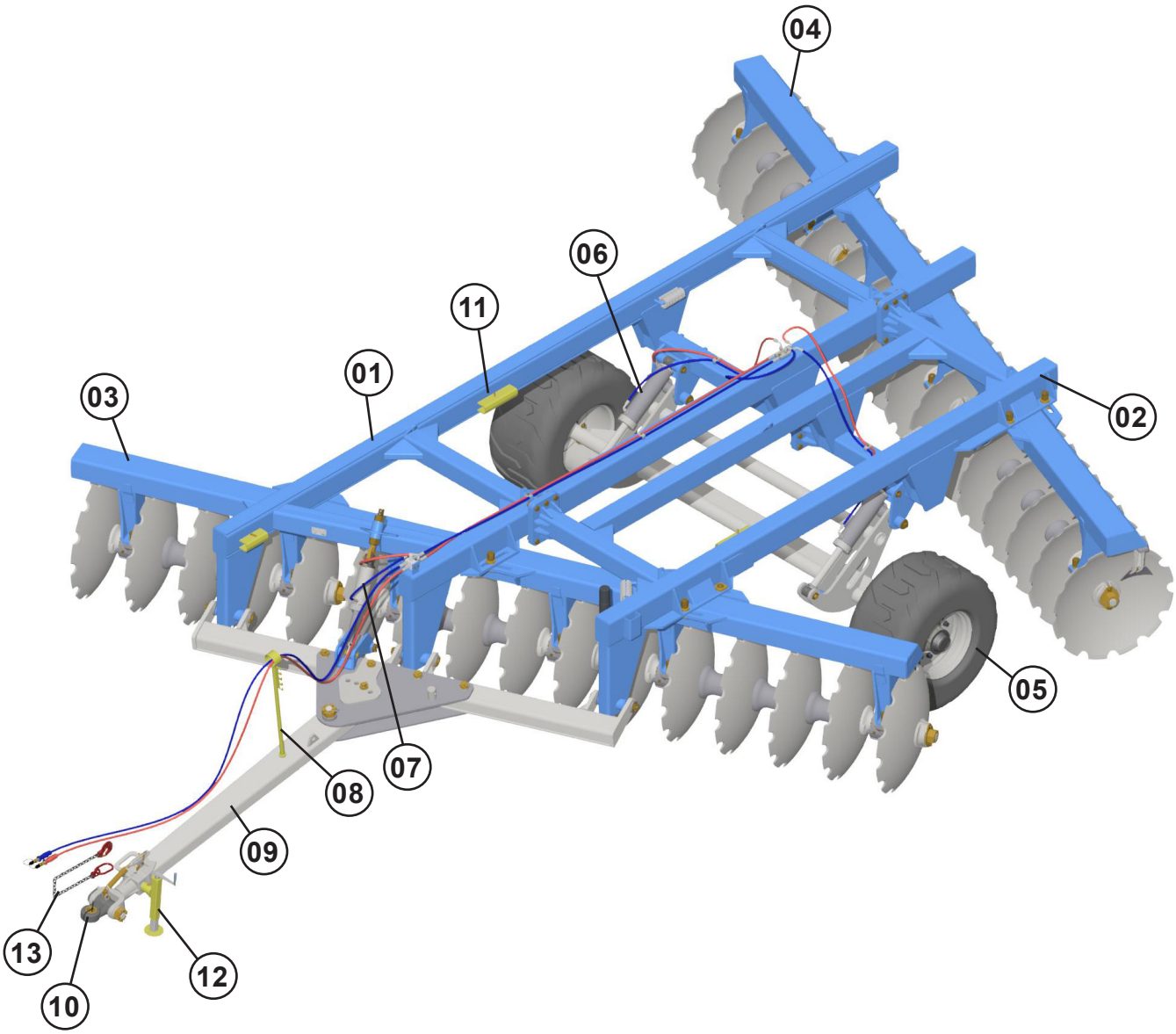
09 - Drawbar

10 - Tractor hitch

11 - Transport lock

12 - Jack

13 - Safety chain



GASPCR-HD 9017 - 32 to 36 disc blades (hydraulic) - folding wings

01 - Frame

02 - Front disc gang

03 - Rear disc gang

04 - Wheels

05 - Hydraulic cylinder

06 - Stabilizer cylinder

07 - Folding wings cylinder

08 - Hose support

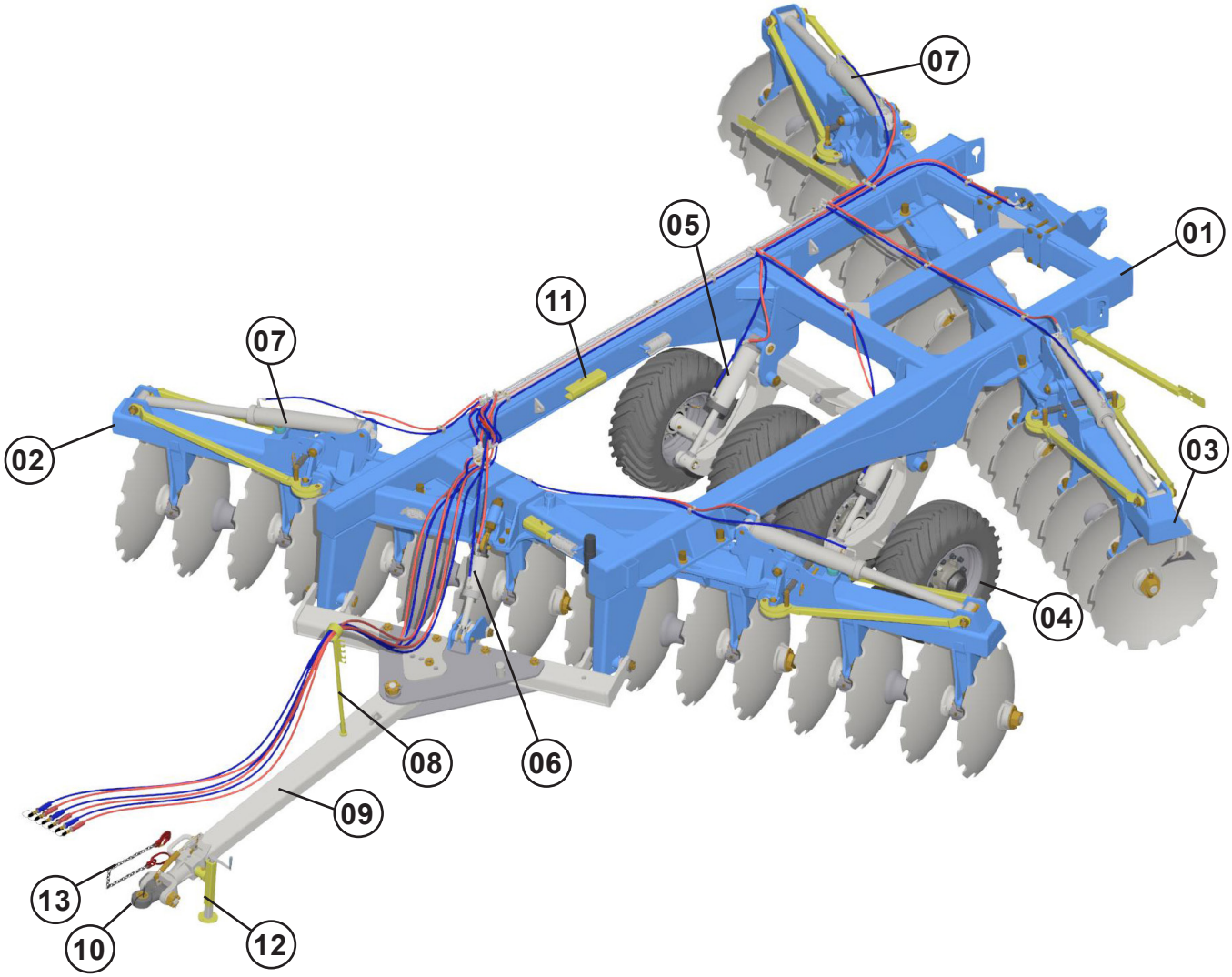
09 - Drawbar

10 - Tractor hitch

11 - Transport lock

12 - Jack

13 - Safety chain



GASPCR-EHD 10020 - 16 to 24 disc blades (mechanical)

01 - Frame

02 - Front disc gang

03 - Rear disc gang

04 - Wheels

05 - Hydraulic cylinder

06 - Extensor

07 - Stabilizer bar

08 - Hose support

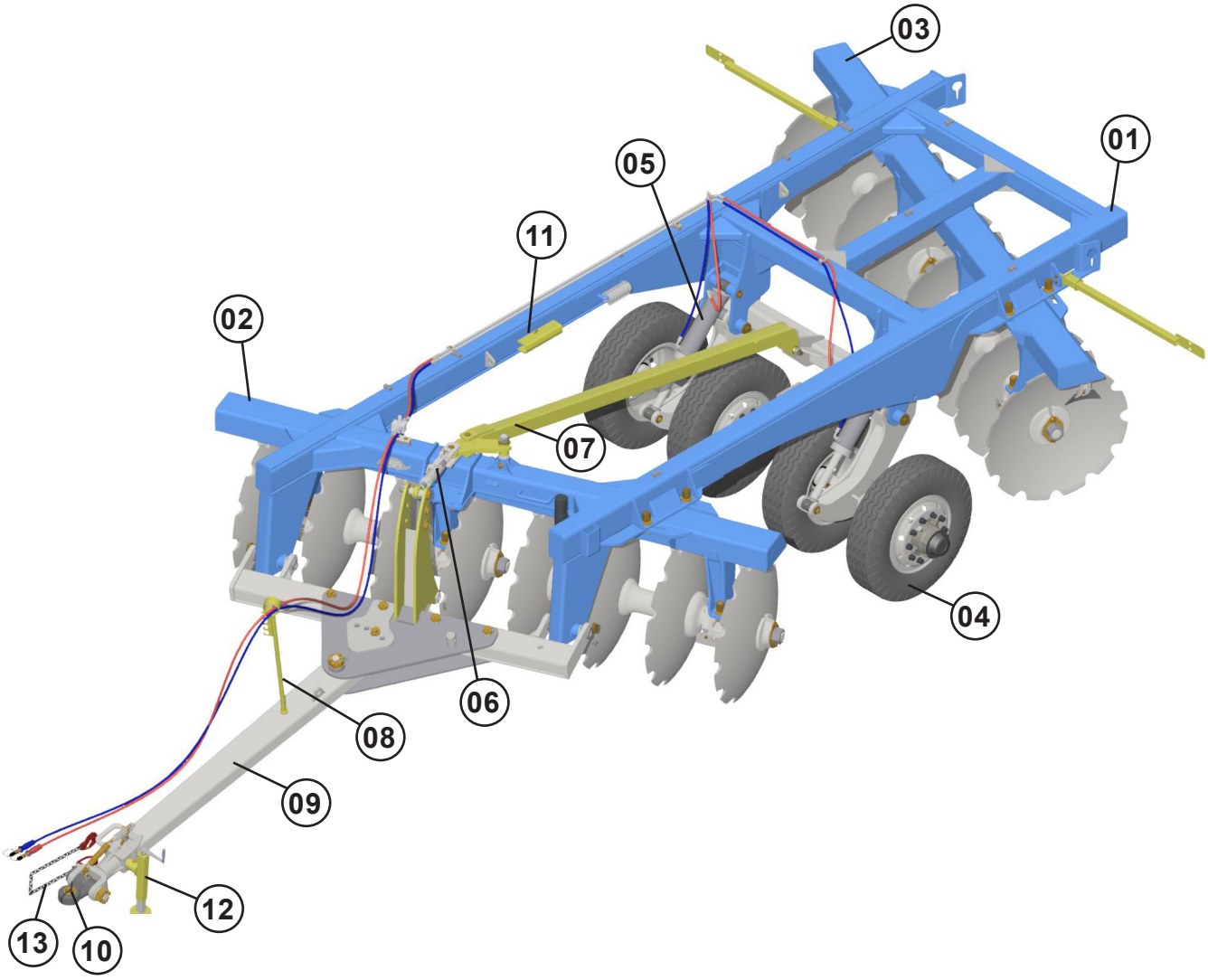
09 - Drawbar

10 - Tractor hitch

11 - Transport lock

12 - Jack

13 - Safety chain



GASPCR-EHD 10020 - 12 and 14 disc blades (hydraulic)

01 - Frame

02 - Front disc gang

03 - Rear disc gang

04 - Wheels

05 - Hydraulic cylinder

06 - Stabilizer cylinder

07 - Hose support

08 - Drawbar

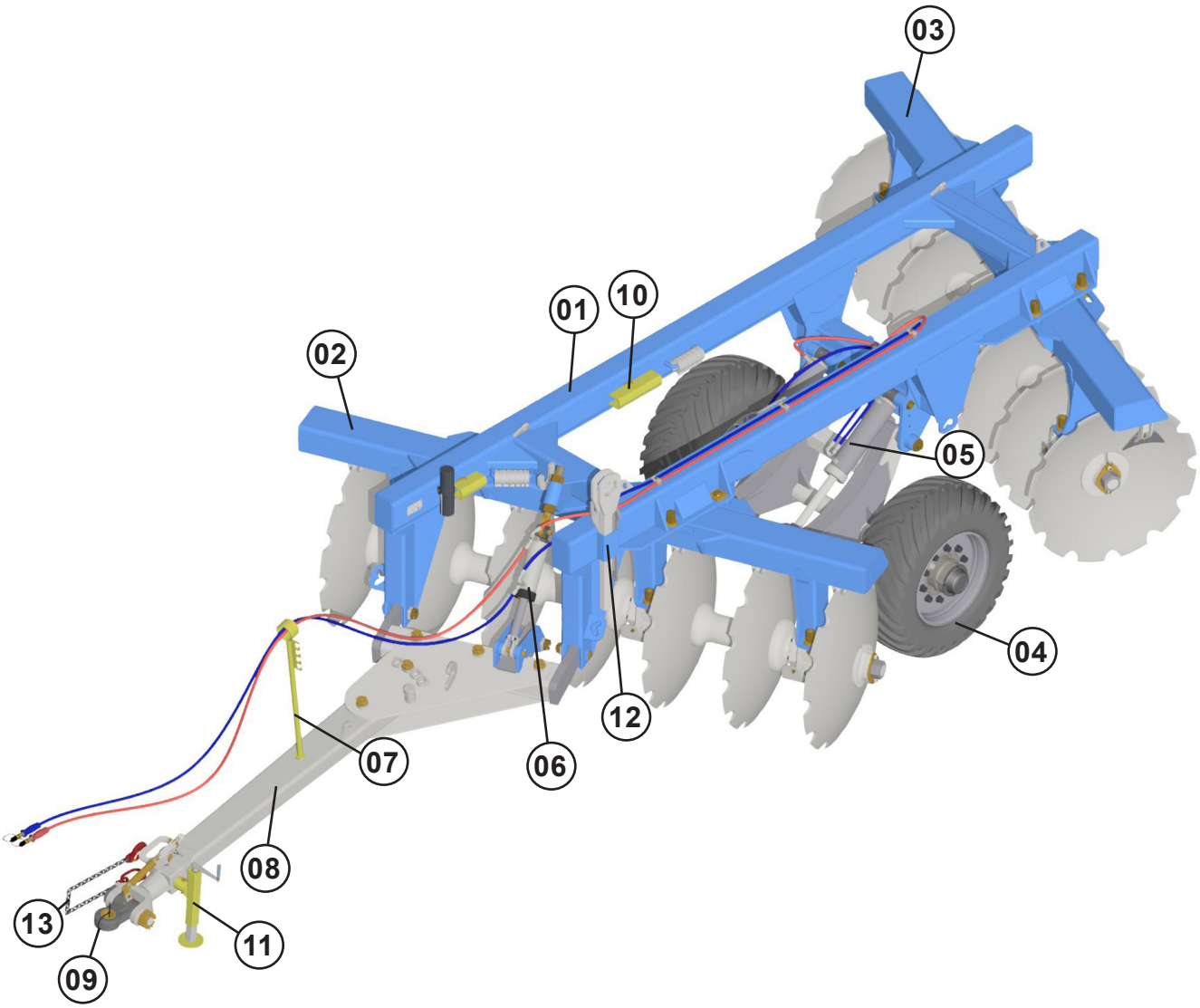
09 - Tractor hitch

10 - Transport lock

11 - Jack

12 - Wrench support

13 - Safety chain



GASPCR-EHD 10020 - 16 to 24 disc blades (hydraulic)

01 - Frame

02 - Front disc gang

03 - Rear disc gang

04 - Wheels

05 - Hydraulic cylinder

06 - Stabilizer cylinder

07 - Hose support

08 - Drawbar

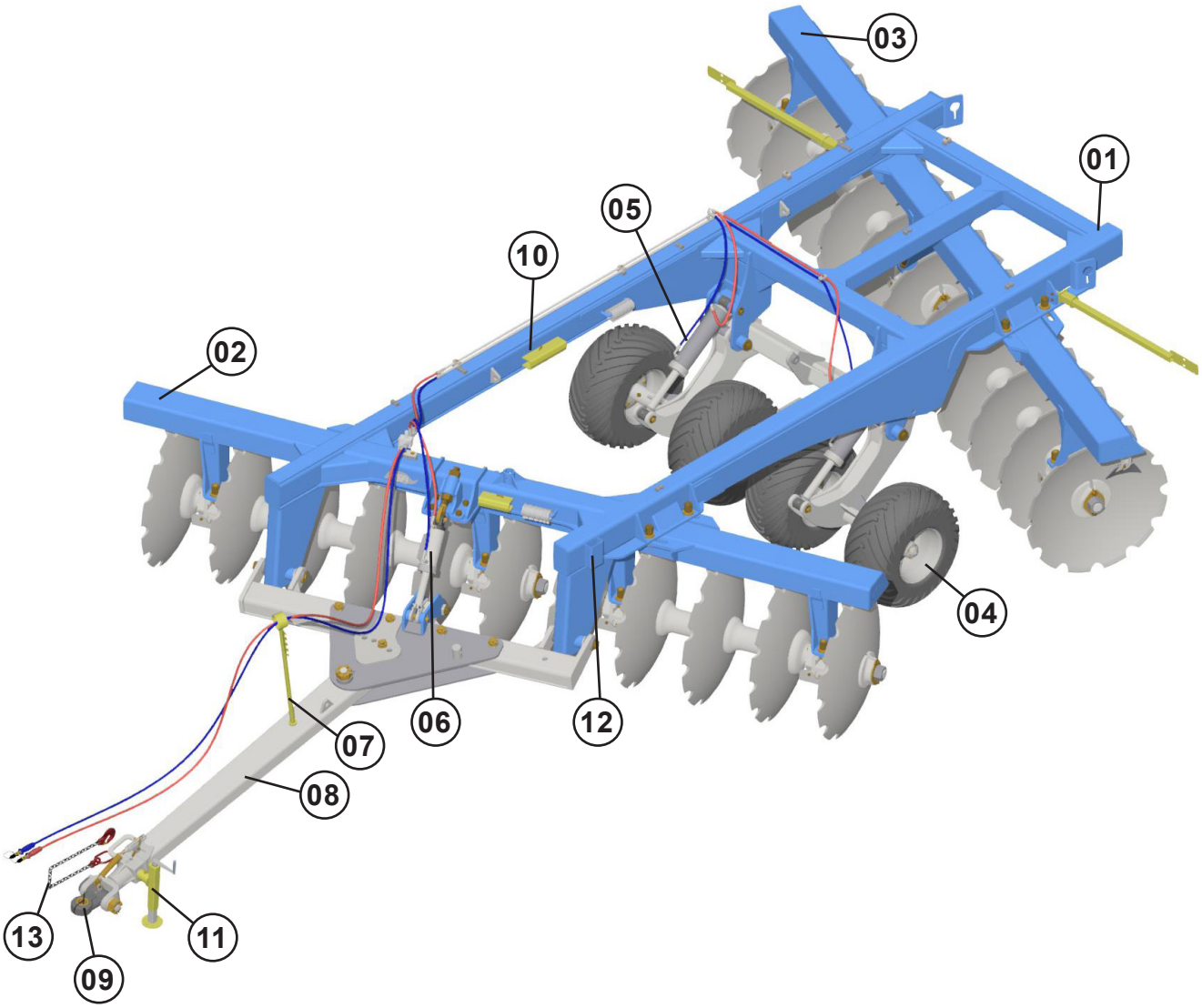
09 - Tractor hitch

10 - Transport lock

11 - Jack

12 - Wrench support

13 - Safety chain



GASPCR-EHD 10020 - 26 to 30 disc blades (hydraulic)

01 - Frame

02 - Front disc gang

03 - Rear disc gang

04 - Wheels

05 - Hydraulic cylinder

06 - Stabilizer cylinder

07 - Hose support

08 - Drawbar

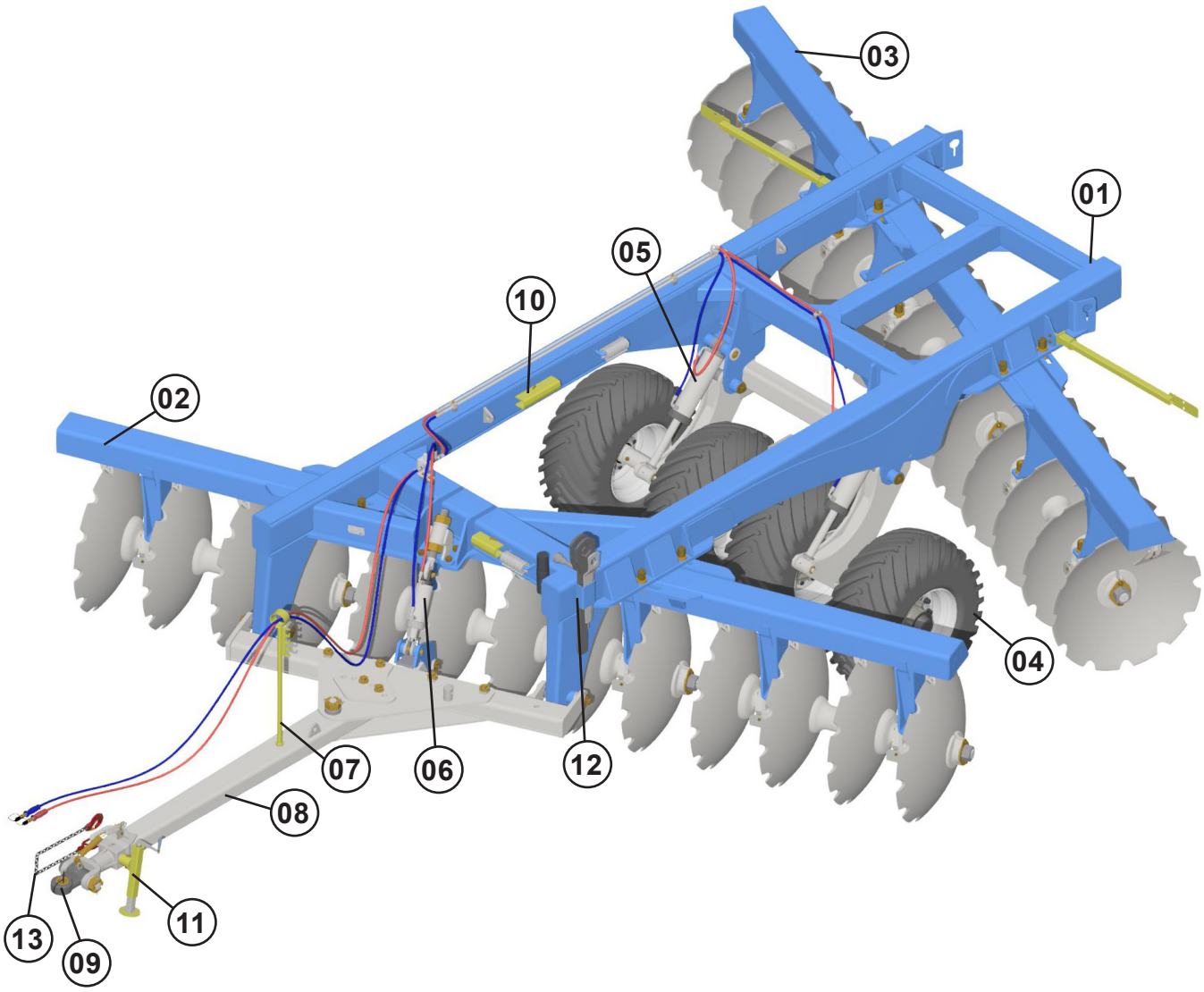
09 - Tractor hitch

10 - Transport lock

11 - Jack

12 - Wrench support

13 - Safety chain



ATTENTION!

- Only **QUALIFIED** and **AUTHORIZED** personnel must assemble/disassemble the equipment.
- Use safety glasses, earplugs/muffs, protective gloves and any other required PPE.
- Avoid direct contact with the lubrication oil and do not throw it or any other type of oil or grease away on the environment.

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

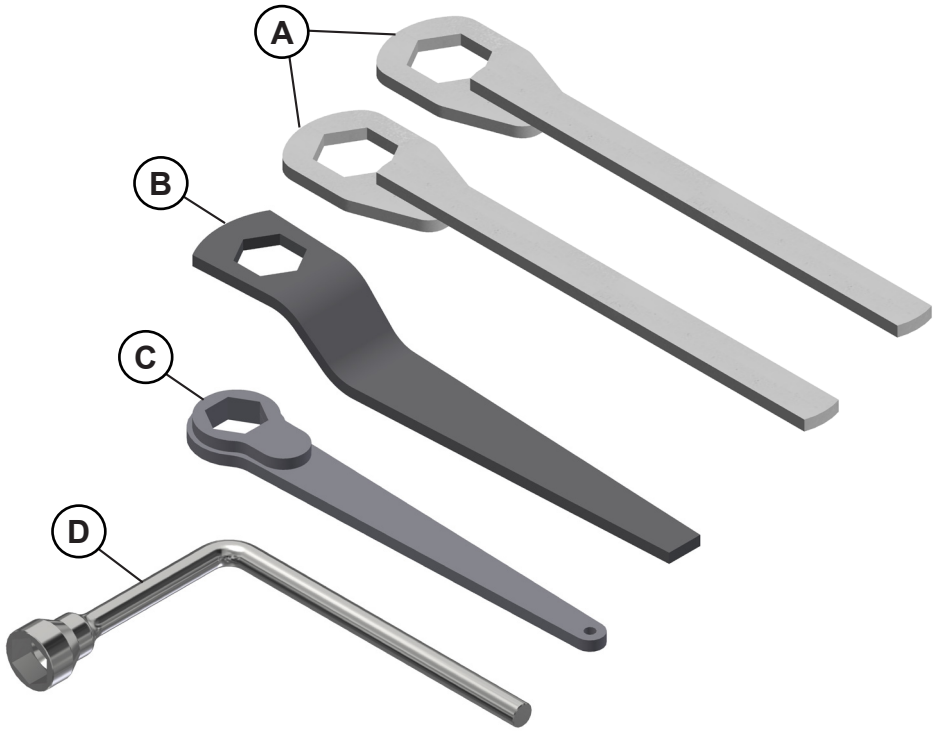
Using the set of wrenches

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

- The box end wrench (B) is used to tighten the nuts on the traction set.

- The box end wrench (C) is used to tighten the nuts on the bolts that fasten the disc gangs to the frame.

- The box end wrench (D) is used to tighten the nuts of the bearing bolts.

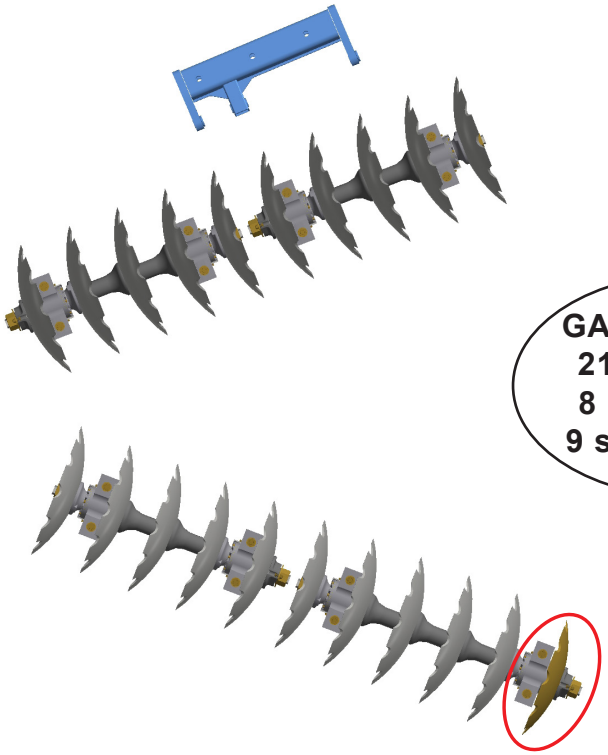


ATTENTION!

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

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

Assembly of bearings and spacer spools

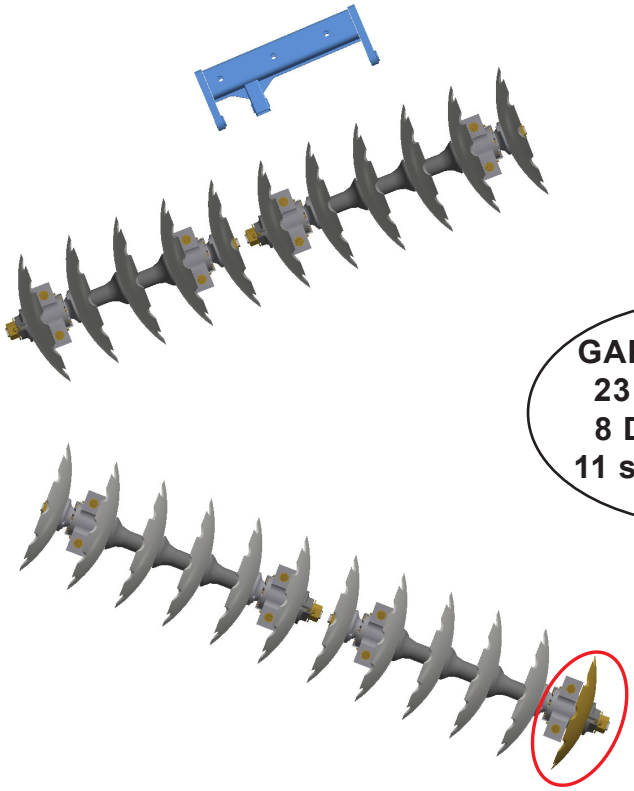


GAPCR-HD 8013
21 disc blades
8 DM bearings
9 spacer spools

Bearing

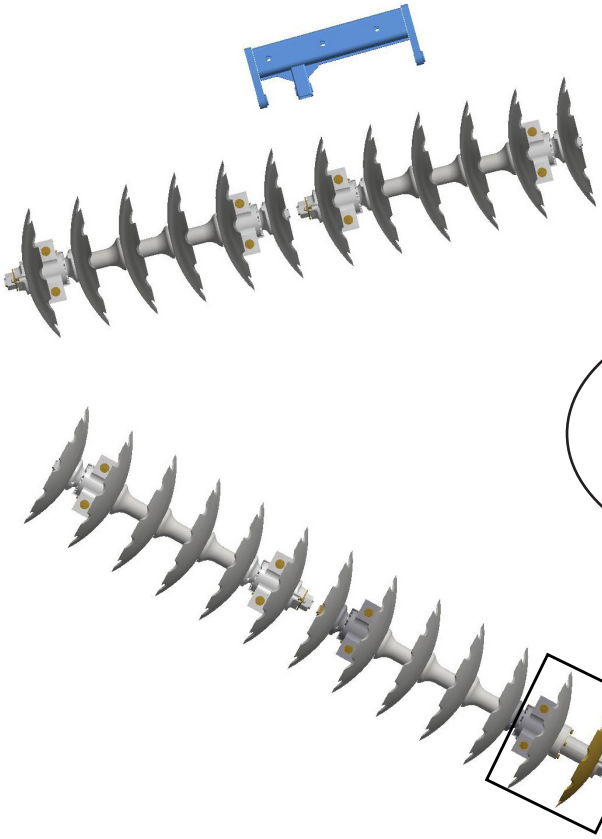
Spacer spool

Small disc



GAPCR-HD 8013
23 disc blades
8 DM bearings
11 spacer spools

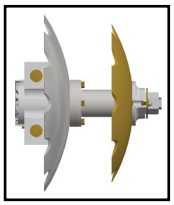
Assembly of bearings and spacer spools



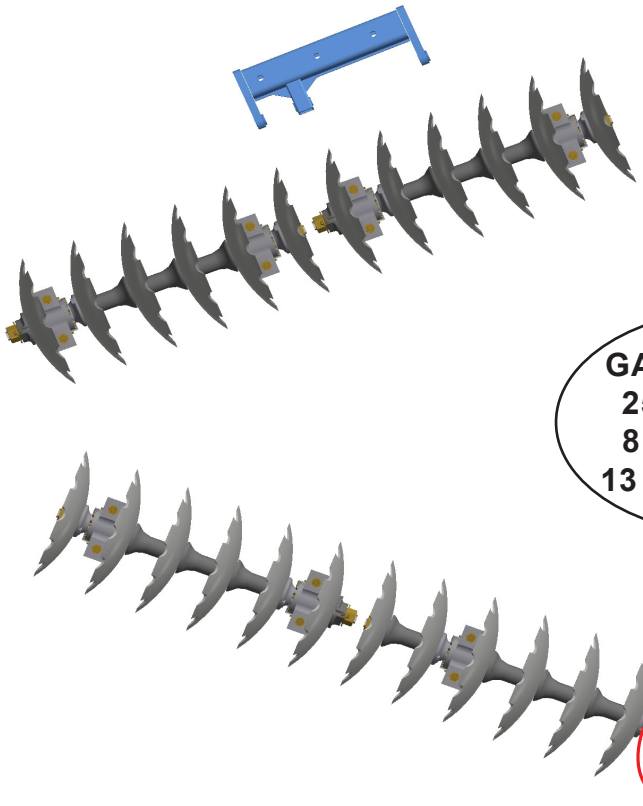
GAPCR-HD 8013
24 disc blades
8 DM bearings
12 spacer spools
1 FF spacer spool

Bearing

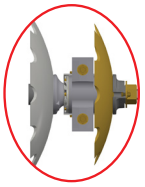
Spacer spool



Furrow filler

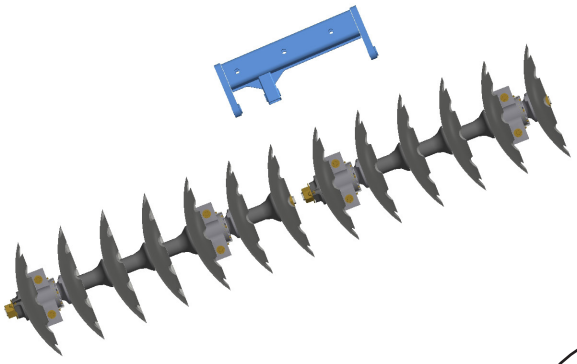


GAPCR-HD 8013
25 disc blades
8 DM bearings
13 spacer spools

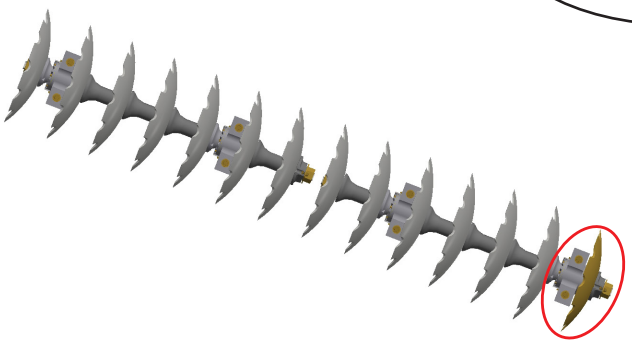


Small disc

Assembly of bearings and spacer spools



GAPCR-HD 8013
27 disc blades
8 DM bearings
15 spacer spools



Bearing

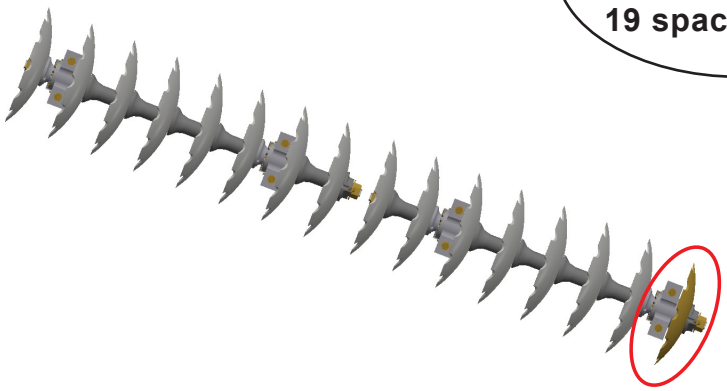
Spacer spool

Small disc

GAPCR-HD 8013
29 disc blades
8 DM bearings
17 spacer spools

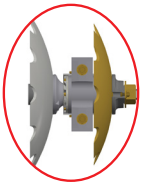
Assembly of bearings and spacer spools

GAPCR-HD 8013
31 disc blades
8 DM bearings
19 spacer spools



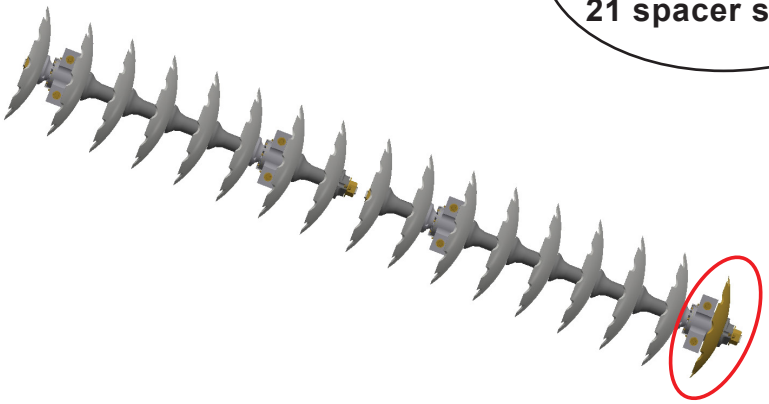
Bearing

Spacer spool



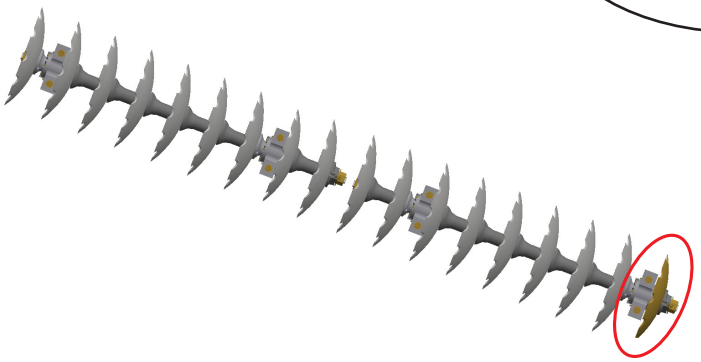
Small disc

GAPCR-HD 8013
33 disc blades
8 DM bearings
21 spacer spools



Assembly of bearings and spacer spools

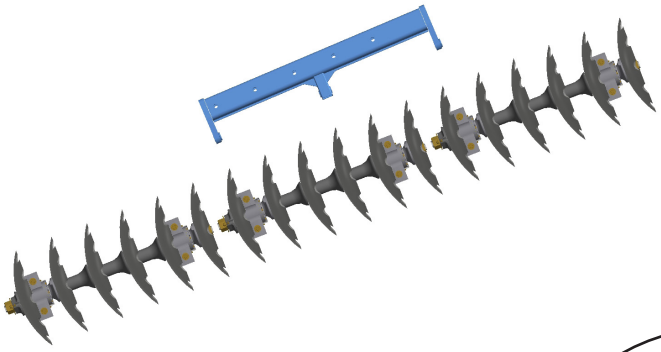
GAPCR-HD 8013
35 disc blades
8 DM bearings
23 spacer spools



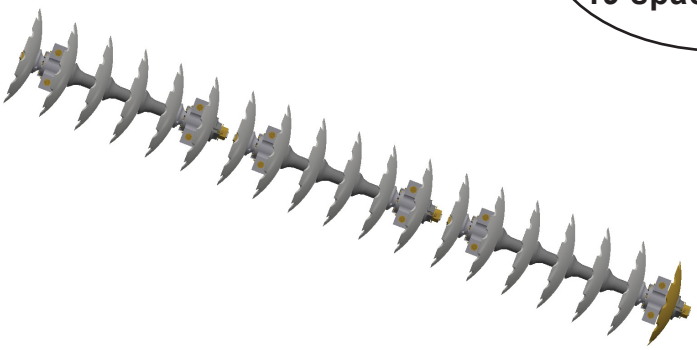
Bearing

Spacer spool

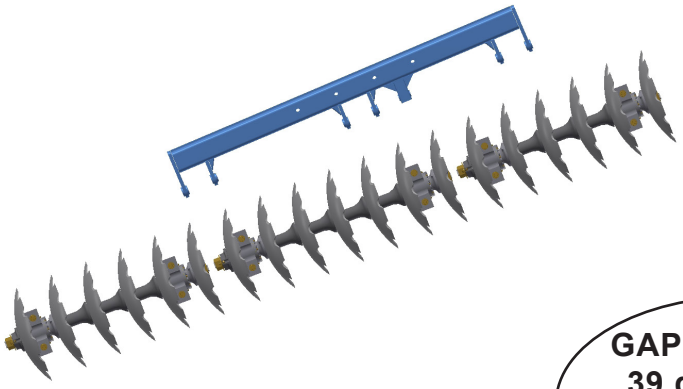
Small disc



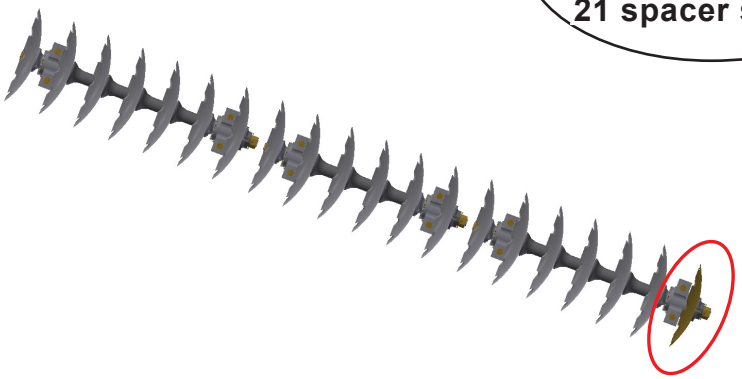
GAPCR-HD 8013
37 disc blades
12 DM bearings
19 spacer spools



Assembly of bearings and spacer spools



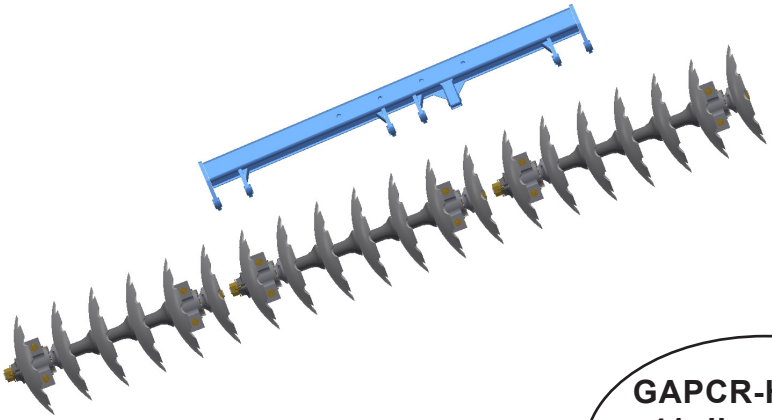
GAPCR-HD 8013
39 disc blades
12 DM bearings
21 spacer spools



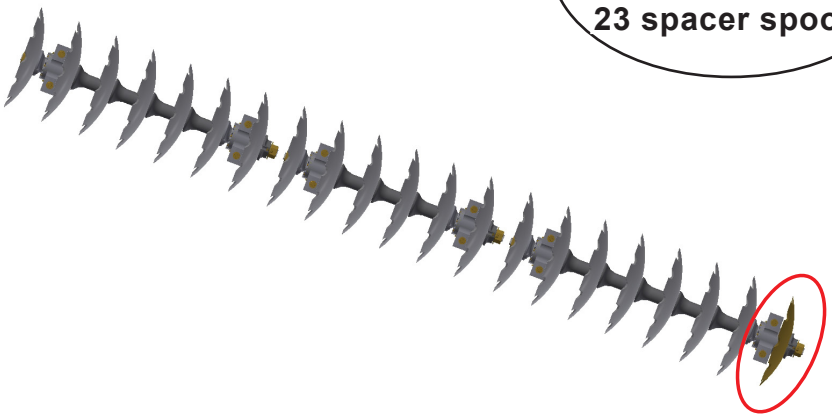
Bearing

Spacer spool

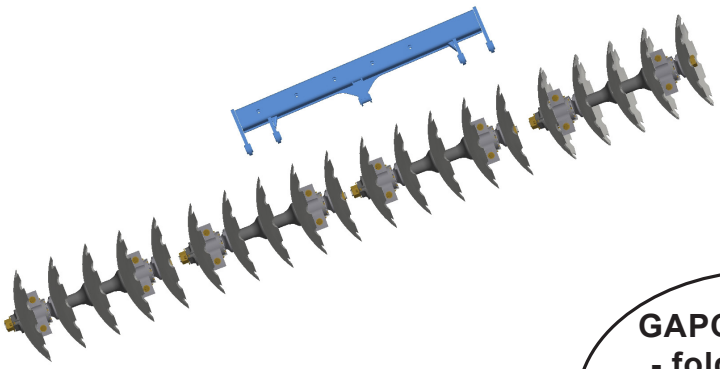
Small disc



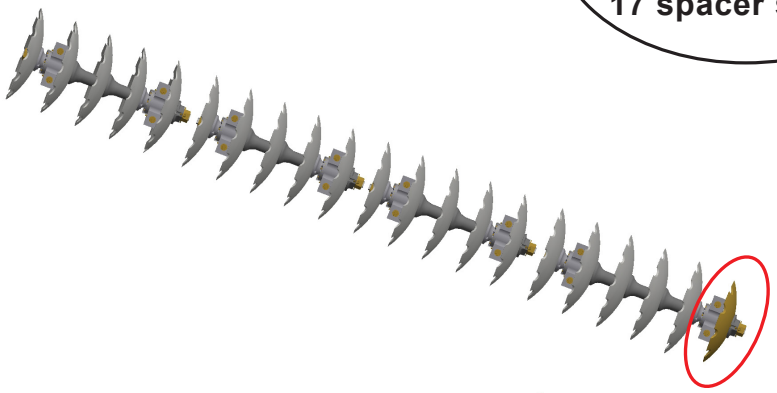
GAPCR-HD 8013
41 disc blades
12 DM bearings
23 spacer spools



Assembly of bearings and spacer spools



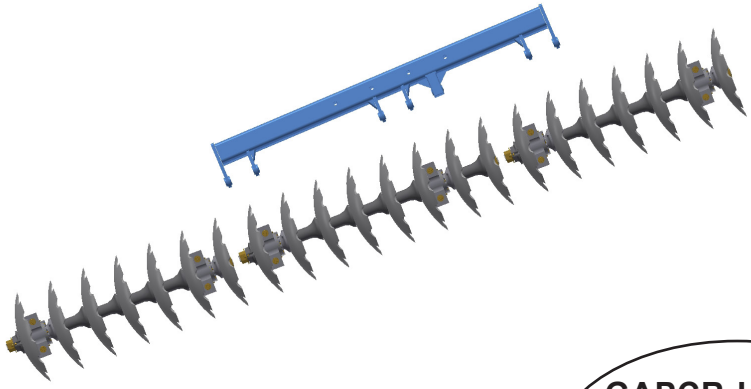
GAPCR-HD 8013
- folding wings
41 disc blades
16 DM bearings
17 spacer spools



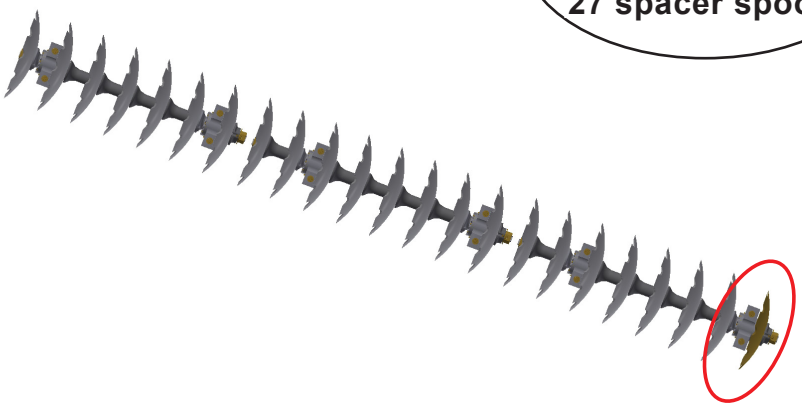
Bearing

Spacer spool

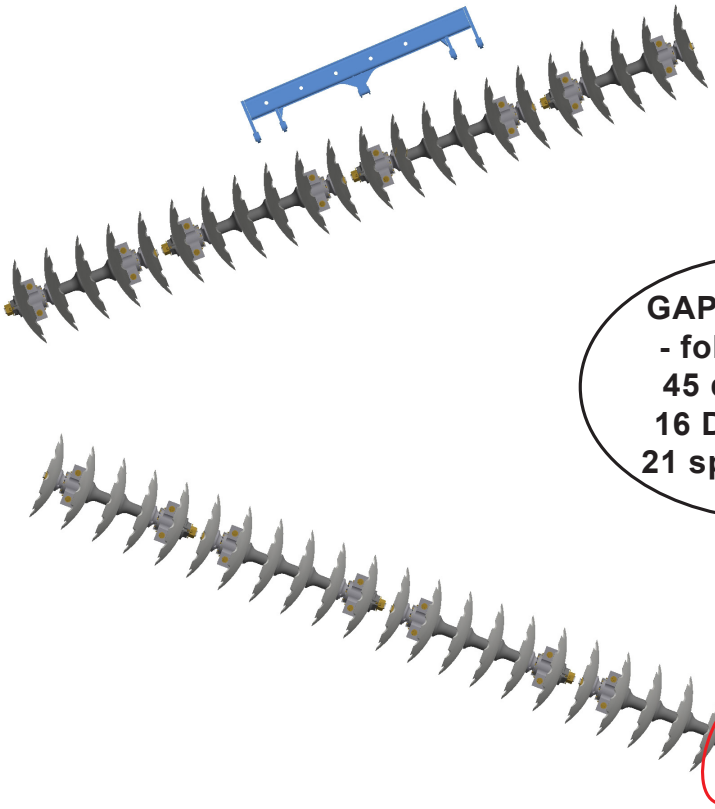
Small disc



GAPCR-HD 8013
45 disc blades
12 DM bearings
27 spacer spools



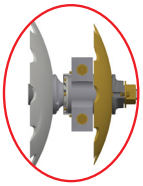
Assembly of bearings and spacer spools



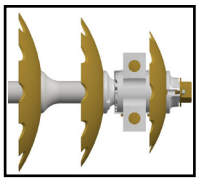
GAPCR-HD 8013
- folding wings
45 disc blades
16 DM bearings
21 spacer spools

Bearing

Spacer spool



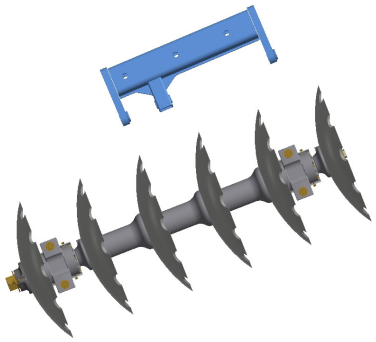
Small disc



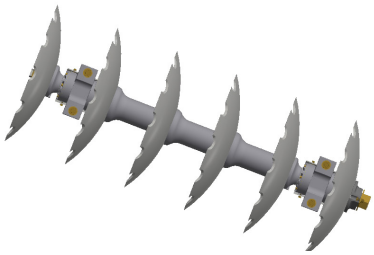
Tapered discs

GAPCR-HD 8013
- folding wings
49 disc blades
16 DM bearings
25 spacer spools

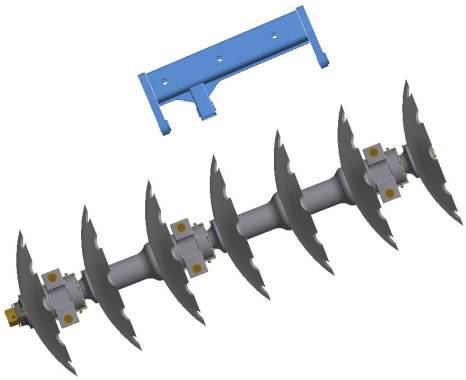
Assembly of bearings and spacer spools



GASPCR-HD 9017 &
GASPCR-EHD 10020
12 disc blades
4 DM / DMO bearings
6 spacer spools

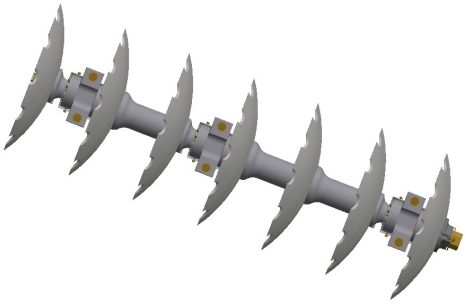


Bearing

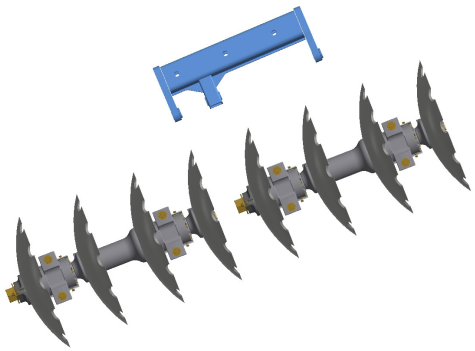


Spacer spool

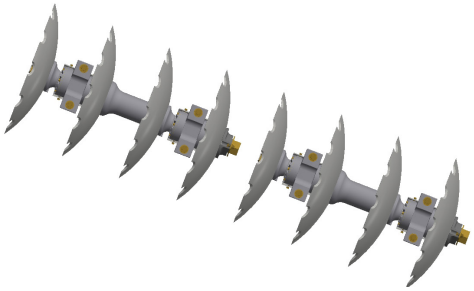
GASPCR-HD 9017 &
GASPCR-EHD 10020
14 disc blades
6 DM / DMO bearings
6 spacer spools

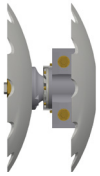


Assembly of bearings and spacer spools



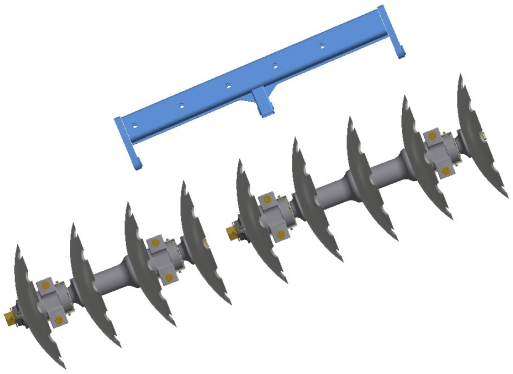
GASPCR-HD 9017 &
GASPCR-EHD 10020
16 disc blades
8 DM / DMO bearings
4 spacer spools



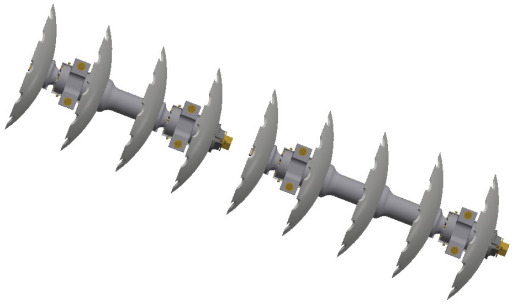


Bearing

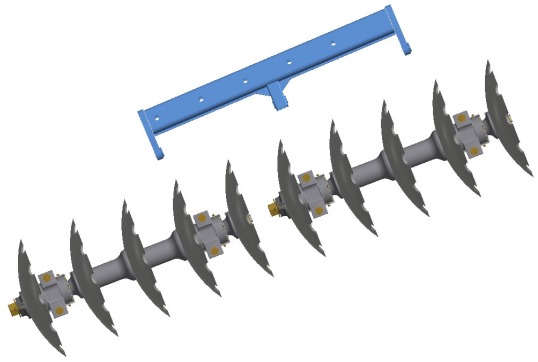
Spacer spool



GASPCR-HD 9017 &
GASPCR-EHD 10020
18 disc blades
8 DM / DMO bearings
6 spacer spools



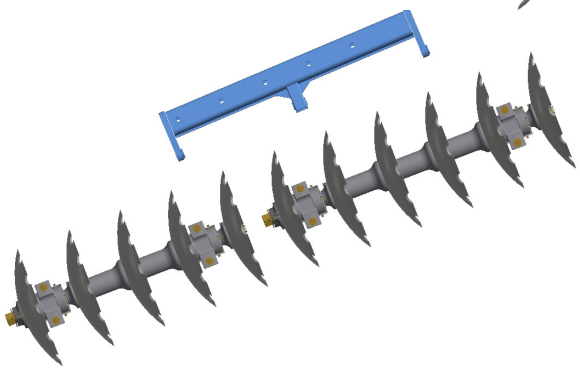
Assembly of bearings and spacer spools



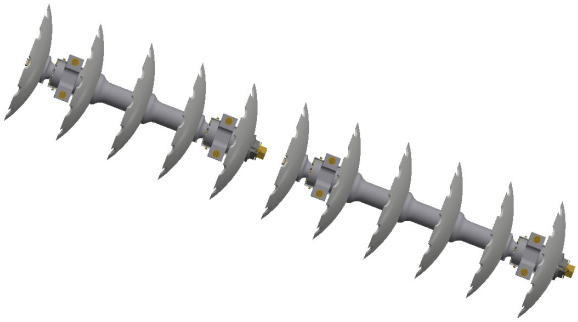
GASPCR-HD 9017 &
GASPCR-EHD 10020
20 disc blades
8 DM / DMO bearings
8 spacer spools

Bearing

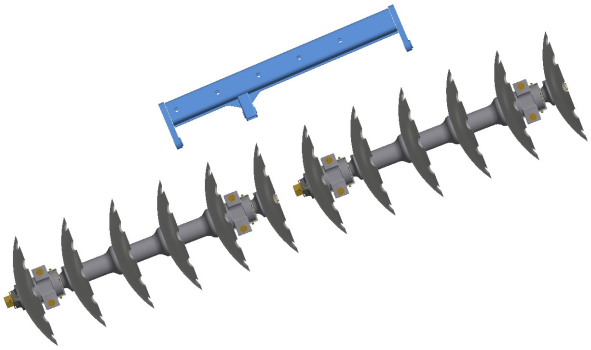
Spacer spool



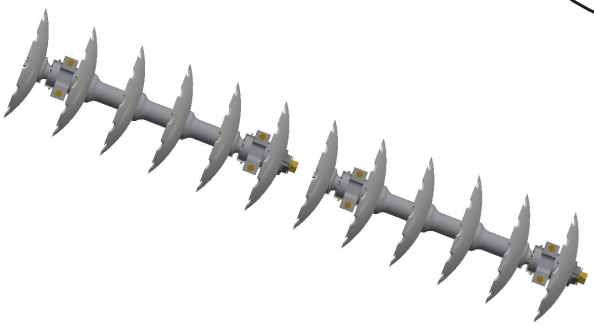
GASPCR-HD 9017 &
GASPCR-EHD 10020
22 disc blades
8 DM / DMO bearings
10 spacer spools



Assembly of bearings and spacer spools

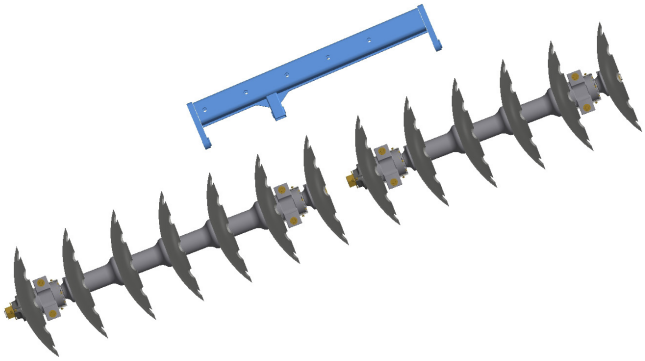


GASPCR-HD 9017 &
GASPCR-EHD 10020
24 disc blades
8 DM / DMO bearings
12 spacer spools

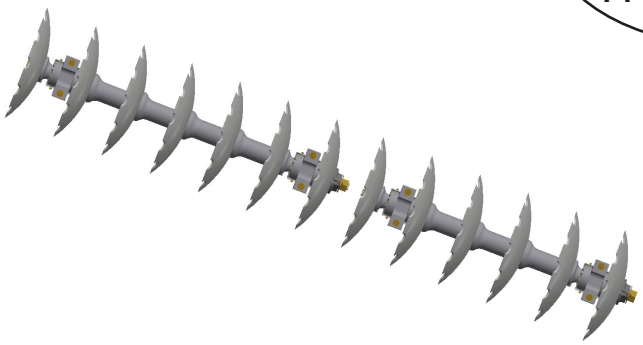


Bearing

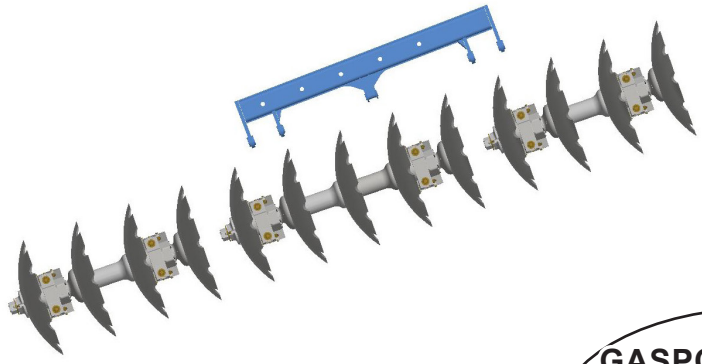
Spacer spool



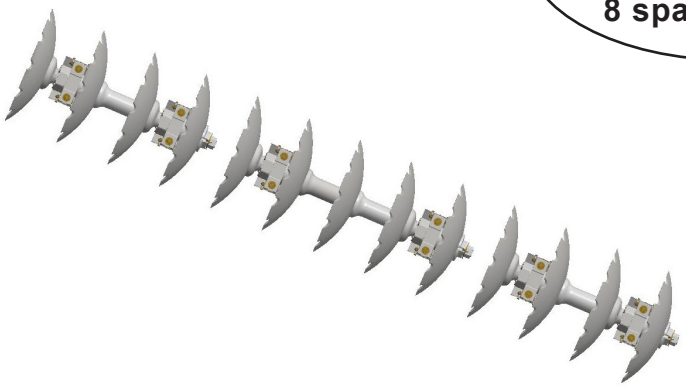
GASPCR-HD 9017
26 disc blades
8 DM bearings
14 spacer spools



Assembly of bearings and spacer spools

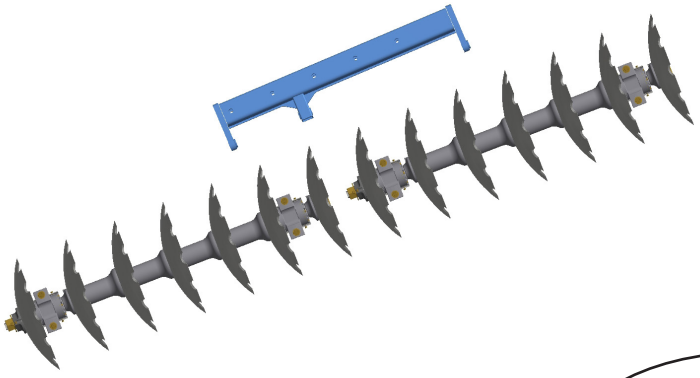


GASPCR-EHD 10020
26 disc blades
12 DMO bearings
8 spacer spools

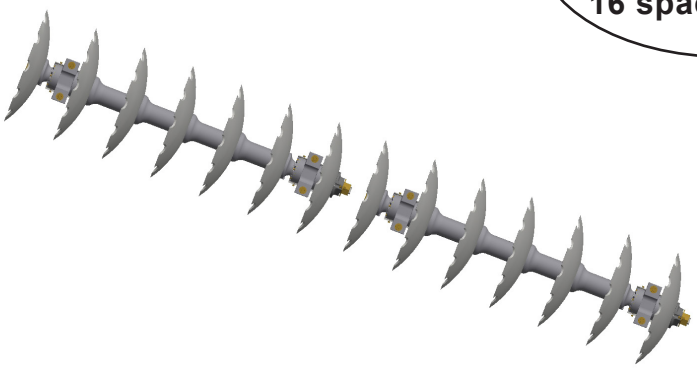


Bearing

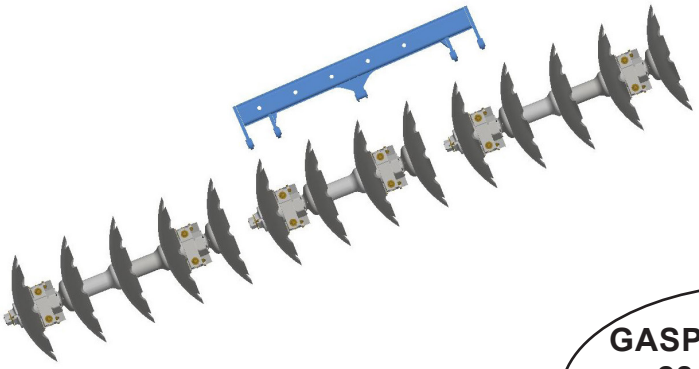
Spacer spool



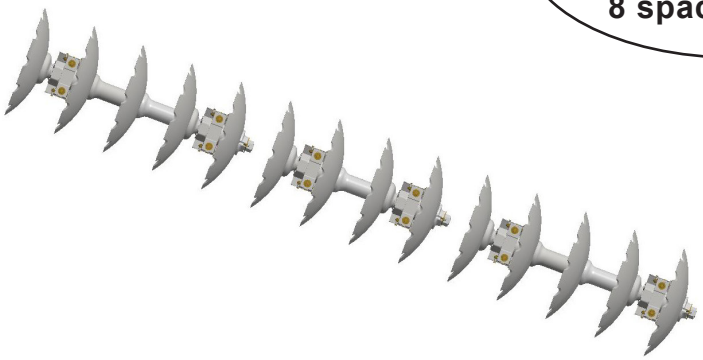
GASPCR-HD 9017
28 disc blades
8 DM bearings
16 spacer spools



Assembly of bearings and spacer spools

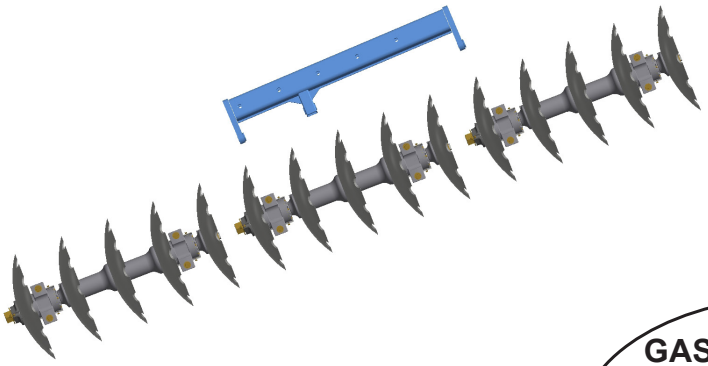


GASPCR-EHD 10020
28 disc blades
12 DMO bearings
8 spacer spools

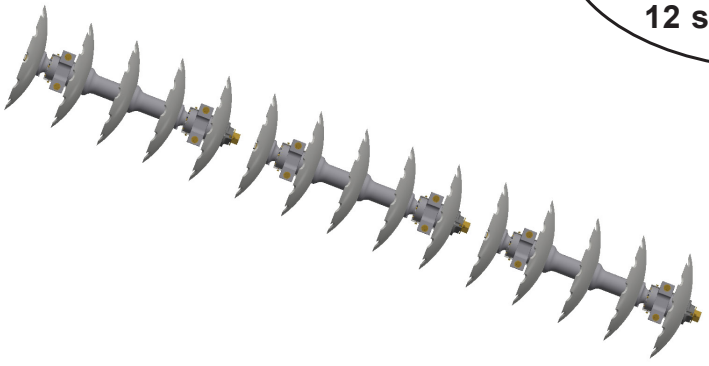


Bearing

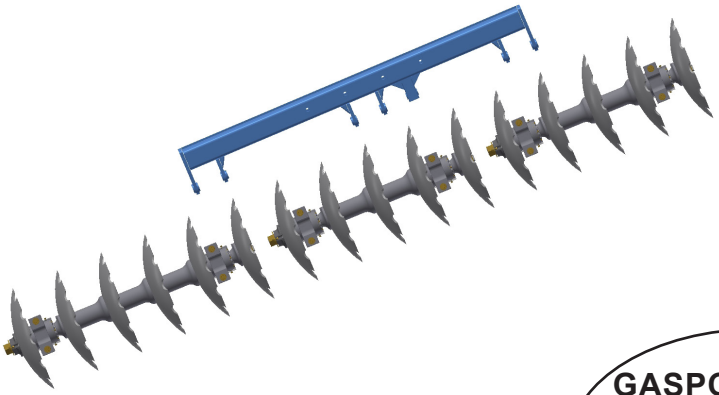
Spacer spool



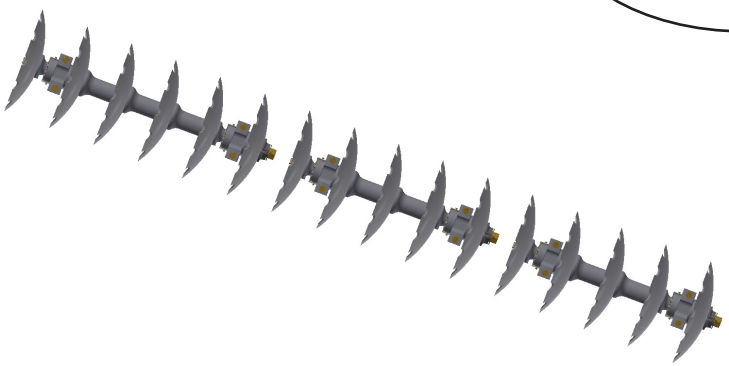
GASPCR-HD 9017 &
GASPCR-EHD 10020
30 disc blades
12 DM / DMO bearings
12 spacer spools



Assembly of bearings and spacer spools

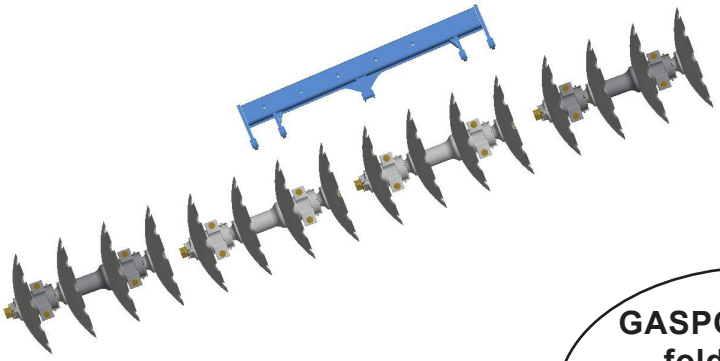


GASPCR-HD 9017
32 disc blades
12 DM bearings
14 spacer spools

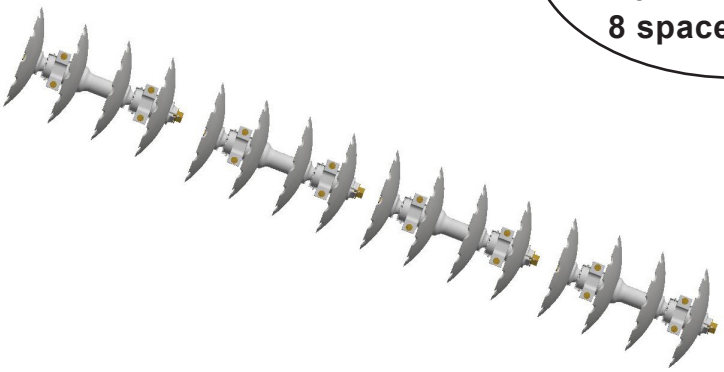


Bearing

Spacer spool

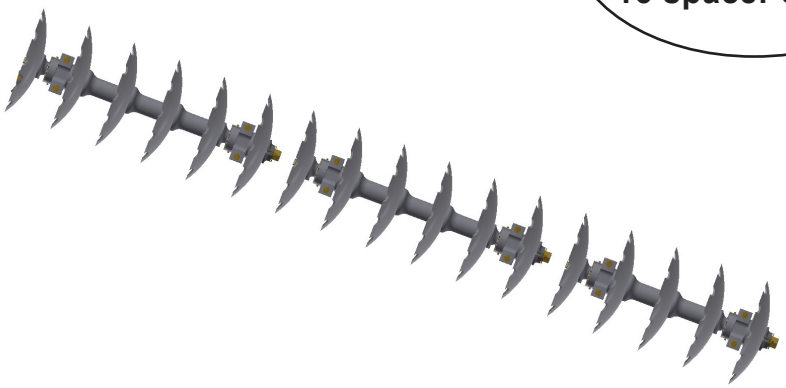


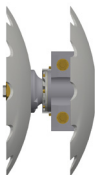
GASPCR-HD 9017
- folding wings
32 disc blades
16 DM bearings
8 spacer spools



Assembly of bearings and spacer spools

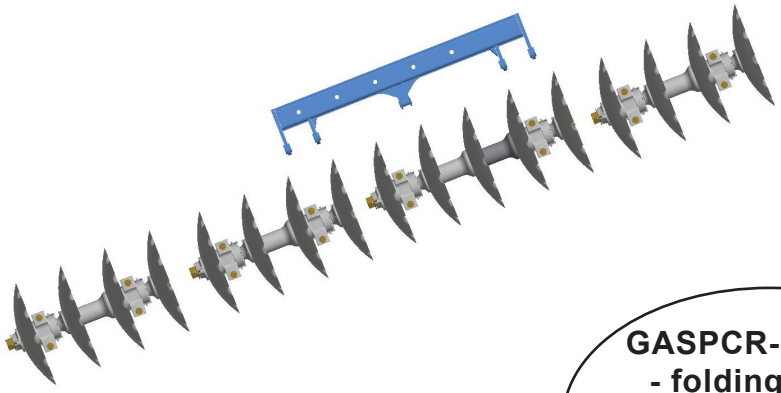
GASPCR-HD 9017
34 disc blades
12 DM bearings
16 spacer spools



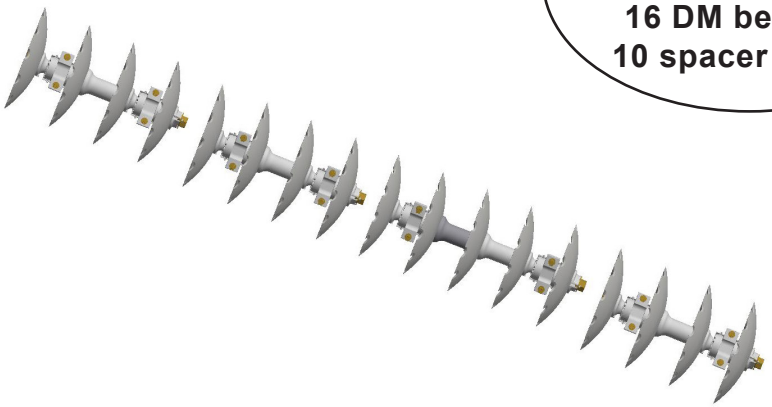


Bearing

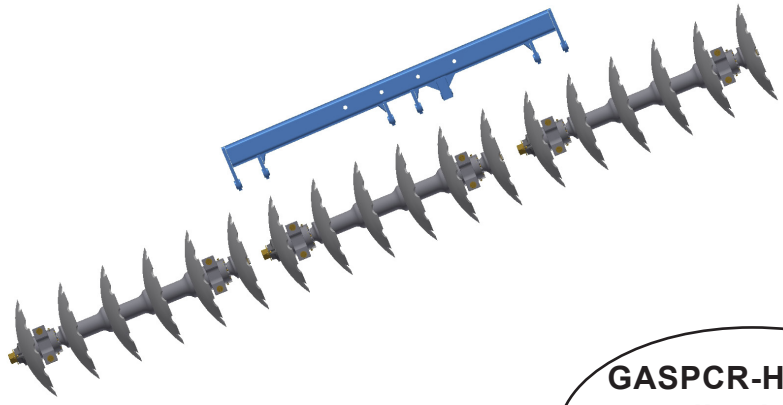
Spacer spool



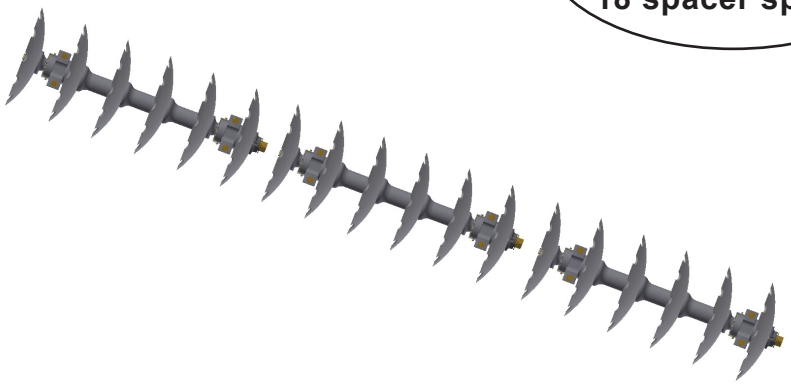
GASPCR-HD 9017
- folding wings
34 disc blades
16 DM bearings
10 spacer spools



Assembly of bearings and spacer spools

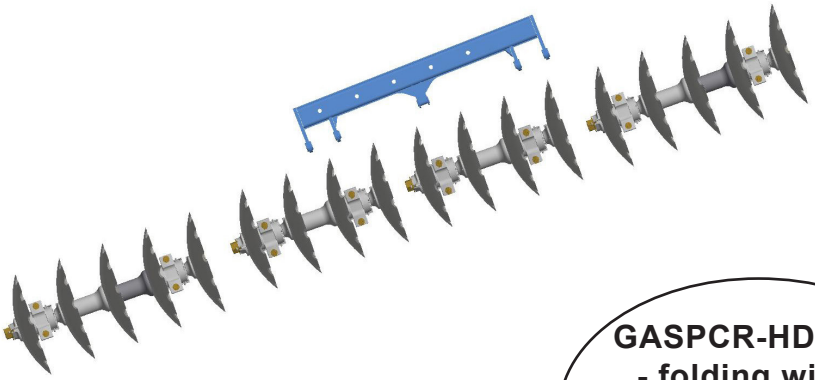


GASPCR-HD 9017
36 disc blades
12 DM bearings
18 spacer spools

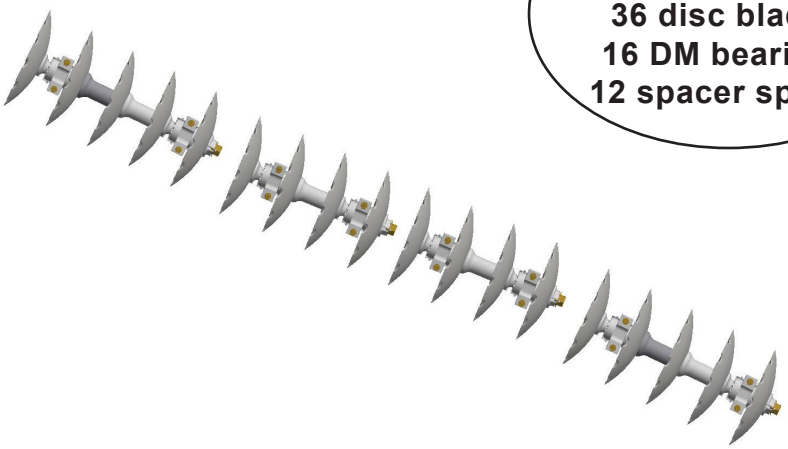


Bearing

Spacer spool



GASPCR-HD 9017
- folding wings
36 disc blades
16 DM bearings
12 spacer spools



Disc gangs assembly sequence

1. Place the outer lock (A) along with the axle (B).
2. Tight the nut (C) until it passes 5 mm from the axle face.
3. Place a disc blade (D), bearings (E) and spacer spools (F), following the instructions on the previous pages.
4. Place the inner lock (G) and nut (C1).
5. Place the bolt (H) that fasten the lock nut (I), along with a spring washer and nut (only on the outer side of the gangs).
6. Use the wrenches from the 'set of wrenches' page and tighten the gangs:

a) Place one of the wrenches on the outer side of the gangs (locked side) and support it on the soil (as shown on the next page).

b) Use the other wrench on the inner side and tighten the gangs until it reaches the maximum torque.

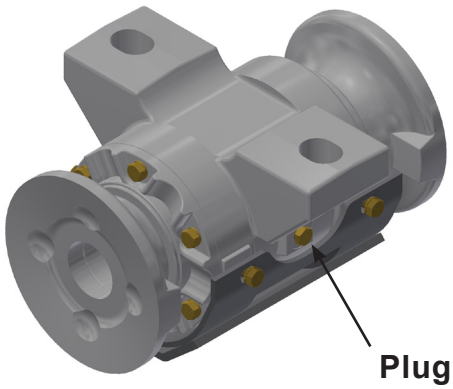
c) To tight the gangs, keep them underpinned using a wood or similar object (as shown on the next page).

7. Lastly, place the bolt (H1) and position the lock nut (I1), fastening it using a spring washer and nut.

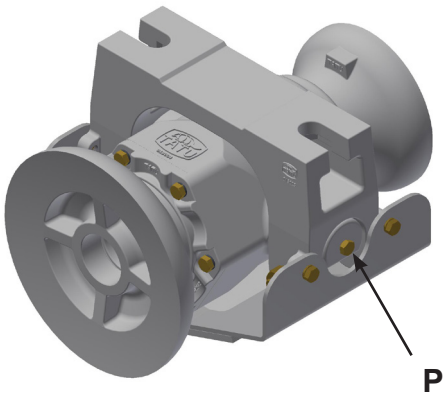
IMPORTANT

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

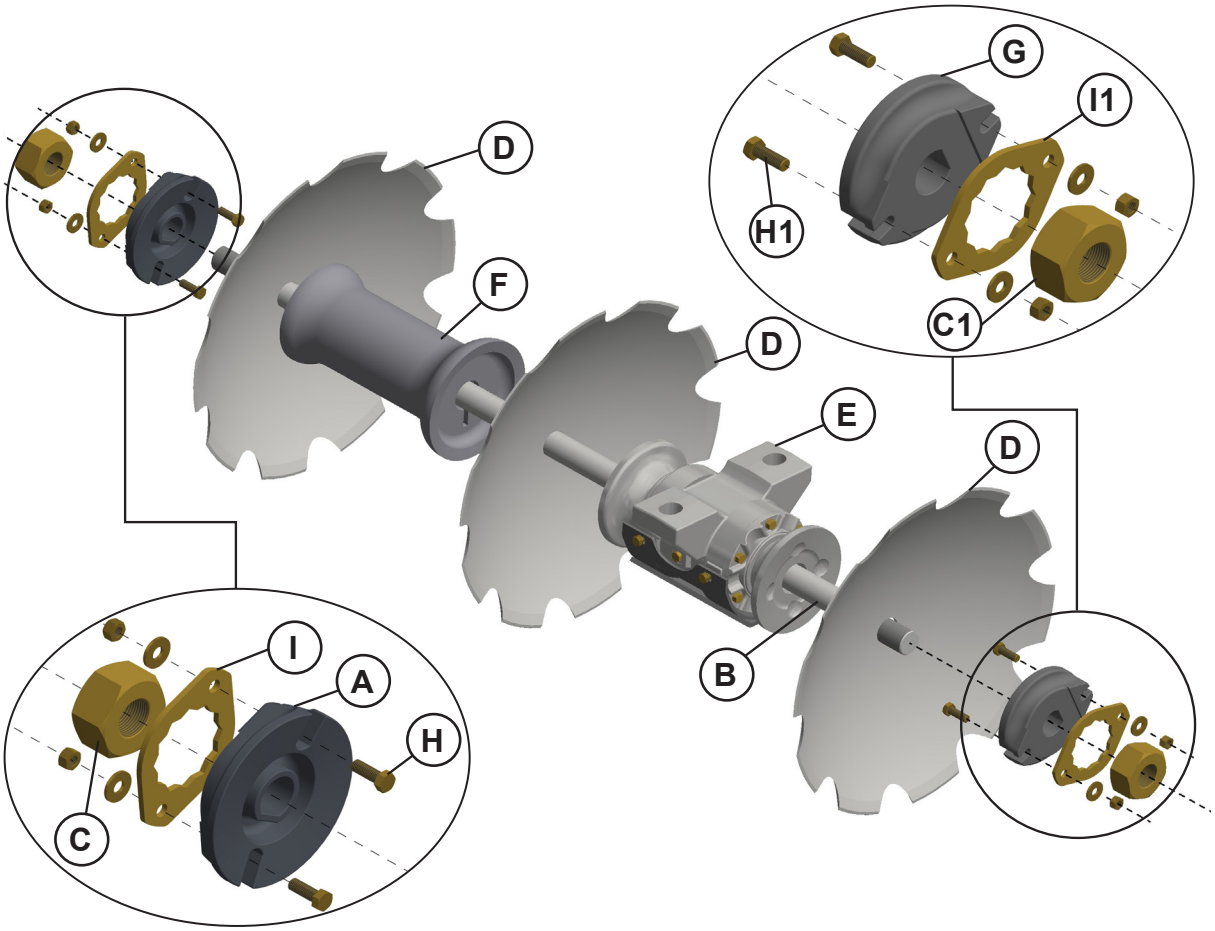
DM bearing



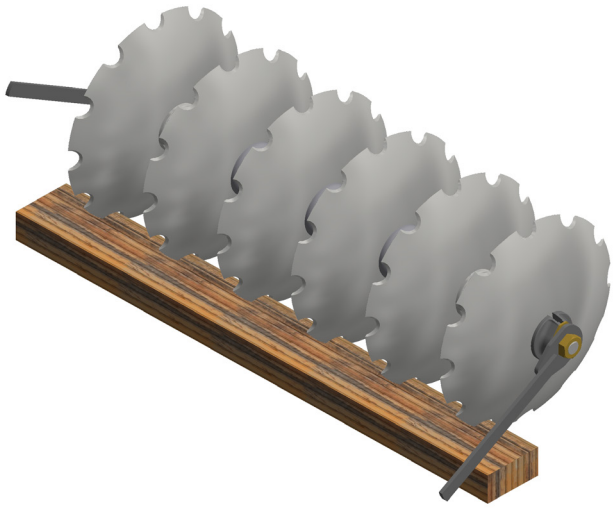
DMO bearing



Disc gangs assembly sequence



Torque table	
Axle diameter	Ft. - lbs.
1.1/4"	1840
1.1/2"	2670
1.5/8"	2890
1.3/4"	3020
2"	3150
2.1/8"	3300
2.1/2"	3500
2.3/4"	3750
3"	4000



NOTE

- The axle (B) threads must be cleaned and greased before their assembly. Check the 'torque table' page on the 'important data' section.

Furrow filler assembly sequence

1. Place the outer lock (A) along with the axle (B).
2. Tighten the nut (C) passing 5 mm from the axle face.
3. Place the disc blades (D), bearings (E) and spacer spools (F), following the illustration on the next page.
4. Place the inner lock (G) and nut (C1).
5. Place the bolt (H) that fasten the lock nut (I), along with spring washer and nut (only on the outer side of the gangs).
6. Right after, underpin the disc blades to prevent their movement and tighten as shown on the next page, using the wrenches from the 'set of wrenches' page.
7. On the outer side of the gangs, couple the spacer spool (J) to the outer lock (A) using bolts (H1) and fastening with spring washers and nuts.
8. Fasten the furrow filler (K) to the spacer spool (J) and place the outer lock (L) on the spacer spool axle.
9. Then, fasten the nut (C2) to the spacer spool (J) axle.
10. Use the wrenches from the 'set of wrenches' page and tighten the gangs as follows:

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

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

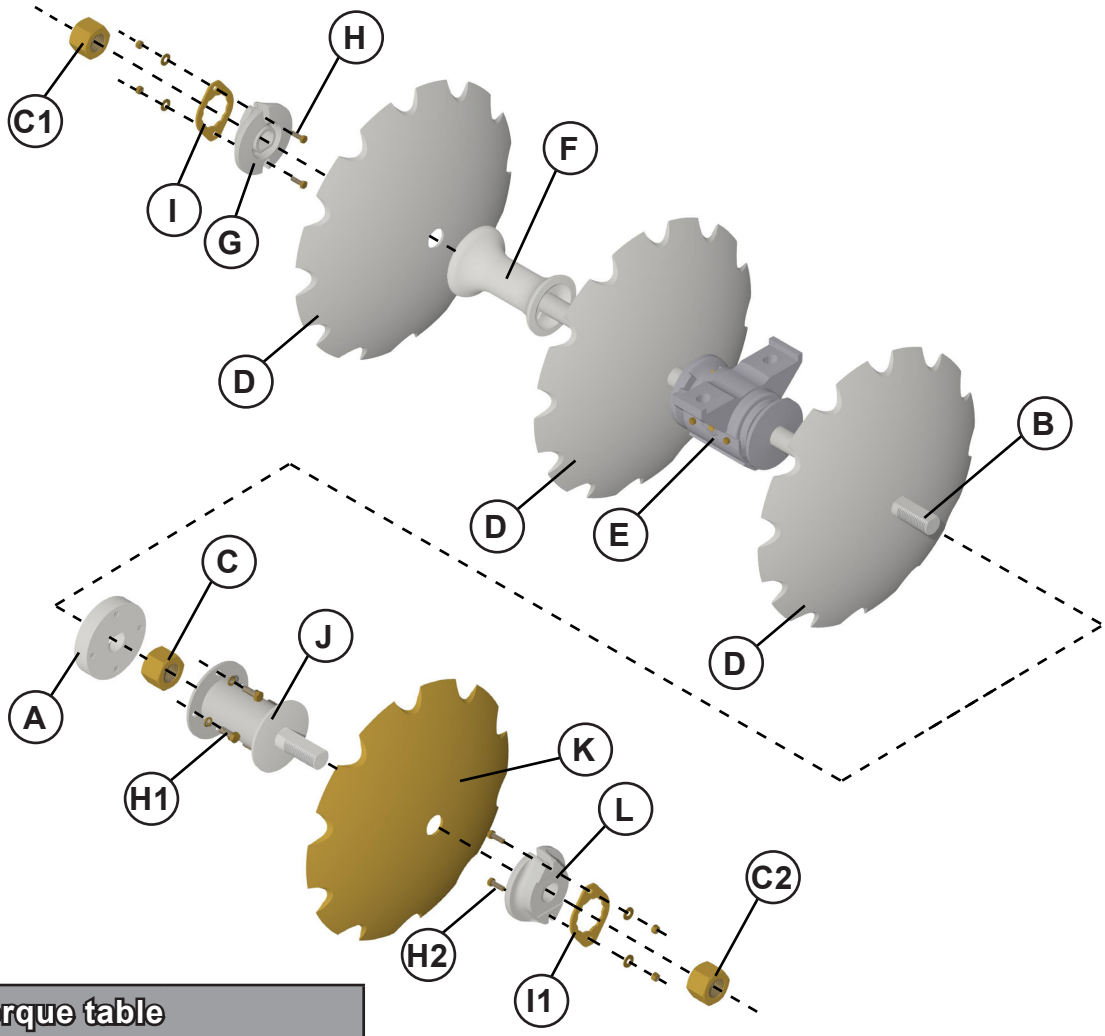
c) To tighten the gangs, underpin them with a piece of wood or another object to prevent their movement. (As shown on the next page).

11. Lastly, place the bolt (H2) and position the lock nut (I1), fastening with spring washer and nut.

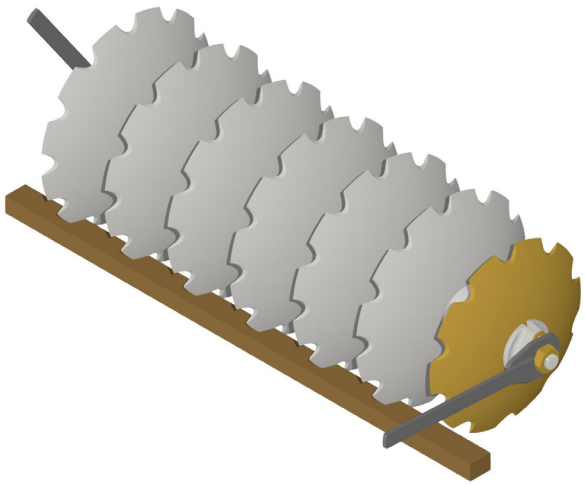
IMPORTANT

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

Furrow filler assembly sequence



Torque table	
Axle diameter	Ft. - lbs.
1.1/4"	1840
1.1/2"	2670
1.5/8"	2890
1.3/4"	3020
2"	3150
2.1/8"	3300
2.1/2"	3500
2.3/4"	3750
3"	4000



NOTE

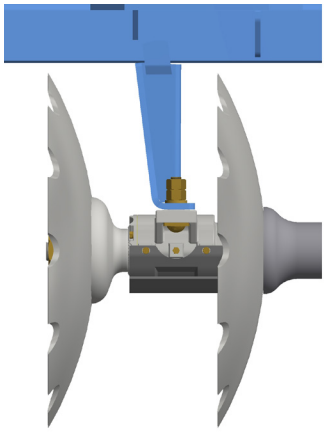
- The axle (B) threads must be cleaned and greased before their assembly. Check the 'torque table' page on the 'important data' section.

Assembly of the disc gangs on the frame

IMPORTANT

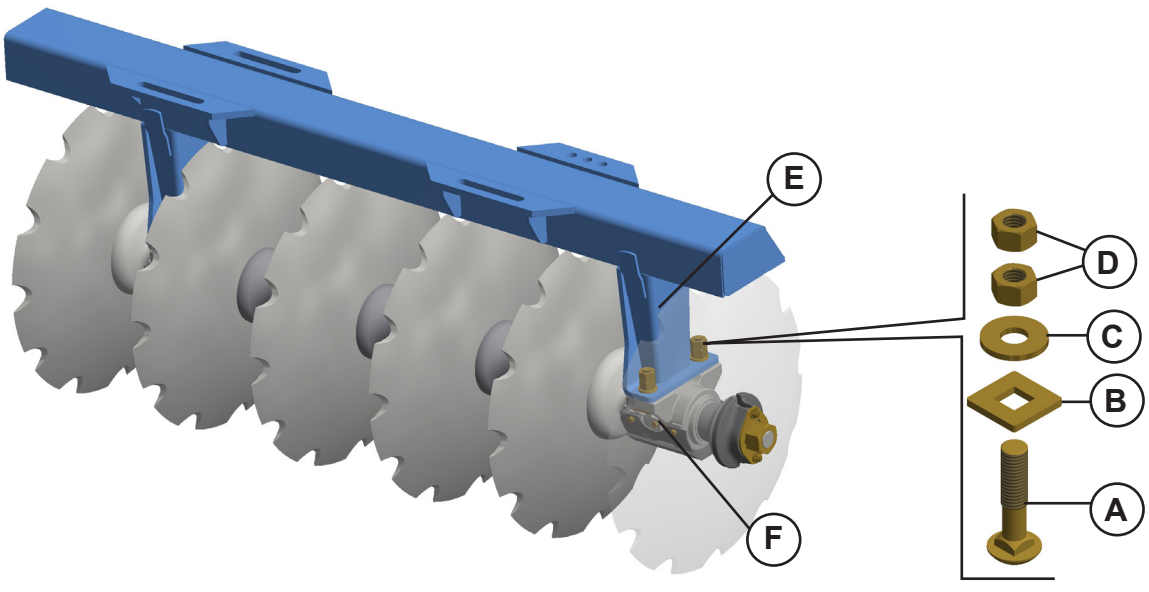
- The rear gang turns earth to the left and the front gang turns earth to the right.

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



For the DM bearings:

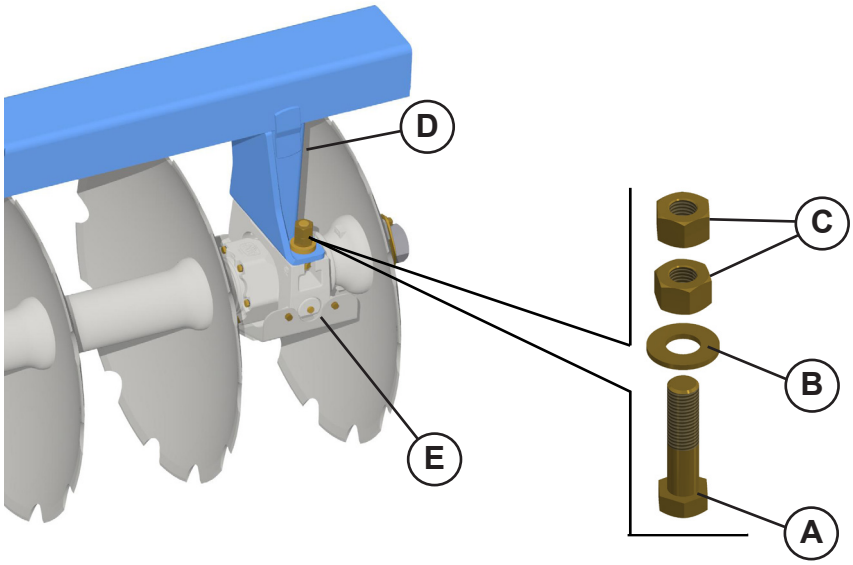
1. Place the bolt (A) with square washer (B) and pass it through the bearing housing (F) and through the bearing hanger hole (E). On the upper part, place flat washer (C), nut and counternut (D).
2. Repeat this operation for the other bearings.



Assembly of the disc gangs on the frame

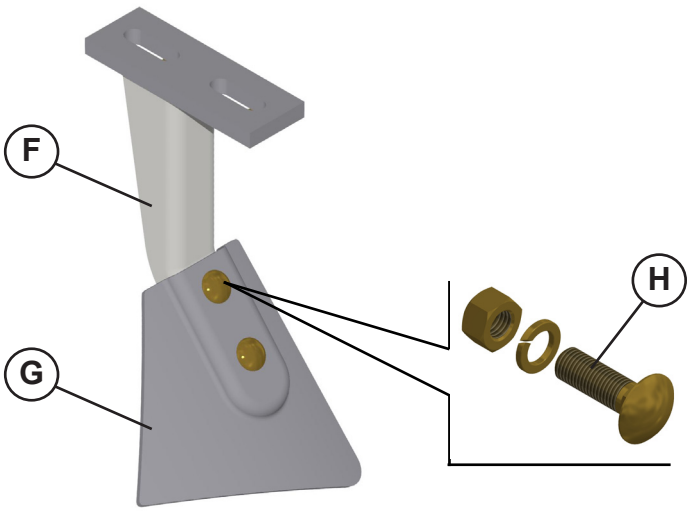
For the DMO bearings:

1. Place the bolt (A), passing it through the bearing housing (E) and through the bearing hanger (D) hole; on the upper part, place a flat washer (B), nut and counternut (C).



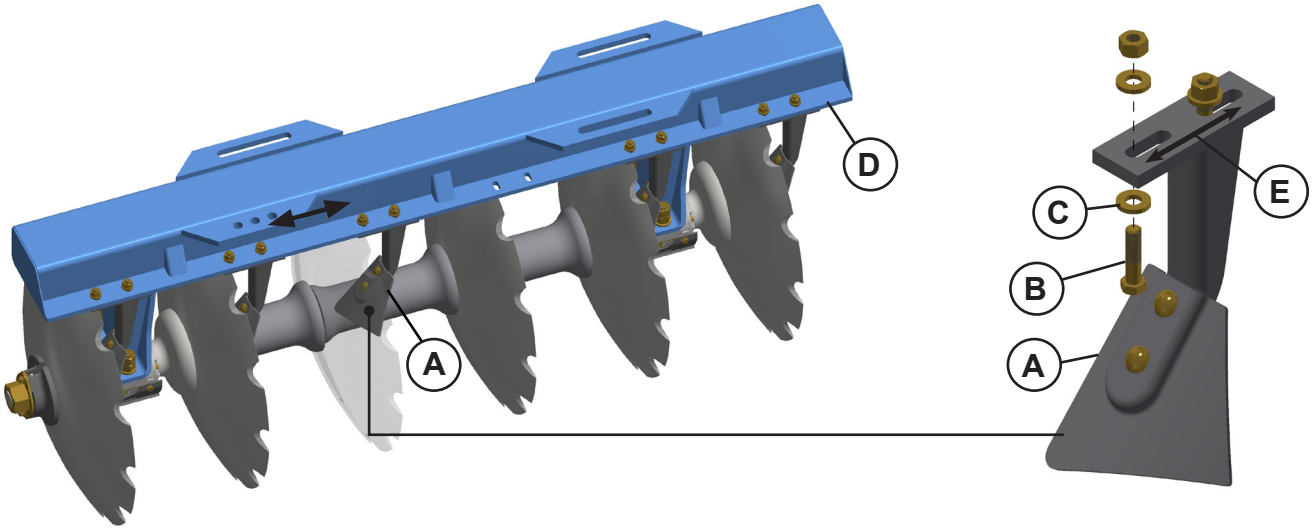
Scrapers assembly

1. Assemble the scraper (G) on the scraper support (F) using bolts (H), spring washers and nuts.



Scrapers assembly

1. Note the fixing position of the scrapers being their end facing the concave side of the disc blades.
2. Assemble the scrapers (A) using bolts (B) and flat washer (C). The bolt (B) is placed underneath the fixation plate (D); on the upper part, place spring washer and nut.



NOTE

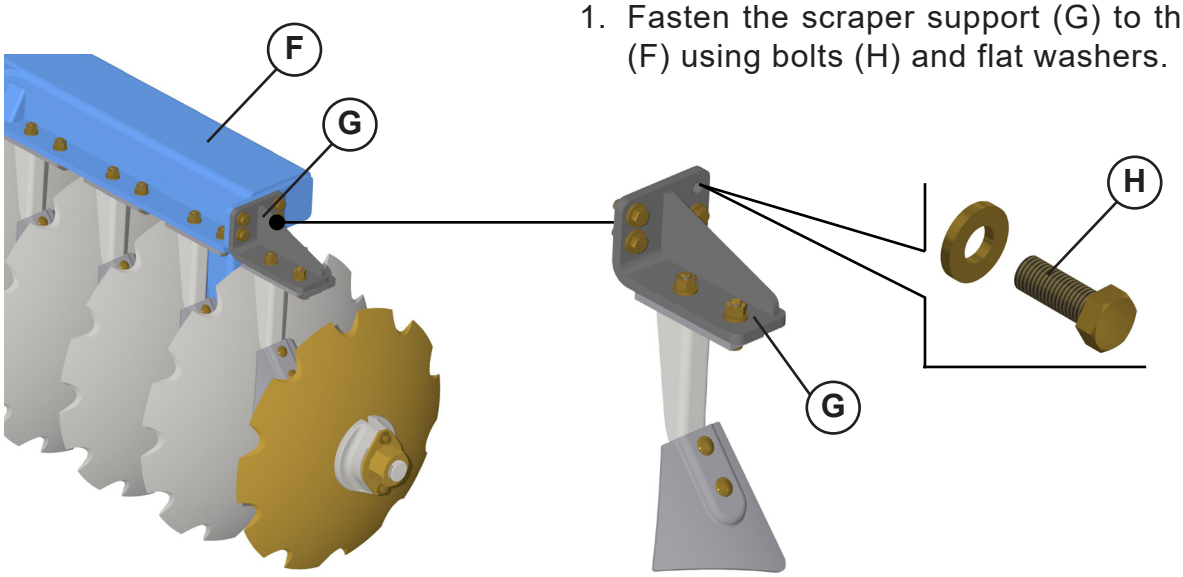
- The scrapers feature an adjustment to approach or distance them from the disc blades, on a range from 5 to 10 mm.

Scraper support assembly

- GAPCR-HD 8013 with 24 disc blades

For the disk harrow models which the furrow filler has an adjustment to be out of the frame:

1. Fasten the scraper support (G) to the frame (F) using bolts (H) and flat washers.



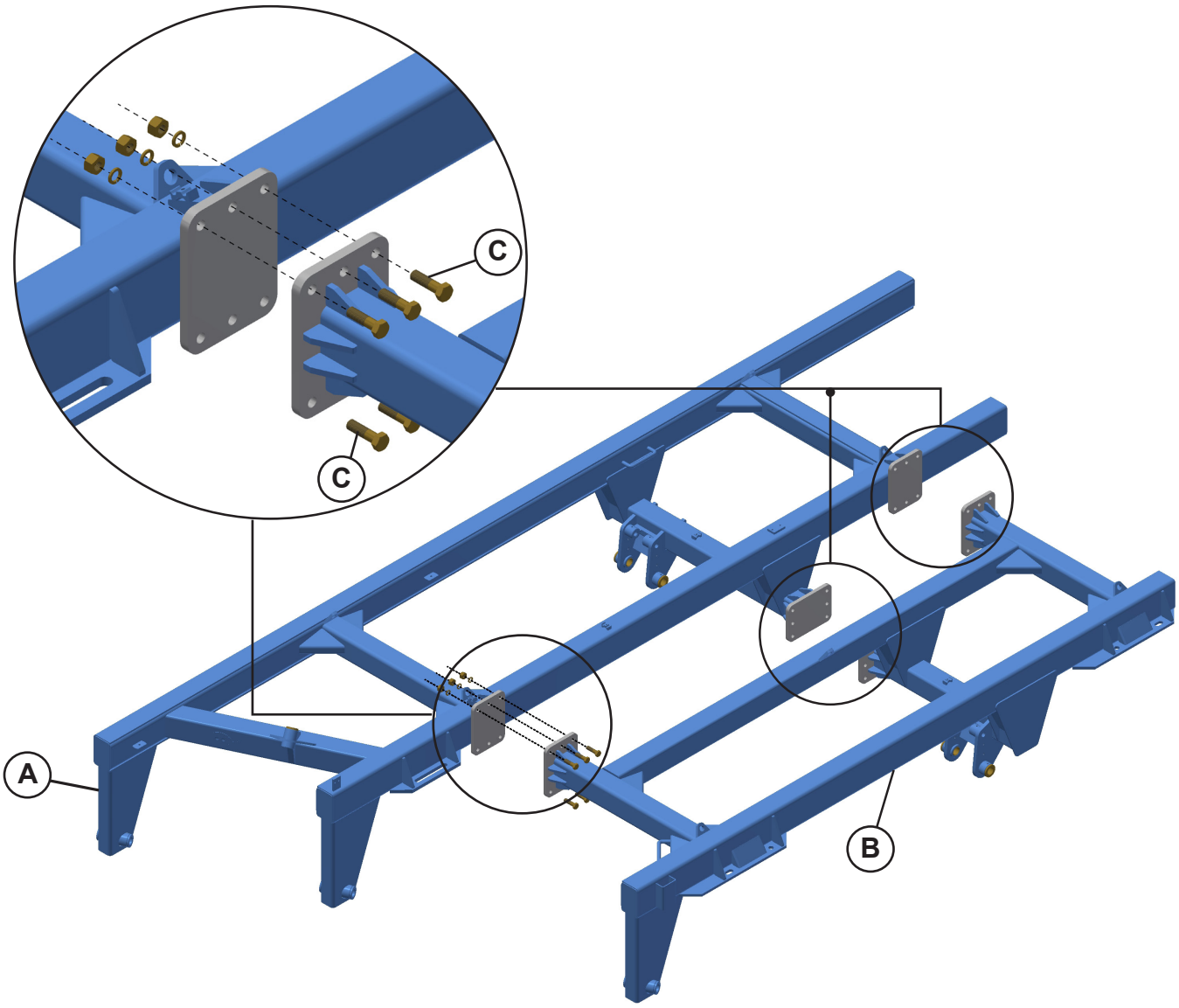
Frames assembly

- GAPCR-HD 8013 - 39 to 45 disc blades

- GASPCR-HD 9017 - 32 to 36 disc blades

To assemble the right (A) and left (B) frames:

1. Join the frames and fasten them using bolts (C), spring washers and nuts, as shown on the illustration.

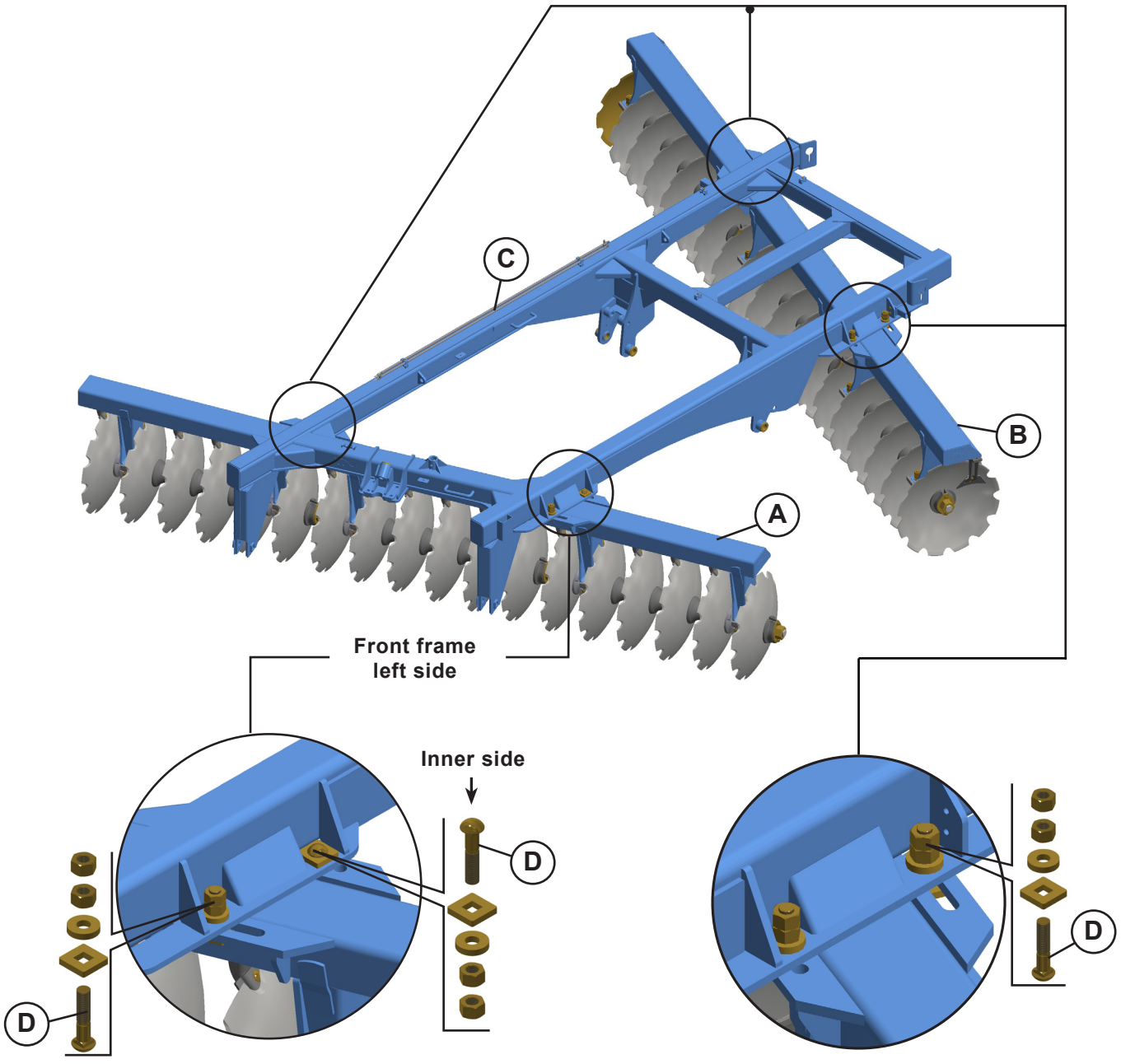


Disc gang assembly to the frame

1. Fasten the front disc gang (A) and the rear one (B) to the frame (C) using bolts (D), washers and nuts.

NOTE

- Every bolt is placed from the bottom to the top, except the inner bolt on the left side of the front frame, which must be placed from the top to the bottom.

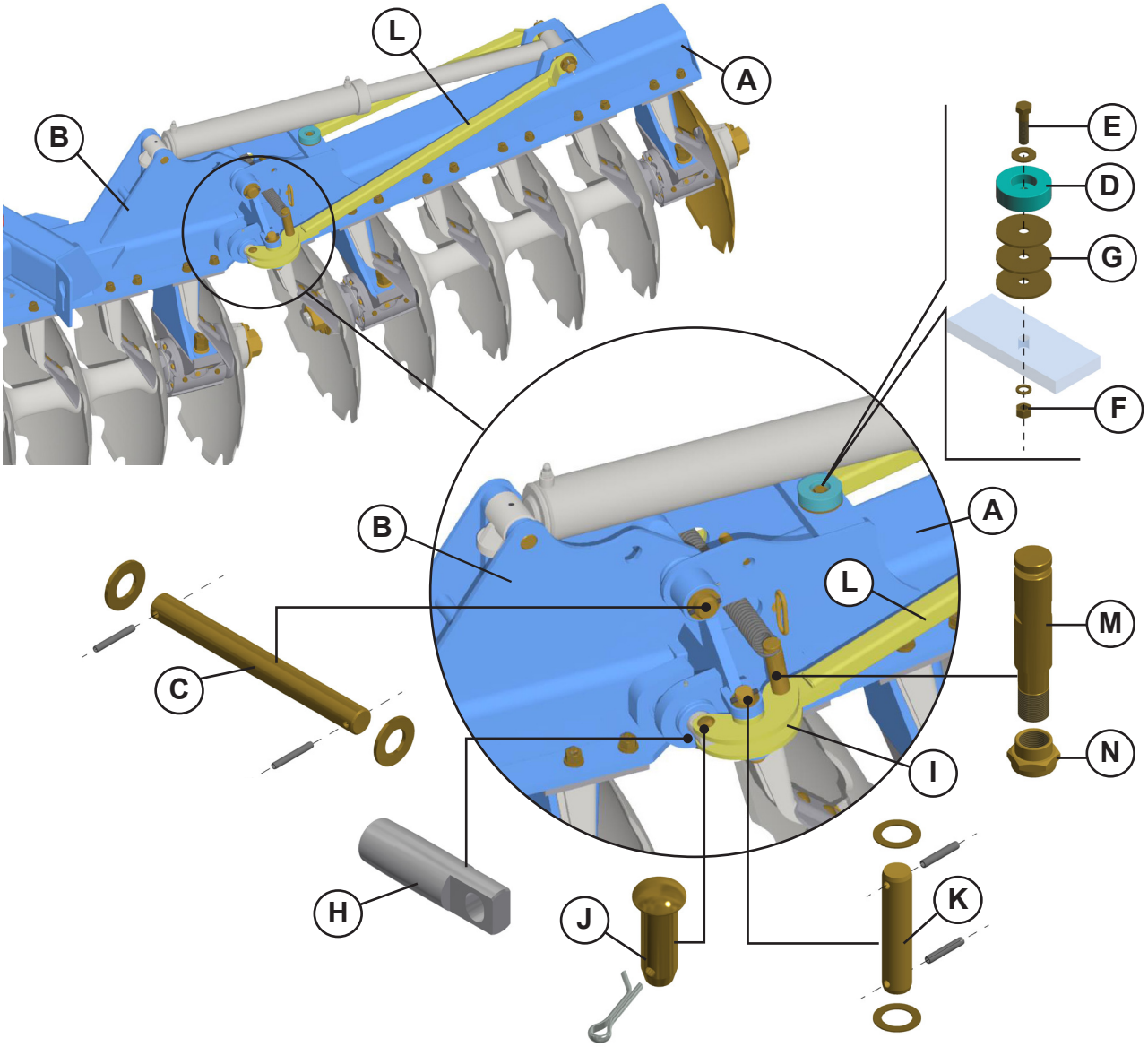


Folding wings assembly

- GAPCR-HD 8013 - 41 to 49 disc blades

- GASPCR-HD 9017 - 32 to 36 disc blades

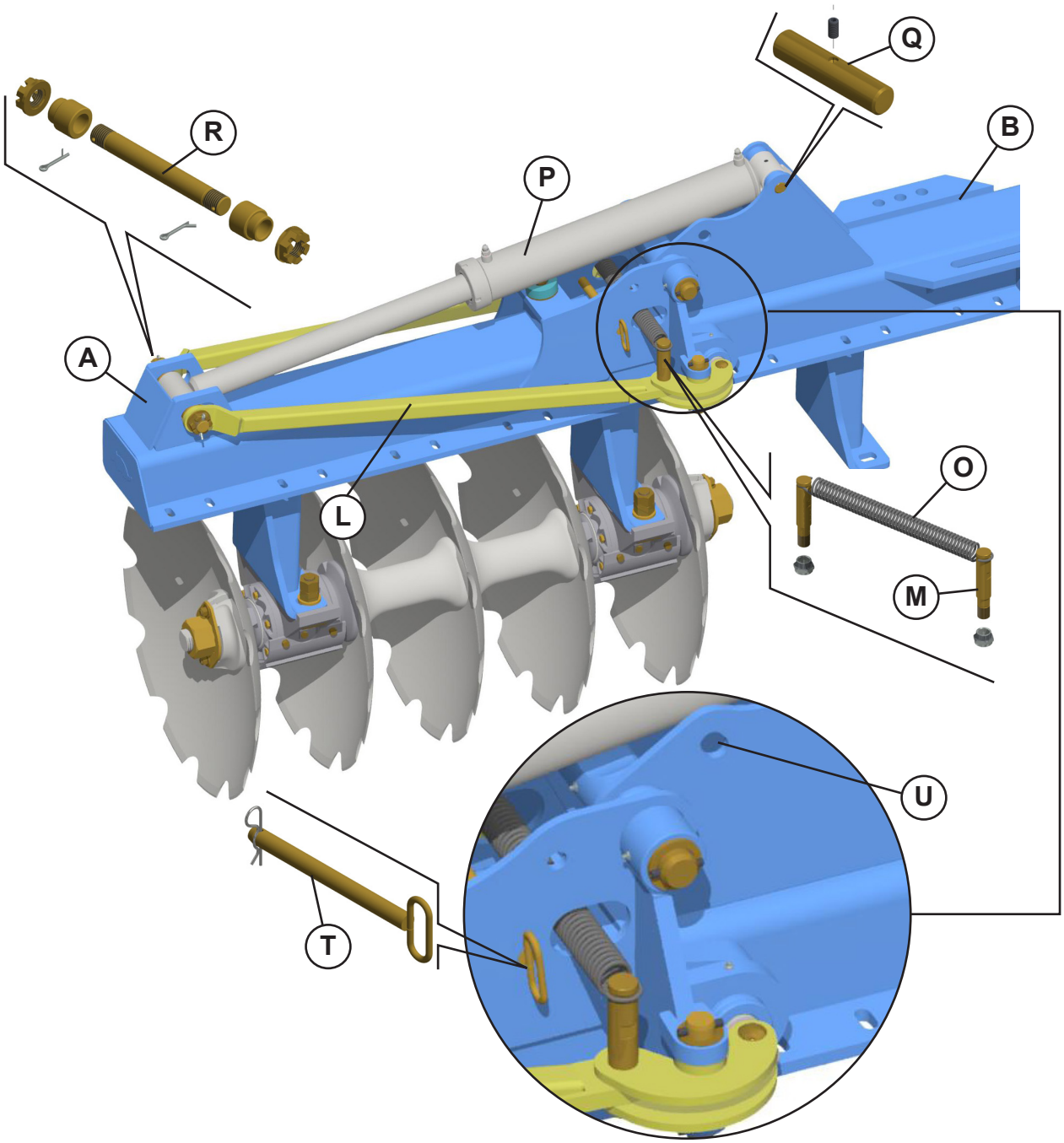
1. Approach the folding wing (A) to the central frame (B). Right after, fasten them using a pin (C), flat washers and elastic pins.
2. Assemble the stop (D) to the frame (A) using a bolt (E), flat washer, spring washer and nut (F). Use the spacing flat washers (G) to adjust the stop (D) height.



3. Fasten the axle lock (H) to the central frame (B) and lock it to the articulation lock (I) using a pin (J) and cotter pin.
4. Also, place the pin (K), flat washers and elastic pins to fasten the articulator (I) to the folding wing (A).
5. Lock the activation arm (L) to the articulator (I) using an axle lock, spring fastener (M) and nut (N).
6. Repeat the same procedure on the other side of the frame.

Folding wings assembly

7. Assemble the spring (O) passing it through the folding wing (A) and fastening on the axle locks and spring fastener (M).
8. Couple the hydraulic cylinder (P) to the central frame (B) using a pin (Q) and bolt. Fasten the cylinder rod end to the folding wing (A) using a pivot axle (R), bushings, castle nut and cotter pins; also lock the cylinder and the activation arms (L).

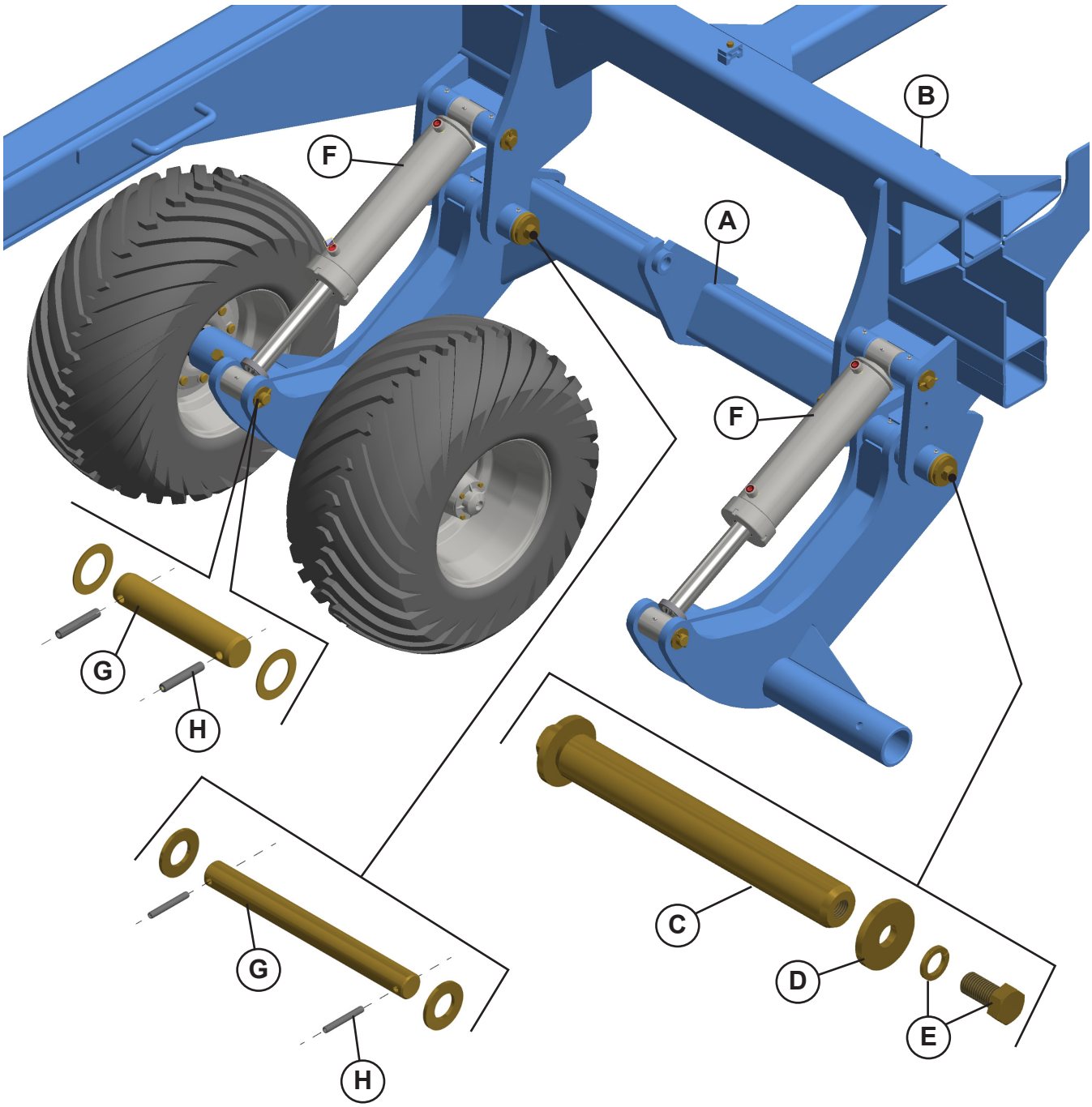


NOTE

- The lock pin (T) is used only for locking the folding wing (A) with the central frame (B) through the hole (U) to transport the equipment.

Wheel support assembly

1. Lock the wheel support (A) to the frame (B) using a junction axle (C), flat washers (D), spring washers and bolts (E).
2. Then, fasten the cylinders (F) to the wheel support (A) and lock using articulation axles (G), flat washer and elastic pins (H).



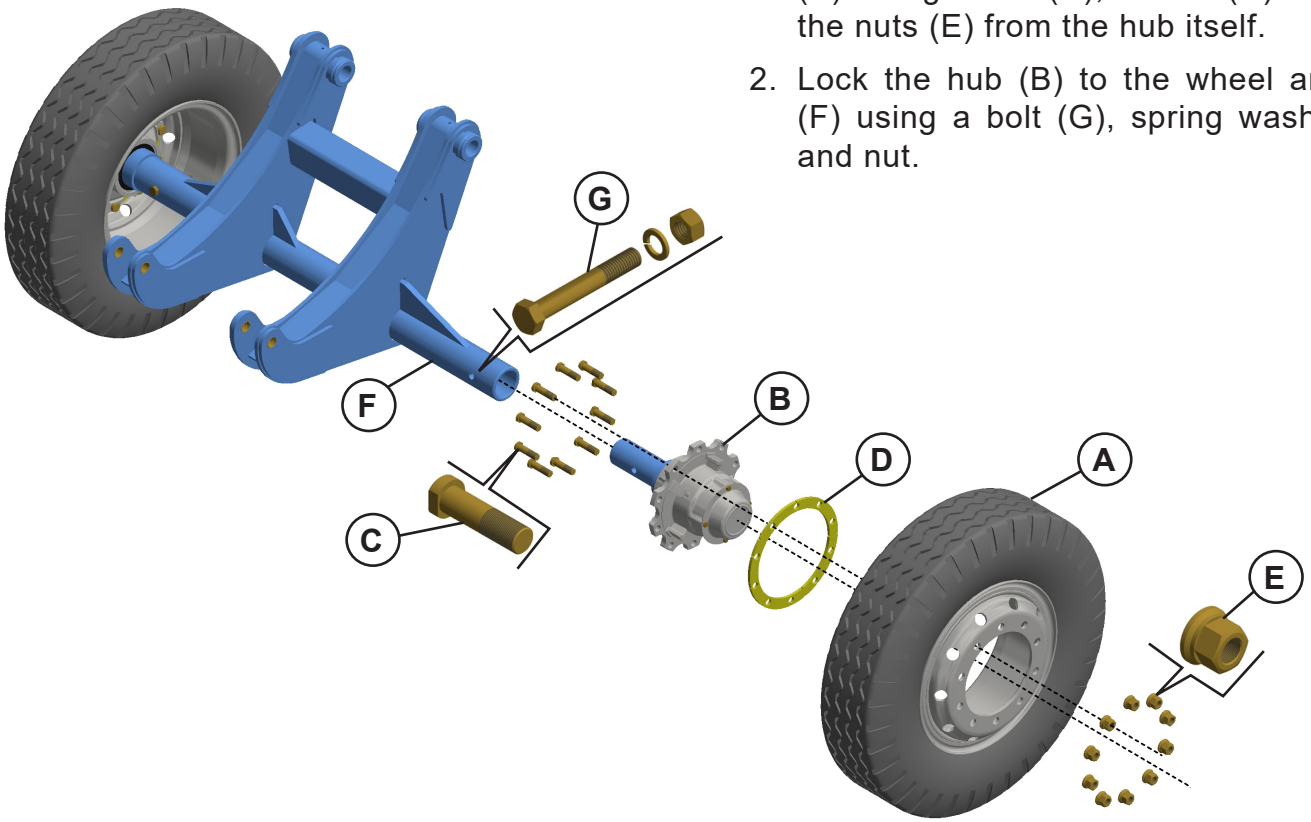
NOTE

- The cylinder rods must be facing the front part of the equipment and the hose connectors must be facing up.

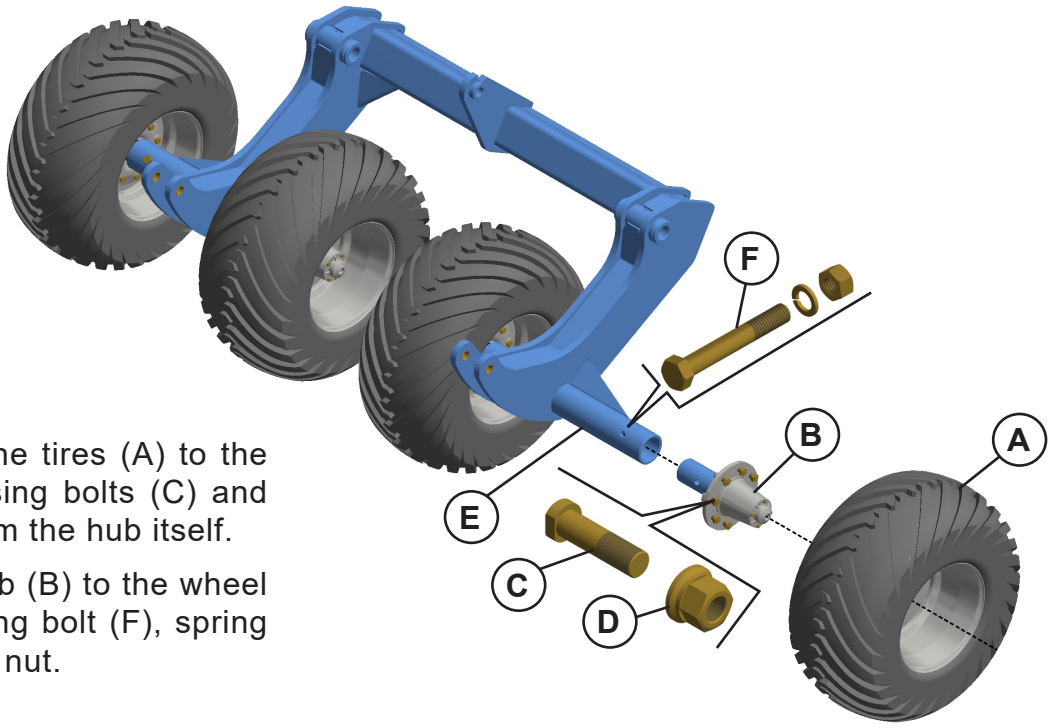
Tires assembly

For the models: **9 x 20 - 14 ply, 600/50 x 22.5 - 16 ply and 400/55 x 22.5 - 16 ply.**

1. Assemble the tires (A) to the hubs (B) using bolts (C), shims (D) and the nuts (E) from the hub itself.
2. Lock the hub (B) to the wheel arm (F) using a bolt (G), spring washer and nut.

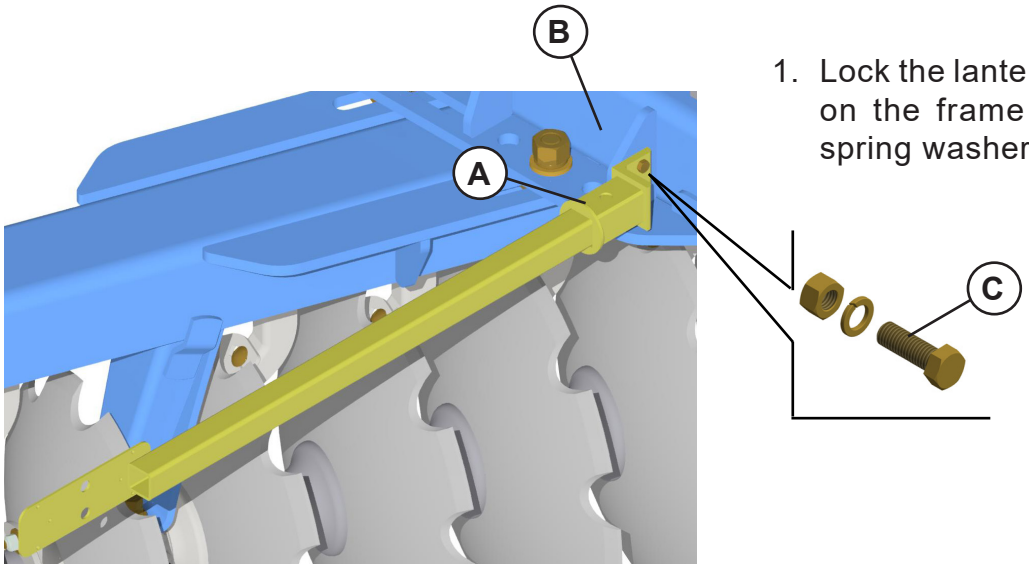


Model 400/60 x 15.5 - 14 ply.



1. Assemble the tires (A) to the hubs (B) using bolts (C) and nuts (D) from the hub itself.
2. Lock the hub (B) to the wheel arm (E) using bolt (F), spring washer and nut.

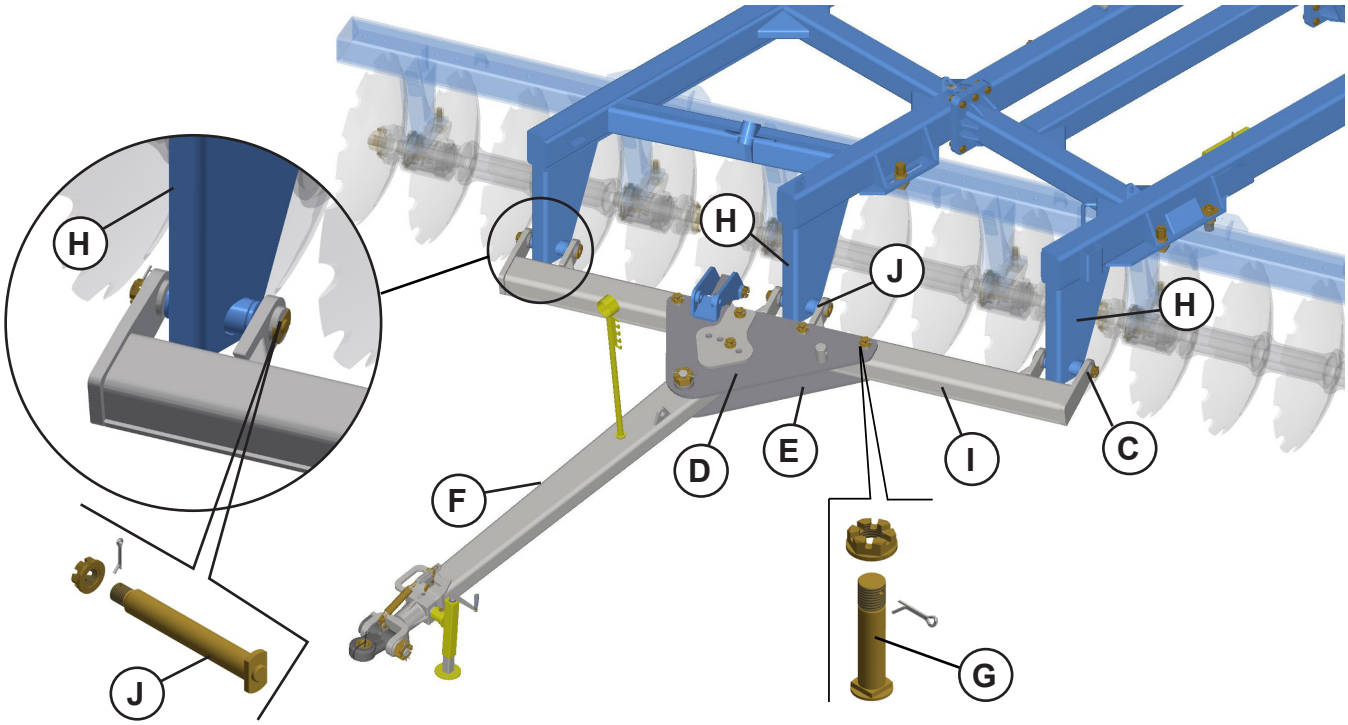
Lantern support fixation assembly



1. Lock the lantern fixation support (A) on the frame (B) using bolts (C), spring washers and nuts.

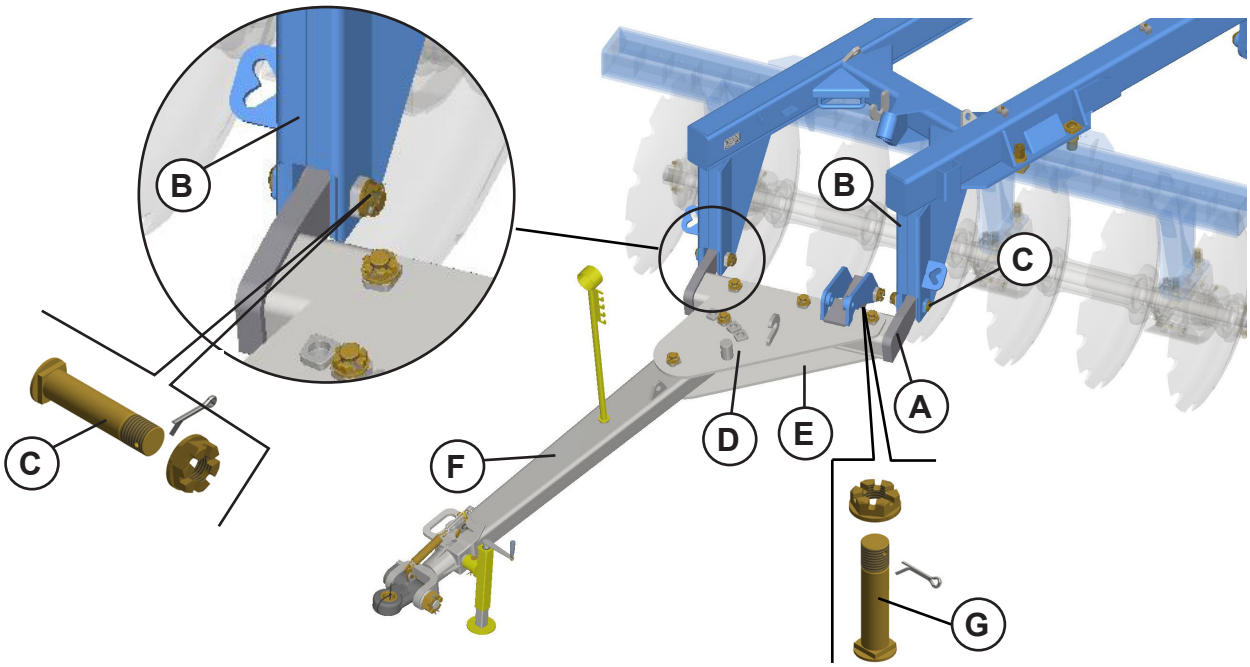
Traction set assembly

1. Couple the hitch bar (I) to the frame arms (H) using a bolt (J), castle nut and cotter pin.
2. Assemble the upper (D) and lower (E) plates on the hitch bar (I) using a junction axle (G), castle nut and cotter pin and check their correct position. Avoid to assemble them inverted.
3. Assemble the drawbar (F). Note that all castle nuts are on the upper part of the plates, locked and with cotter pins.



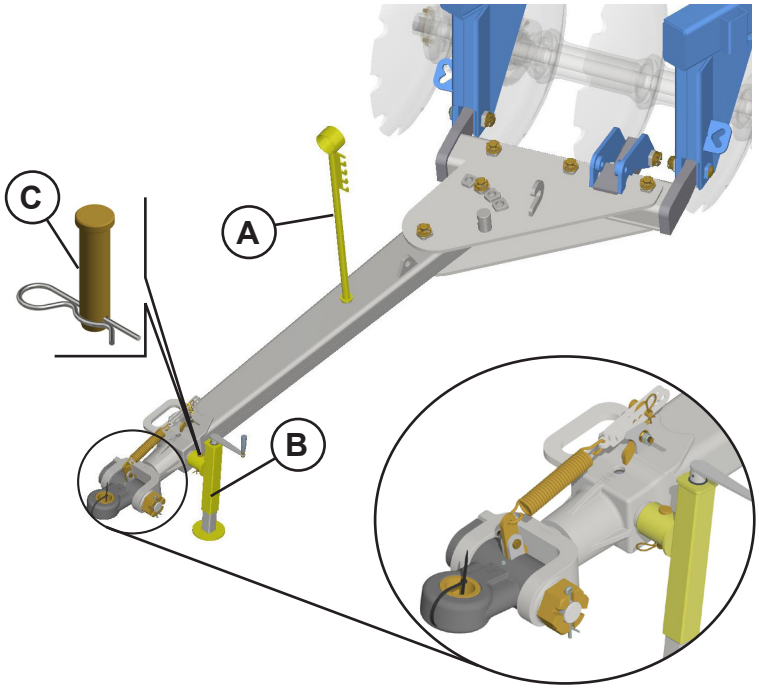
Traction set assembly

1. Couple the hitch bar (A) to the frame arms (B) using a junction axle (C), castle nut and cotter pin.
2. Assemble the upper (D) and lower (E) plates on the hitch bar (A) using a junction axle (G), castle nut and cotter pin and check their correct position. Avoid to assemble them inverted.
3. Assemble the drawbar (F). Note that all castle nuts are on the upper part of the plates, locked and with cotter pins.



Hose support and jack assembly

1. Assemble the hose support (A) to the drawbar using a cotter pin.
2. Assemble the jack (B) using a pin (C) and cotter pin.

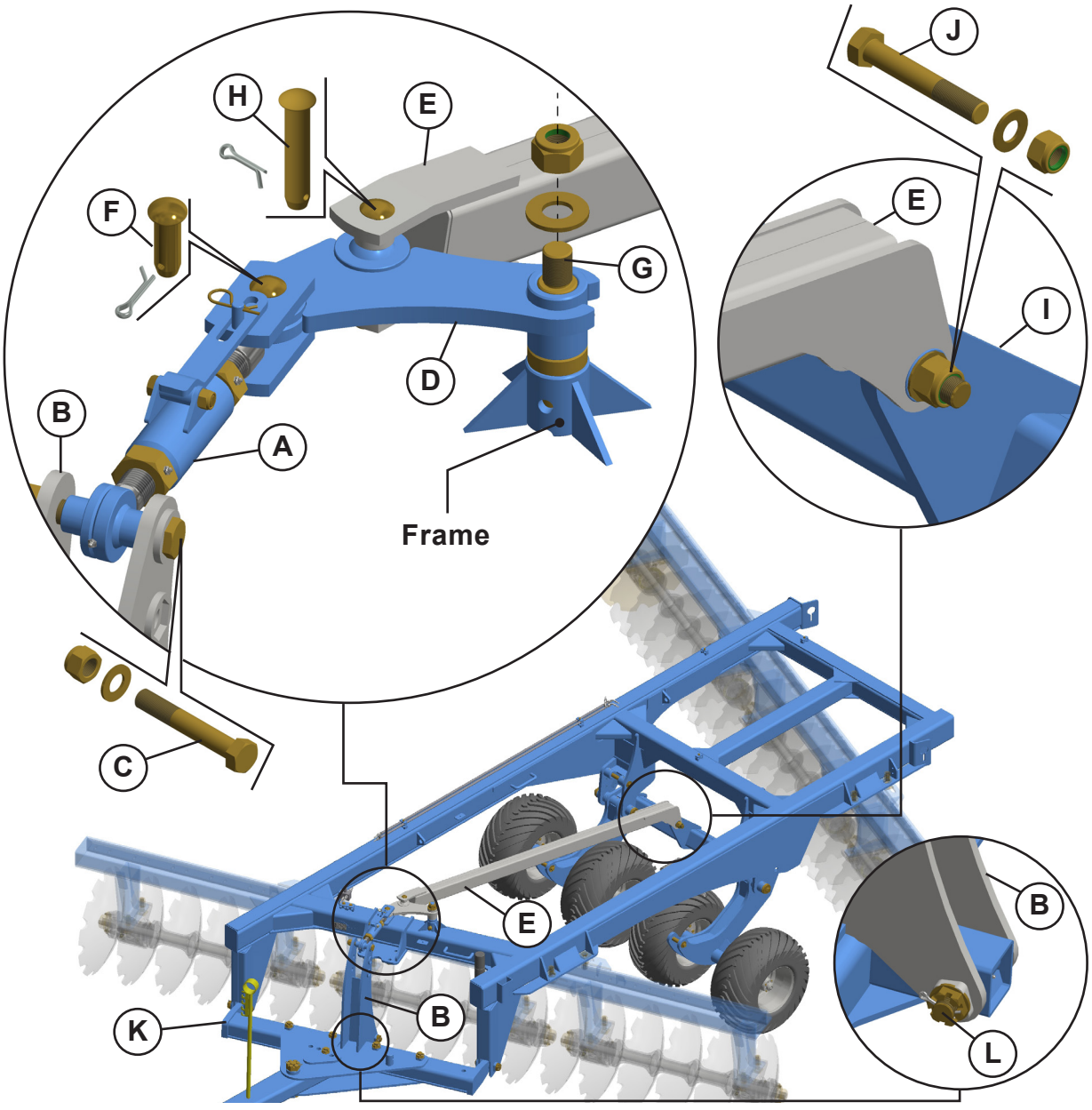


NOTE

- The hitch has a device to position itself on the tractor drawbar without the need to use your hands, thus avoiding accidents during the job.

Mechanical stabilizer bar set

1. Couple the stabilizer (A) to the drawbar articulator (B) using a bolt (C), flat washer and nut and to the stabilizer bar (E) articulator (D) using a pin and cotter pin (F). Fasten the other end of the articulator (D) on the frame using a pivot axle (G), flat washer and nut.
2. Fasten one end of the stabilizer bar (E) to the articulator (D) using a pin and cotter pin (H). Lock the other end to the wheel support (I) using a bolt (J), flat washer and nut.

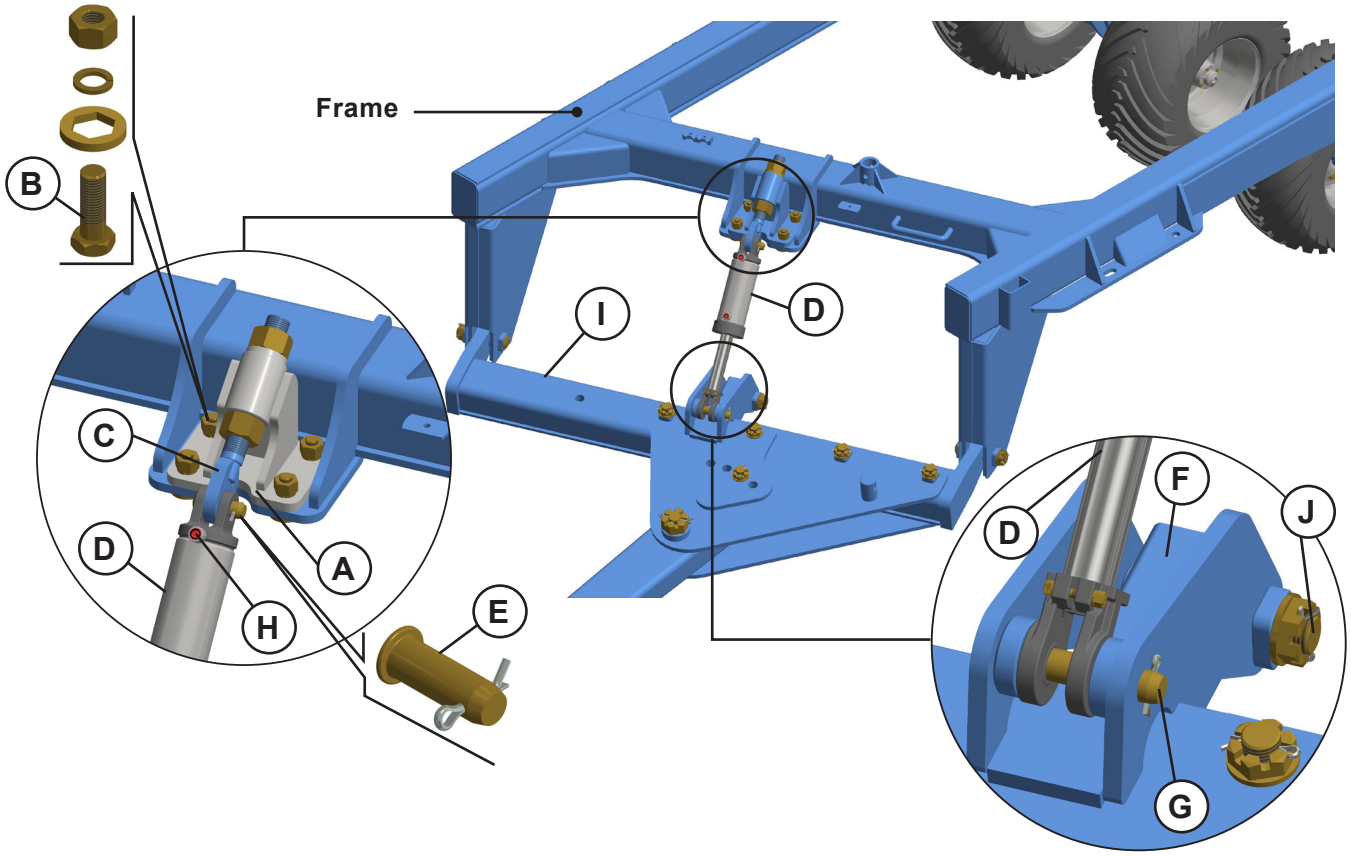


NOTE

- The drawbar articulator (B) is fastened to the hitch bar (K) using a bolt (L), castle nut and cotter pin. When fastening it, make sure to not overtighten the nut to lock the set, so the drawbar will be free to articulate.

Hydraulic articulation set

1. Assemble the cylinder fastener (A) to the frame using a bolt (B), hexagonal flat washer, spring washer and nut. After that, fasten the adjusting spindle (C) to the fastener (A) using nuts.
2. Assemble the cylinder (D) to the adjusting spindle (C) using pin and cotter pin (E). Fasten the cylinder rod to the drawbar articulator (F) using a pin and cotter pin (G).
3. Note that the cylinder rod must remain facing the front part of the equipment and the hose connectors (H) must be facing up.



NOTE

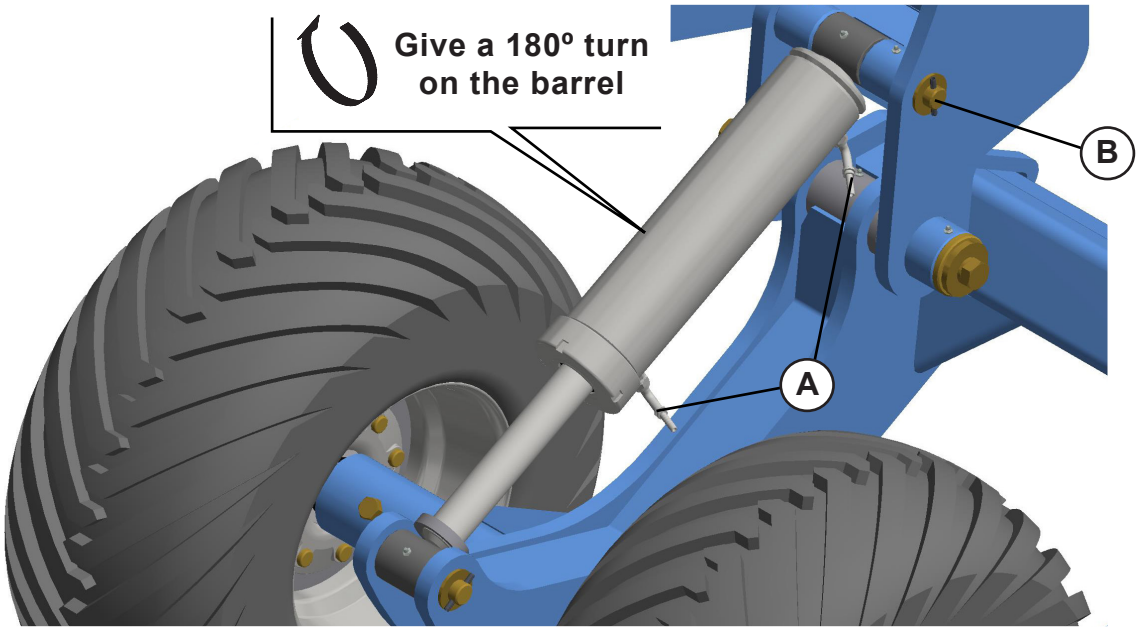
- The drawbar articulator (F) is fastened to the hitch bar (I) using a bolt (J), castle nut and cotter pin. When fastening it, make sure to not overtighten the nut to lock the set, so the drawbar will be free to articulate.

Hydraulic cylinder assembly

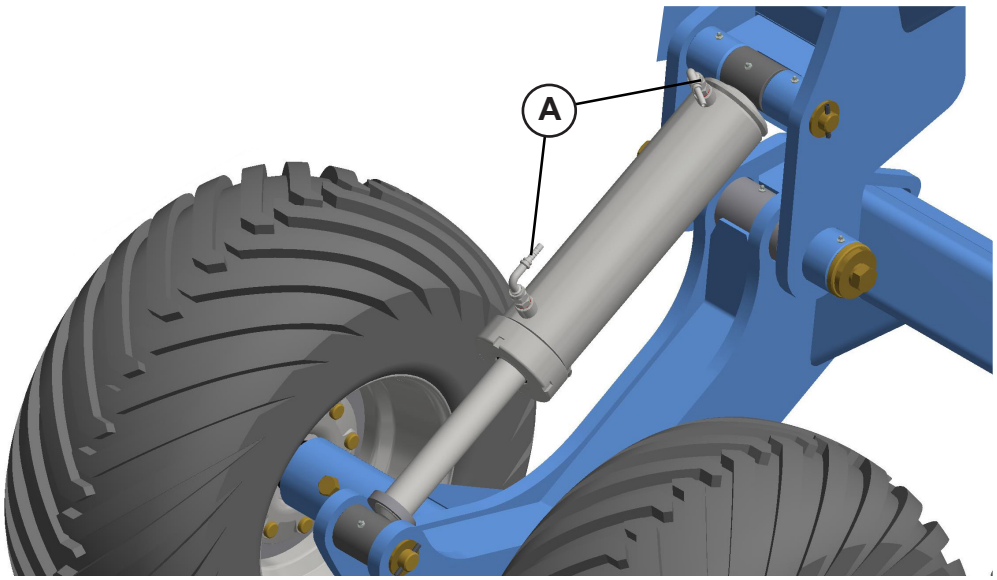
Protecting the ports:

The cylinder ports (A) are delivered to the owner facing down in order to protect them.

To return the cylinder ports to their correct position, loosen up the pin (B), letting the cylinder barrel free.



Give a 180° turn on the cylinder barrel to let the ports (A) facing up.

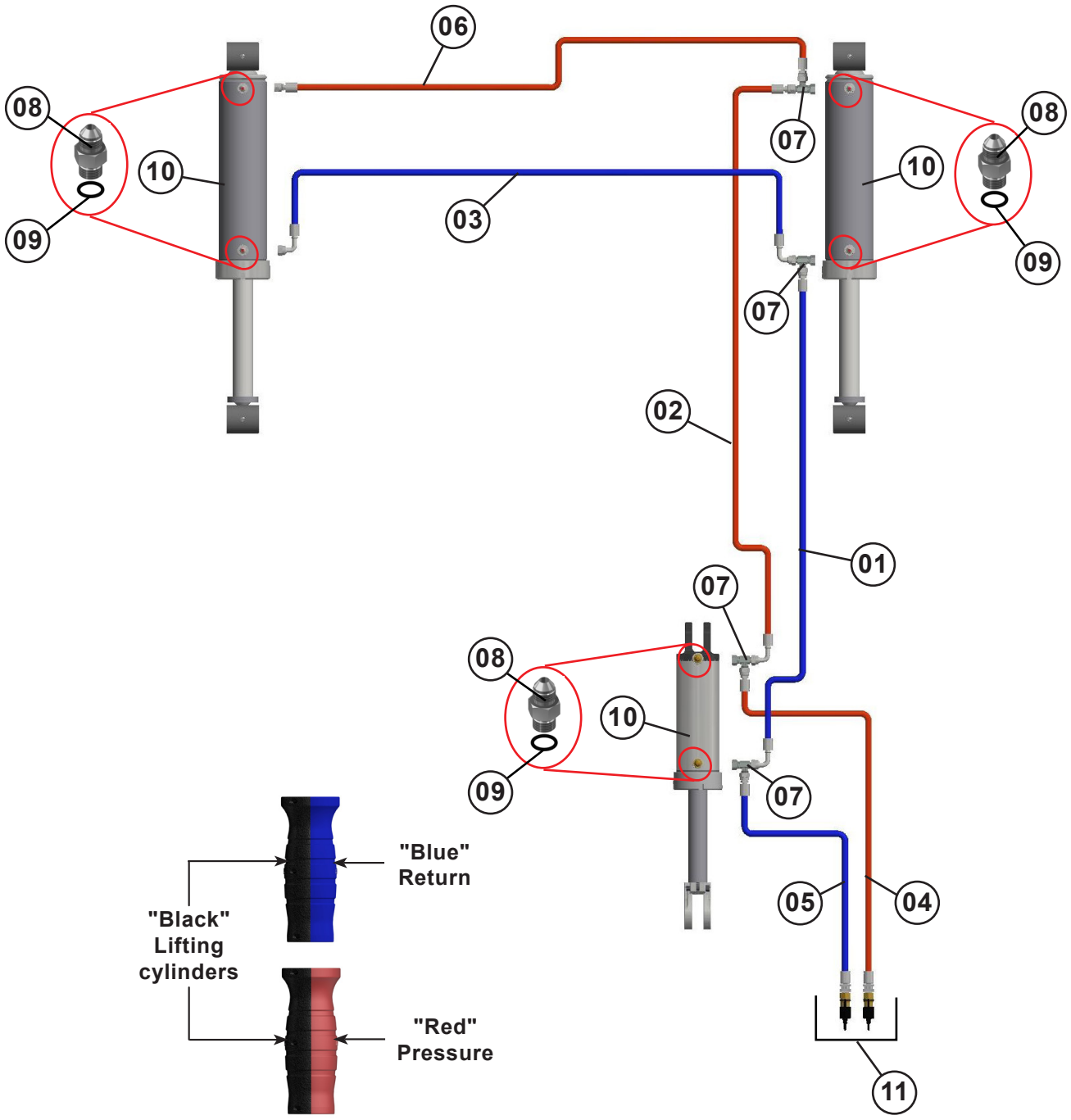


NOTE

- Always use thread sealing tape to couple the male quick couplers to the hoses.

Hydraulic circuit - wheel support lifting

- GAPCR-HD 8013 - 21 to 27 disc blades
- GASPCR-HD 9017 - 12 to 16 disc blades
- GASPCR-EHD 10020 - 12 and 14 disc blades



ATTENTION! RISK OF ACCIDENT

- Do not make any repair when the system is pressurized or if the cylinder is under load.
- Use proper hand and eye protection to search for high-pressure hydraulic leaks.

Hydraulic circuit - wheel support lifting

- **GAPCR-HD 8013 - 21 to 27 disc blades**
- **GASPCR-HD 9017 - 12 to 16 disc blades**
- **GASPCR-EHD 10020 - 12 and 14 disc blades**

Item	Quantity	Description	
01	01	3/8" X 4000 TR - TC hose	Return
02	01	3/8" X 4700 TR - TC hose	Pressure
03	01	3/8" X 1700 TC - TC hose	Return
04	01	3/8" X 5500 TR - TM hose	Pressure
05	01	3/8" X 5500 TR - TM hose	Return
06	01	3/8" X 1330 TR - TR hose	Pressure
07	04	"T" adapter	
08	06	Nipple fitting	
09	06	O' ring	
10	03	Hydraulic cylinder	
11	02	Male quick coupler 1/2 NPT with cap	

IMPORTANT

- Always use thread sealing tape to couple the male quick coupler to the hoses.
- The cylinder rod must always be facing the front part of the equipment.
- During assembly, avoid that the ports touch the soil.
- When finishing to assemble the hydraulic hoses, carry out a general inspection to check if all hose ports are tightened and if they are properly installed.

Hydraulic circuit - wheel support lifting

- GAPCR-HD 8013 - 29 to 37 disc blades and 41 to 49 disc blades (folding wings)

- GASPCR-HD 9017 - 18 to 30 disc blades and 32 to 36 disc blades (folding wings)

- GASPCR-EHD 10020 - 16 to 24 disc blades and 26 to 30 disc blades

Note that there are two engraved letters ("P" and "R") on the relief valve, as shown on the illustration. These hoses must never be inverted connected.

The hoses to be connected to the port with the engraved "P" letter are the ones responsible for closing the hydraulic cylinder (rod size).

The function of this valve is to control the closing pressure of the hydraulic cylinder, in a way that the cylinder does not crush the depth stops.

IMPORTANT

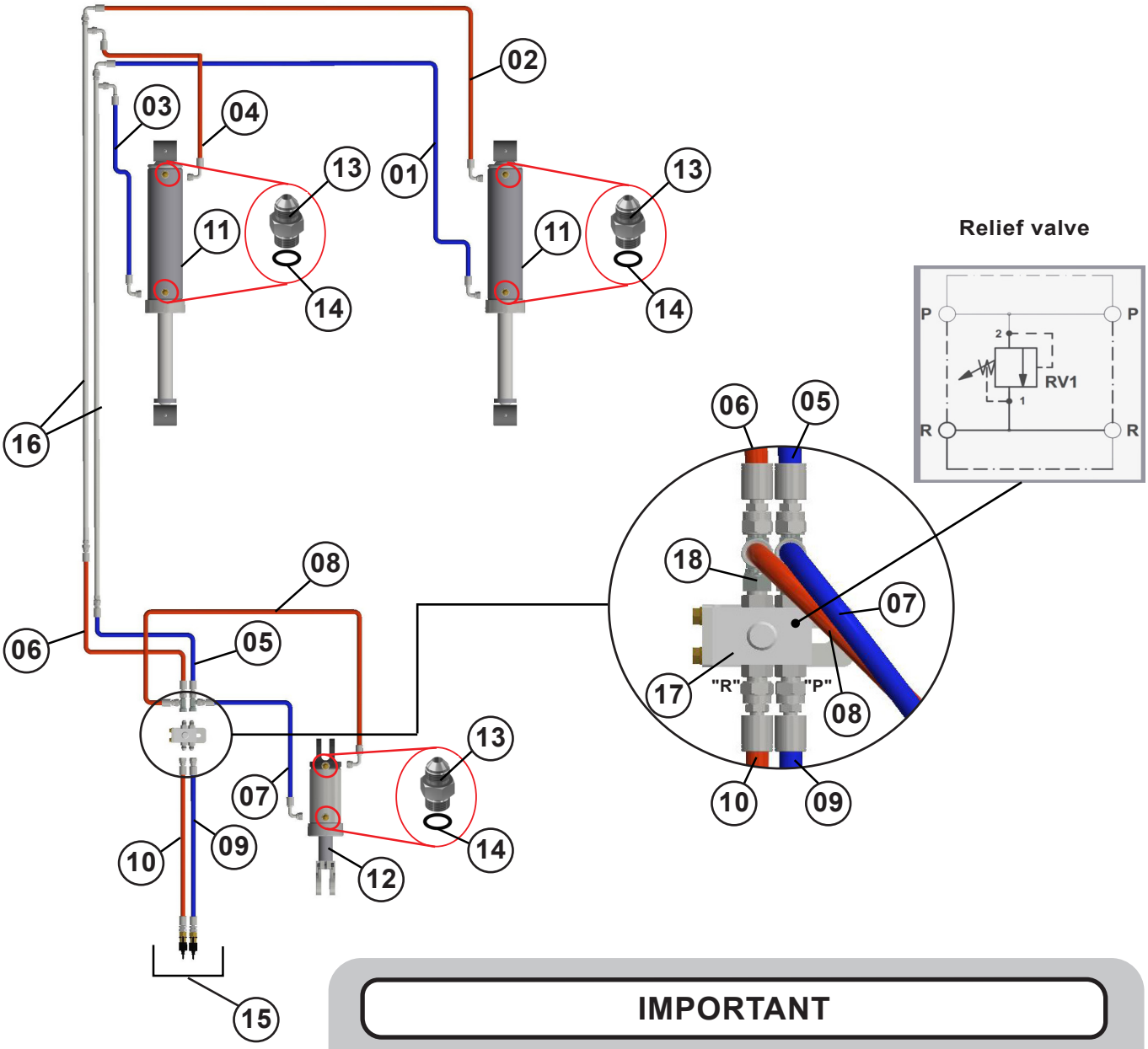
- Always use thread sealing tape to couple the male quick coupler to the hoses.
- The cylinder rod must always be facing the front part of the equipment.
- During assembly, avoid that the ports touch the soil.
- When finishing to assemble the hydraulic hoses, carry out a general inspection to check if all hose ports are tightened and if they are properly installed.

ATTENTION! RISK OF ACCIDENT

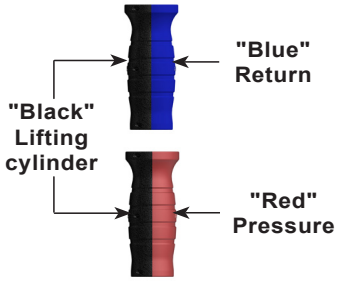
- Do not make any repair when the system is pressurized or if the cylinder is under load.
- Use proper hand and eye protection to search for high-pressure hydraulic leaks.

Hydraulic circuit - wheel support lifting

- GAPCR-HD 8013 - 29 to 37 disc blades and 41 to 49 disc blades (folding wings)
- GASPCR-HD 9017 - 18 to 30 disc blades and 32 to 36 disc blades (folding wings)
- GASPCR-EHD 10020 - 16 to 24 disc blades and 26 to 30 disc blades



Relief valve



IMPORTANT

- Note that there are two engraved letters ("P" and "R") on the relief valve, as shown on the illustration. These hoses must never be inverted connected.
- The hoses to be connected to the port with the engraved "P" letter are the ones responsible for closing the hydraulic cylinder (rod size).
- The function of this valve is to control the closing pressure of the hydraulic cylinder, in a way that the cylinder does not crush the depth stops.

Hydraulic circuit - wheel support lifting

- GAPCR-HD 8013 - 29 to 37 disc blades and 41 to 49 disc blades (folding wings)

- GASPCR-HD 9017 - 32 to 36 disc blades (folding wings)

Item	Quantity	Description	
01	01	3/8" X 2600 TC - TC hose	Return
02	01	3/8" X 2200 TC - TC hose	Pressure
03	01	3/8" X 1200 TC - TC hose	Return
04	01	3/8" X 1000 TC - TC hose	Pressure
05	01	3/8" X 800 TR - TR hose	Return
06	01	3/8" X 800 TR - TR hose	Pressure
07	01	3/8" X 1400 TR - TC hose	Return
08	01	3/8" X 1600 TR - TC hose	Pressure
09	01	3/8" X 5500 TR - TM hose	Return
10	01	3/8 X 5500 TR - TM hose	Pressure
11	02	Ø 53,98 hydraulic cylinder	
12	01	Ø 50,80 hydraulic cylinder	
13	06	Nipple fitting	
14	06	O' ring	
15	02	Male quick coupler 1/2 NPT with cap	
16	02	Oil distributor duct	
17	01	Valve	
18	02	"T" adapter	

Hydraulic circuit - wheel support lifting

- GASPCR-HD 9017 - 18 to 30 disc blades

- GASPCR-EHD 10020 - 16 to 24 disc blades and 26 to 30 disc blades

Item	Quantity	Description	
01	01	3/8" X 2600 TC - TC hose	Return
02	01	3/8" X 2200 TC - TC hose	Pressure
03	01	3/8" X 1200 TC - TC hose	Return
04	01	3/8" X 1000 TC - TC hose	Pressure
05	01	3/8" X 800 TR - TR hose	Return
06	01	3/8" X 800 TR - TR hose	Pressure
07	01	3/8" X 1400 TR - TC hose	Return
08	01	3/8" X 1600 TR - TC hose	Pressure
09	01	3/8" X 6000 TR - TM hose	Return
10	01	3/8" X 6000 TR - TM hose	Pressure
11	02	Ø 53,98 hydraulic cylinder	
12	01	Ø 50,80 hydraulic cylinder	
13	06	Nipple fitting	
14	06	O' ring	
15	02	Male quick coupler 1/2 NPT with cap	
16	02	Oil distributor duct	
17	01	Valve	
18	02	"T" adapter	

Hydraulic circuit - wheel support lifting

- GAPCR-HD 8013 - 39 to 45 disc blades

- GASPCR-HD 9017 - 32 to 36 disc blades

Note that there are two engraved letters ("P" and "R") on the relief valve, as shown on the illustration. These hoses must never be inverted connected.

The hoses to be connected to the port with the engraved "P" letter are the ones responsible for closing the hydraulic cylinder (rod size).

The function of this valve is to control the closing pressure of the hydraulic cylinder, in a way that the cylinder does not crush the depth stops.

IMPORTANT

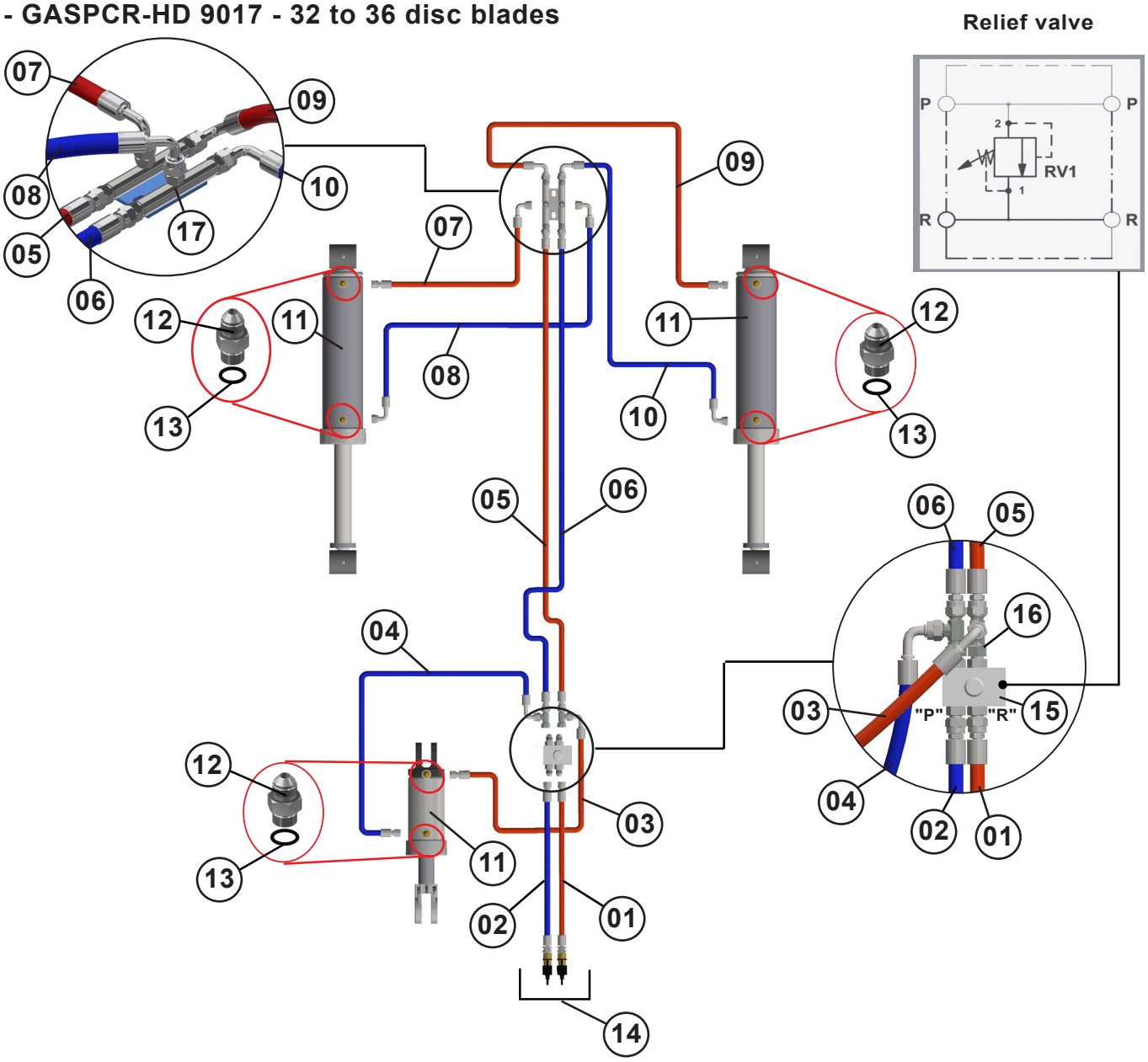
- Always use thread sealing tape to couple the male quick coupler to the hoses.
- The cylinder rod must always be facing the front part of the equipment.
- During assembly, avoid that the ports touch the soil.
- When finishing to assemble the hydraulic hoses, carry out a general inspection to check if all hose ports are tightened and if they are properly installed.

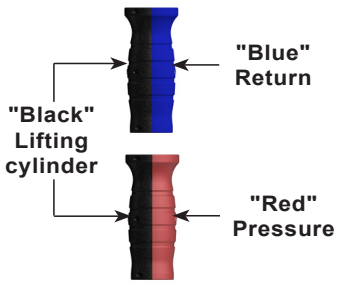
⚠ ATTENTION! RISK OF ACCIDENT

- Do not make any repair when the system is pressurized or if the cylinder is under load.
- Use proper hand and eye protection to search for high-pressure hydraulic leaks.

Hydraulic circuit - wheel support lifting

- GAPCR-HD 8013 - 39 to 45 disc blades
- GASPCR-HD 9017 - 32 to 36 disc blades





IMPORTANT

- Note that there are two engraved letters ("P" and "R") on the relief valve, as shown on the illustration. These hoses must never be inverted connected.
- The hoses to be connected to the port with the engraved "P" letter are the ones responsible for closing the hydraulic cylinder (rod size).
- The function of this valve is to control the closing pressure of the hydraulic cylinder, in a way that the cylinder does not crush the depth stops.

Hydraulic circuit - wheel support lifting

- GAPCR-HD 8013 - 39 to 45 disc blades

- GASPCR-HD 9017 - 32 to 36 disc blades

Item	Quantity	Description	
01	01	3/8" X 6000 TR - TM hose	Pressure
02	01	3/8" X 6000 TR - TM hose	Return
03	01	3/8" X 800 TR - TC hose	Pressure
04	01	3/8" X 800 TR - TC hose	Return
05	01	3/8" X 3900 TR - TR hose	Pressure
06	01	3/8" X 3900 TR - TR hose	Return
07	01	3/8" X 1400 TR - TC hose	Pressure
08	01	3/8" X 2600 TC - TC hose	Return
09	01	3/8" X 1600 TR - TC hose	Pressure
10	01	3/8" X 2200 TC - TC hose	Return
11	03	Hydraulic cylinder	
12	06	Nipple fitting	
13	06	O' ring	
14	02	Male quick coupler 1/2 NPT with cap	
15	01	Valve	
16	02	"T" adapter	
17	01	Double connection	

Hydraulic circuit - wheel support lifting with stabilizer bar

- GAPCR-HD 8013 - 29 to 37 disc blades and 41 to 49 disc blades (folding wings)

- GASPCR-HD 9017 - 18 to 22 disc blades and 32 to 36 disc blades (folding wings)

- GASPCR-EHD 10020 - 16 to 24 disc blades

Note that there are two engraved letters ("P" and "R") on the relief valve, as shown on the illustration. These hoses must never be inverted connected.

The hoses to be connected to the port with the engraved "P" letter are the ones responsible for closing the hydraulic cylinder (rod size).

The function of this valve is to control the closing pressure of the hydraulic cylinder, in a way that the cylinder does not crush the depth stops.

IMPORTANT

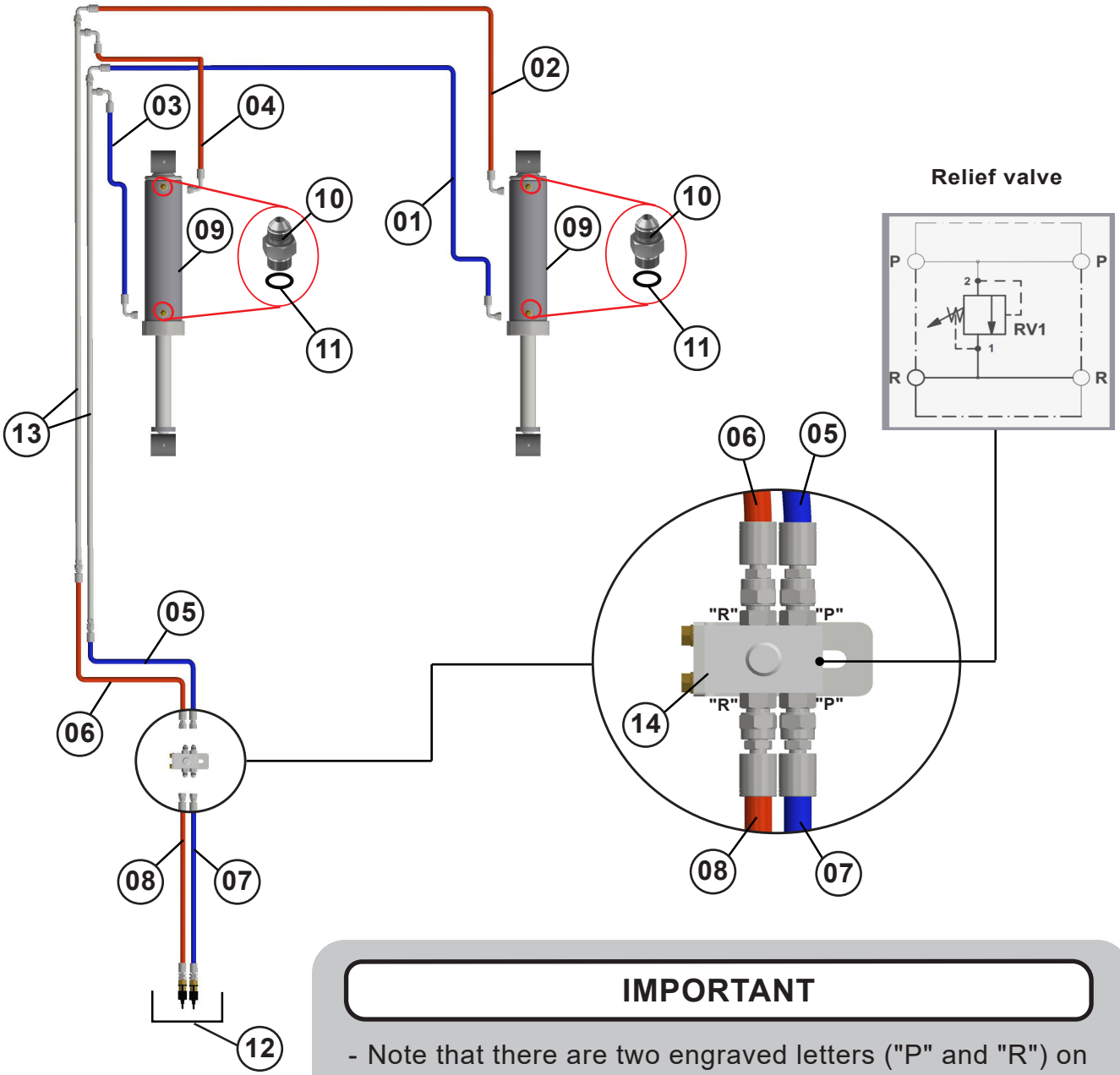
- Always use thread sealing tape to couple the male quick coupler to the hoses.
- The cylinder rod must always be facing the front part of the equipment.
- During assembly, avoid that the ports touch the soil.
- When finishing to assemble the hydraulic hoses, carry out a general inspection to check if all hose ports are tightened and if they are properly installed.

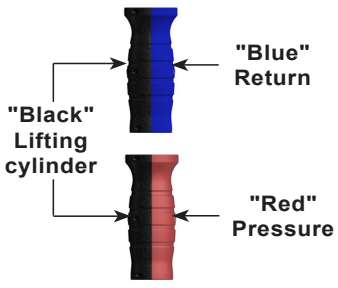
ATTENTION! RISK OF ACCIDENT

- Do not make any repair when the system is pressurized or if the cylinder is under load.
- Use proper hand and eye protection to search for high-pressure hydraulic leaks.

Hydraulic circuit - wheel support lifting with stabilizer bar

- GAPCR-HD 8013 - 29 to 37 disc blades and 45 & 49 disc blades (folding wings)
- GASPCR-HD 9017 - 18 to 22 disc blades and 32 to 36 disc blades (folding wings)
- GASPCR-EHD 10020 - 16 to 24 disc blades





IMPORTANT

- Note that there are two engraved letters ("P" and "R") on the relief valve, as shown on the illustration. These hoses must never be inverted connected.
- The hoses to be connected to the port with the engraved "P" letter are the ones responsible for closing the hydraulic cylinder (rod size).
- The function of this valve is to control the closing pressure of the hydraulic cylinder, in a way that the cylinder does not crush the depth stops.

Hydraulic circuit - wheel support lifting with stabilizer bar

- GAPCR-HD 8013 - 29 to 37 disc blades and 45 & 49 disc blades (folding wings)

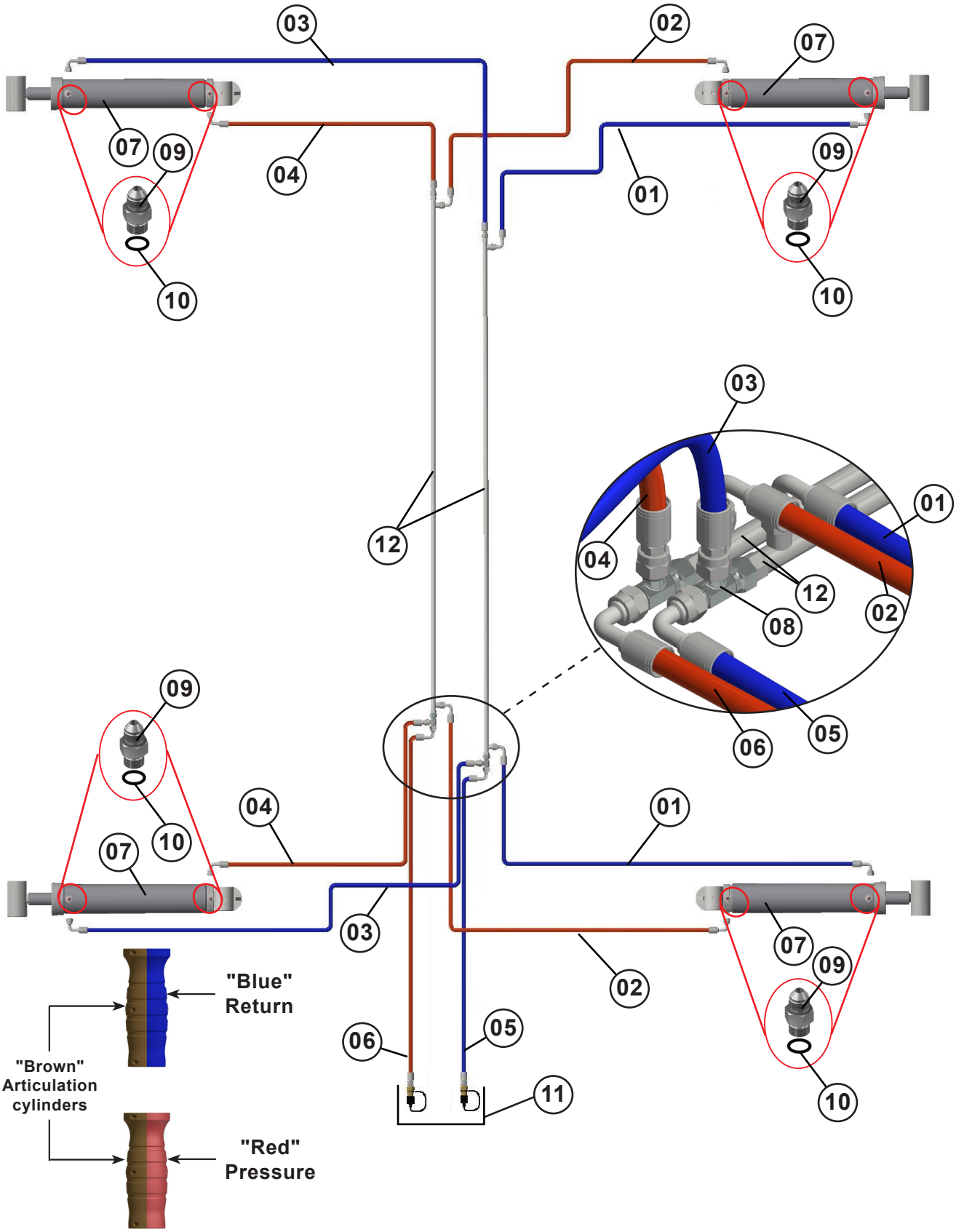
- GASPCR-HD 9017 - 18 to 22 disc blades and 32 to 36 disc blades (folding wings)

- GASPCR-EHD 10020 - 16 to 24 disc blades

Item	Quantity	Description	
01	01	3/8" X 2600 TC - TC hose	Return
02	01	3/8" X 2200 TC - TC hose	Pressure
03	01	3/8" X 1200 TC - TC hose	Return
04	01	3/8" X 1000 TC - TC hose	Pressure
05	01	3/8" X 800 TR - TR hose	Return
06	01	3/8" X 800 TR - TR hose	Pressure
07	01	3/8" X 6000 TR - TM hose	Return
08	01	3/8" X 6000 TR - TM hose	Pressure
09	02	Hydraulic cylinder	
10	04	Nipple fitting	
11	04	O' ring	
12	02	Male quick coupler 1/2 NPT with cap	
13	02	Oil distributor duct	
14	01	Valve	

Hydraulic circuit - frame articulation

- GAPCR-HD 8013 - 45 and 49 disc blades (folding wings)
- GASPCR-HD 9017 - 32 to 36 disc blades (folding wings)



Hydraulic circuit - frame articulation

- GAPCR-HD 8013 - 45 and 49 disc blades (folding wings)

- GASPCR-HD 9017 - 32 to 36 disc blades (folding wings)

Item	Quantity	Description	
01	02	3/8" X 4600 TC - TC hose	Return
02	02	3/8" X 4000 TC - TC hose	Pressure
03	02	3/8" X 2700 TR - TC hose	Return
04	02	3/8" X 2200 TR - TC hose	Pressure
05	01	3/8" X 6108 TC - TM hose	Return
06	01	3/8" X 6108 TC - TM hose	Pressure
07	04	Hydraulic cylinder	
08	02	"T" adapter	
09	08	Nipple fitting	
10	08	O' ring	
11	02	Male quick coupler 1/2 NPT with cap	
12	02	Oil distributor duct	

IMPORTANT

- Always use thread sealing tape to couple the male quick coupler to the hoses.
- The cylinder rod must always be facing the front part of the equipment.
- During assembly, avoid that the ports touch the soil.
- When finishing to assemble the hydraulic hoses, carry out a general inspection to check if all hose ports are tightened and if they are properly installed.

ATTENTION! RISK OF ACCIDENT

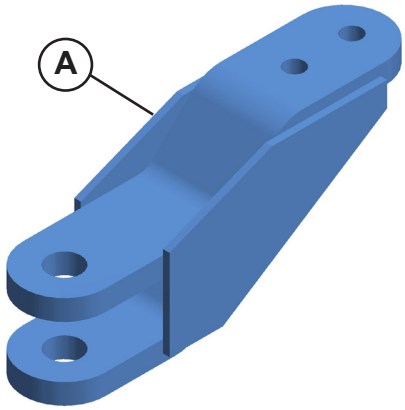
- Do not make any repair when the system is pressurized or if the cylinder is under load.
- Use proper hand and eye protection to search for high-pressure hydraulic leaks.

Rear hitch

The rear hitch (A) can be optionally supplied for these models:

- GAPCR-HD 8013 (21 to 27 disc blades)

- GAPCR-HD 8013 (39 to 45 disc blades)

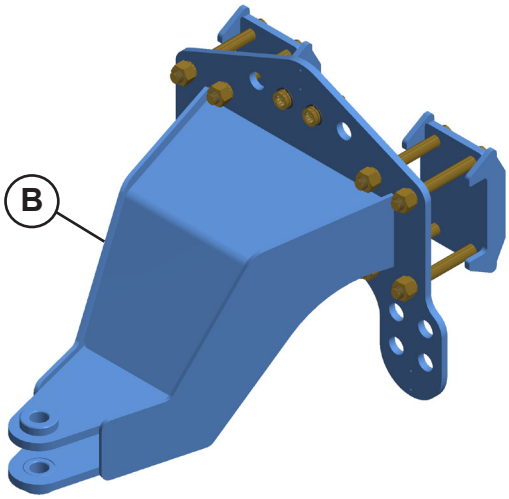


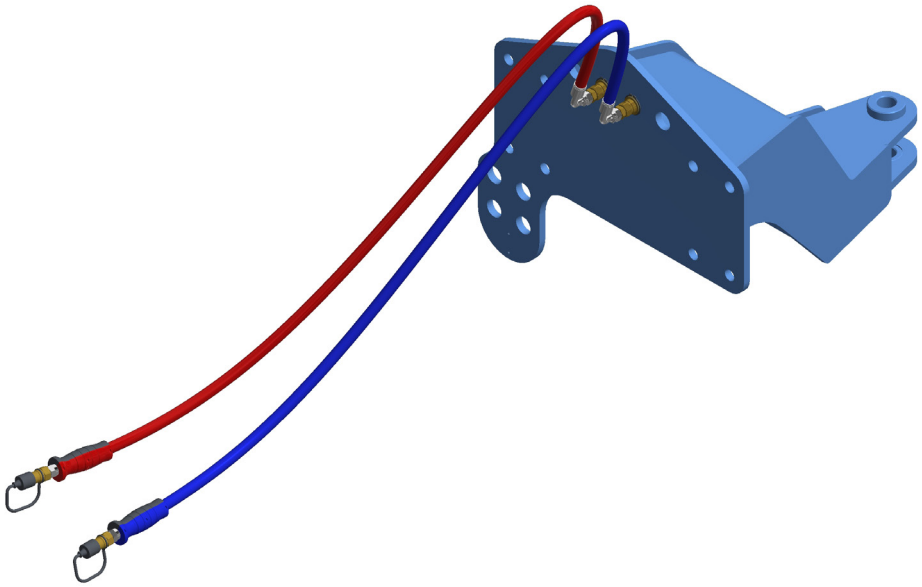
The rear hitch (B) can be optionally supplied for these models:

- GAPCR-HD 8013 (29 to 37 disc blades)

- GAPCR-HD 8013 (41 to 49 disc blades) - folding wings

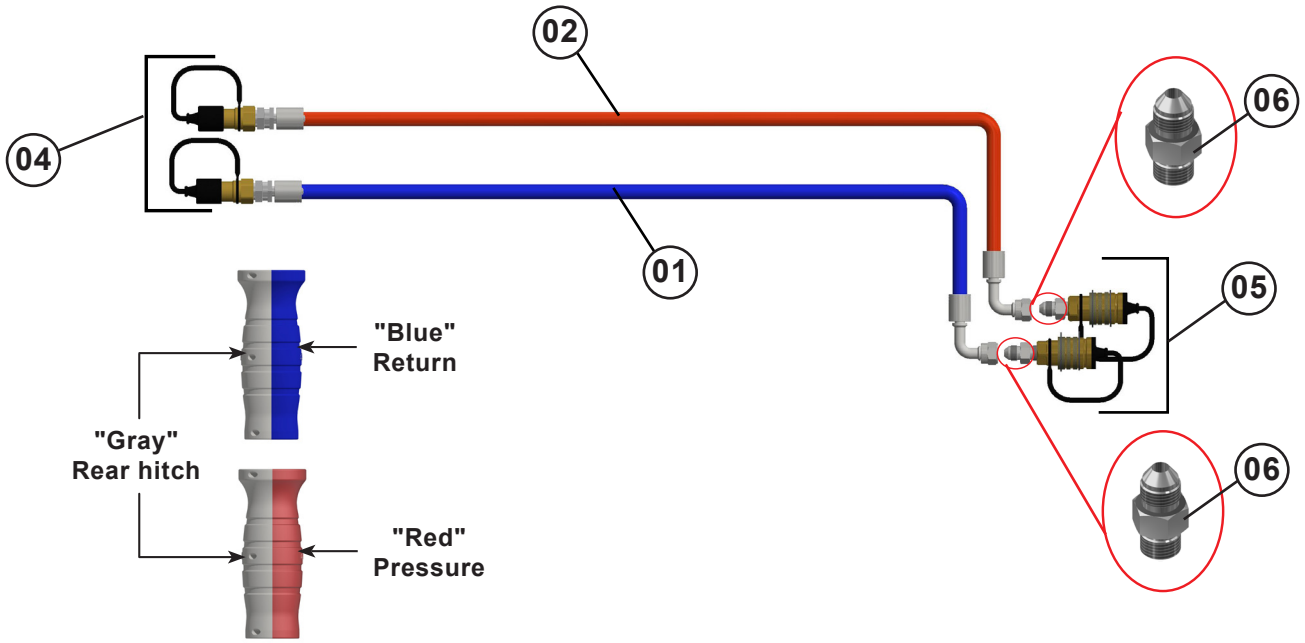
- GASPCR-HD 9017 (32 to 36 disc blades) - folding wings





Hydraulic circuit - rear hitch

- GAPCR-HD 8013 - 29 to 37 disc blades
- GAPCR-HD 8013 - 41 to 49 disc blades - folding wings
- GASPCR-HD 9017 - 32 to 36 disc blades - folding wings



Item	Quantity	Description	
01	01	3/8" X 12000 TC - TM hose	Return
02	01	3/8" X 12000 TC - TM hose	Pressure
04	02	Male quick coupler 1/2 NPT with cap	
05	02	Female quick coupler 1/2 NPT with cap	
06	02	Nipple fitting	

IMPORTANT

- The rear hitches have hydraulic outputs that allows to assemble another equipment or accessory on the disk harrow.
- Always use thread sealing tape to couple the male quick coupler to the hoses.
- When finishing to assemble the hydraulic hoses, carry out a general inspection to check if all hose ports are tightened and if they are properly installed.

ATTENTION! RISK OF ACCIDENT

- Do not make any repair when the system is pressurized or if the cylinder is under load.
- Use proper hand and eye protection to search for high-pressure hydraulic leaks.

⚠ ATTENTION! RISK OF ACCIDENT

- Only **CAPABLE** and **AUTHORIZED** personnel must operate the equipment.
- Observe every safety condition and use safety glasses, foot protection, earplugs/ muffs, protective gloves and any other required PPE.
- Before starting the job or transporting the equipment, check for any people or obstructions on the area.

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

Preparing the tractor

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

The drawbar is used to get a better power supplied by the tractor to perform the equipment dragging.

Drawbar types:

Straight up and positioned on a single height related to the soil, without the option to adjust the hitching height;

Angled drawbar with two height adjustments (going up or down).

When the bar is totally retreated on its length, the operator must be aware for any curve or maneuvers, as the equipment drawbar may touch the tractor tires or damage the hydraulic hoses.

When using the tractor drawbar, lift the three-point hitches entirely.

The tractor drawbar must be compatible with the equipment. Do not exceed the static load capacity of the tractor drawbar.

Preparing the equipment

The equipment must always be parked on a dry and flat place, free from any debris or strange objects. Follow this procedure to set the equipment up:

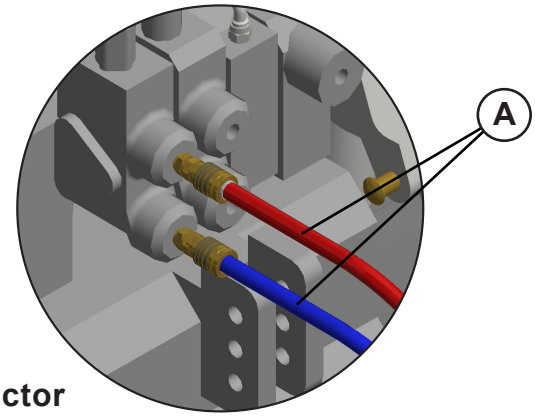
1. Clean up to remove strange objects from the equipment and from the working area;
2. Make sure that there is enough room to maneuver the tractor until it hitches to the equipment;
3. Turn on the tractor and slowly approach it to the hitching point direction;
4. Use a clean cloth or a paper towel to clean the couplers in the end of the hoses. Also, clean the area around the tractor couplers;
5. Lubricate all grease fittings appropriately (see the 'lubrication' page in the 'maintenance' section).

NOTE

- For the models with 42" and 44" disc blades, the tractor bar must oscillate and the tractor must have the ballasts on.

Hitching to the tractor

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



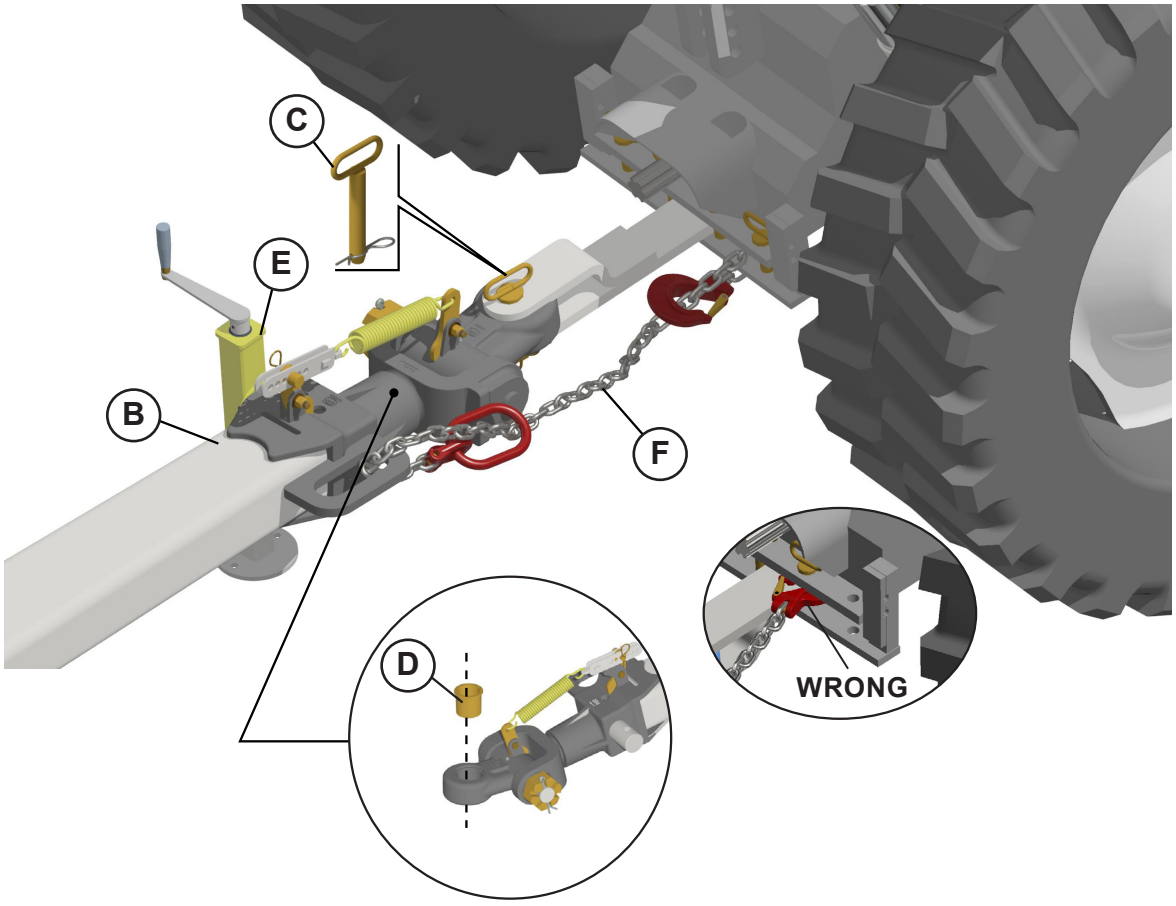
Tractor PTO

4. Check the drawbar type from your tractor. To hitch the equipment, use the tractor drawbar.
5. Use the jack (E) on the drawbar to lift or lower the tractor hitch so it is possible to align it with the tractor drawbar.
6. Couple the drawbar (B) to the tractor drawbar using the pin (C). Use a bushing (D) on the hitch that matches the pin (C) that is about to be used. Note that the tractor drawbar must always remain centered on the tractor.
7. Fasten the safety chain (F) to the tractor and equipment, but leave a small clearance to allow the equipment to perform maneuvers.

Hitching to the tractor

WARNING

- When setting up the equipment for the job, the tractor-equipment must be leveled related to the soil. Besides that, the tractor must be hitched to the equipment hitch to avoid unnecessary efforts during the set-up.
- When hitching the equipment to the tractor, use a chain to lock the equipment drawbar to the tractor hitch bar. This measure will prevent a possible rupture of any hydraulic hose or breaks on the hitching system, what would make the equipment tilt up.
- The correct way to hitch the safety chain (F) may vary according to the tractor model. However, the hitch and the hoop must pass through the chain links as shown on the illustration below. Never hitch the hook without passing it through the chain.



NOTE

- The axle (C) and the cotter pin is not included with the equipment.
- Keep the drawbar locked when transporting the equipment.
- Never remove the hoses without lowering the equipment and relieving the control valve pressure.

Important recommendations

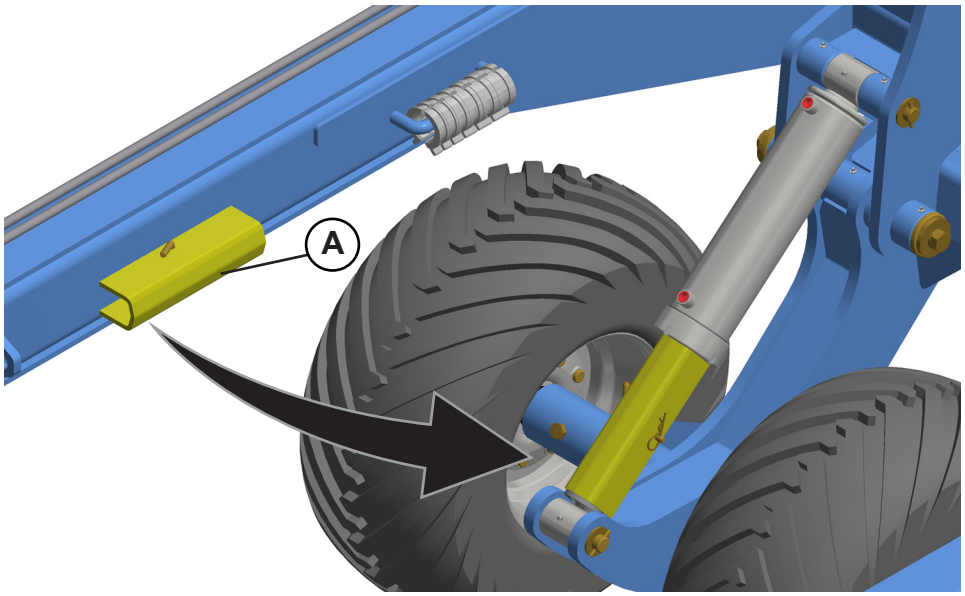
- The tractor drawbar must remain loose during working and fixed during transportation.

- Relieve the control valve pressure before removing the hoses.

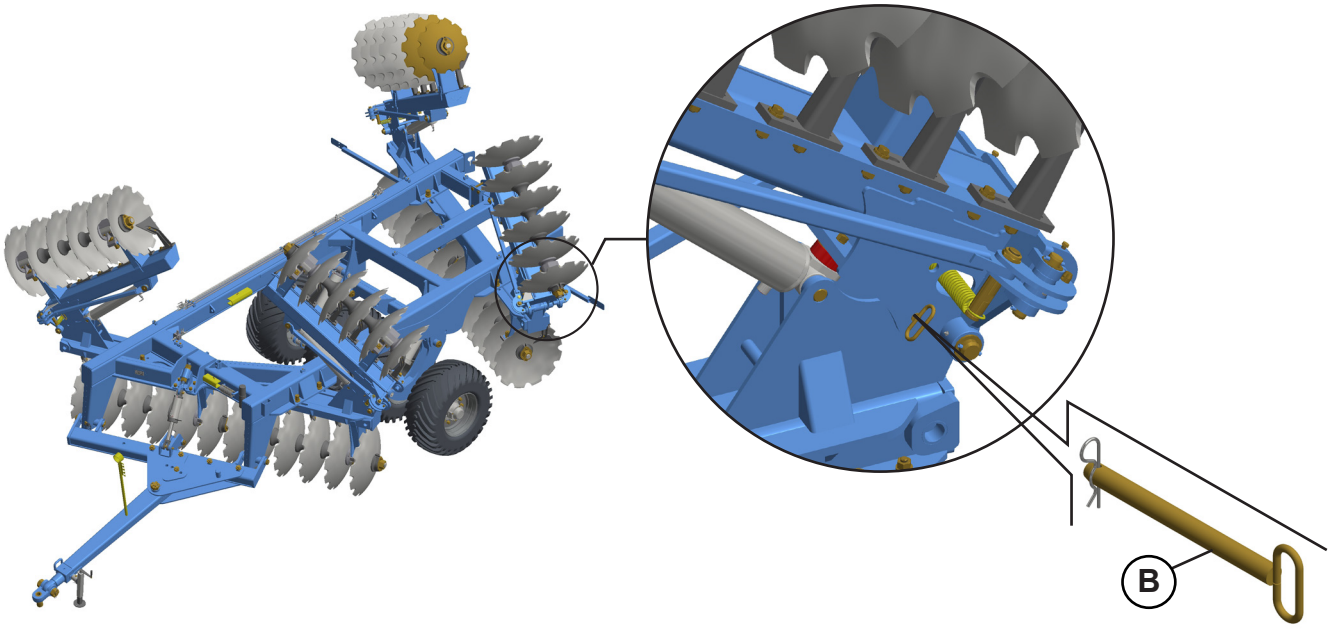
- Before starting working, check the conditions of all parts and retighten nuts and bolts, especially the ones on the disc gangs; damage to the axles and other fixation components may occur if the gangs are working loose.

- Lubricate all grease fittings appropriately. (Check lubrication instructions).

- To transport the disk harrow over greater distances use the transport locks (A), which are coupled to the hydraulic cylinder rods.



- To transport the disk harrow with folding wings over great distances use the axle locks (B) for transportation, which are coupled on the central frame and on the folding wings.



⚠ ATTENTION! RISK OF ACCIDENT

- Only **CAPABLE** and **AUTHORIZED** personnel must carry out the adjustments and operations of the equipment.
- Observe every safety condition and use safety glasses, foot protection, earplugs/ muffs, protective gloves and any other required PPE.
- Do not carry out any adjustment while the equipment is working.

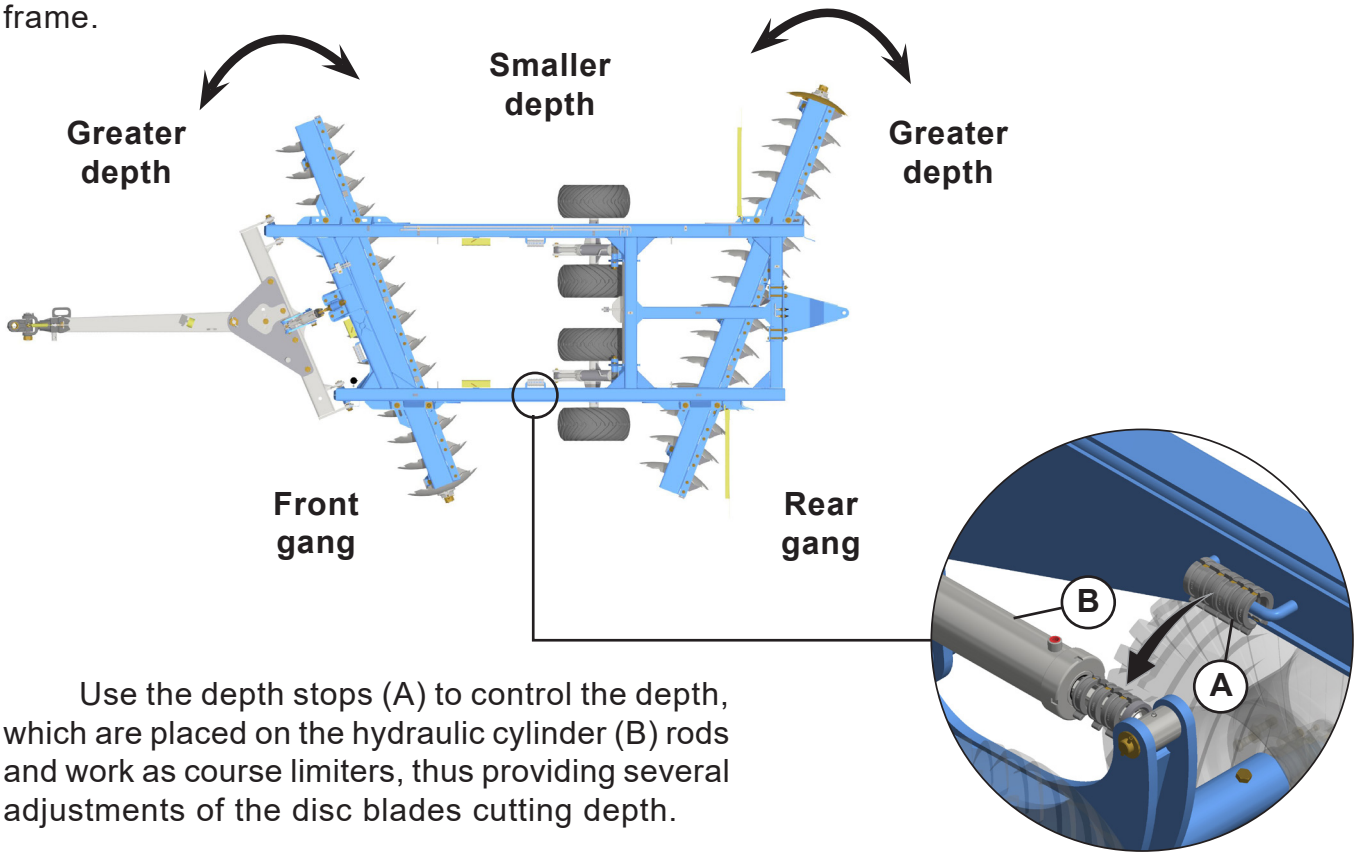
Cutting depth

The cutting depth is adjusted through the following points:

1) Disc gangs opening

The opening angle should increase between the gangs to work in soils with greater difficult to penetrate the disc blades. In light and loose soils, it is appropriate to work with a smaller opening angle.

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



Use the depth stops (A) to control the depth, which are placed on the hydraulic cylinder (B) rods and work as course limiters, thus providing several adjustments of the disc blades cutting depth.

NOTE

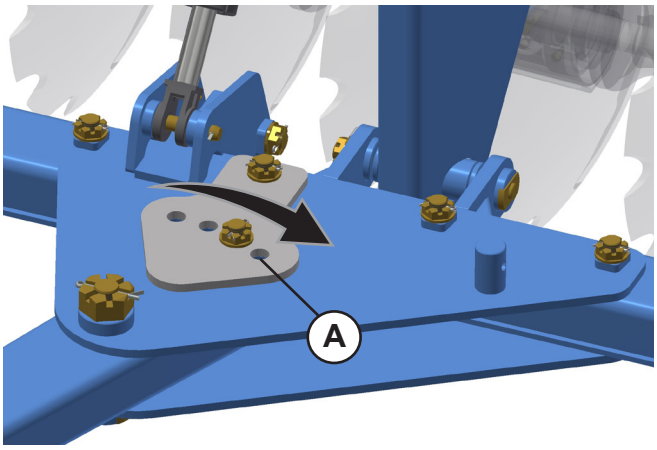
- We recommend the depth control by the disc gangs opening. Use the tires only where the disk harrow penetrates excessively.
- Use the depth stops (A) to determine less depth when cutting with the disk harrow, always maintaining the same adjustment of the cutting depth of the disc blades.

Cutting depth

2) Drawbar angle

The holes (A) in the upper and lower plates define a greater or smaller cutting depth and also performs the lateral displacement of the disk harrow.

In normal conditions, the drawbar should operate in the central hole of the fixation plates.



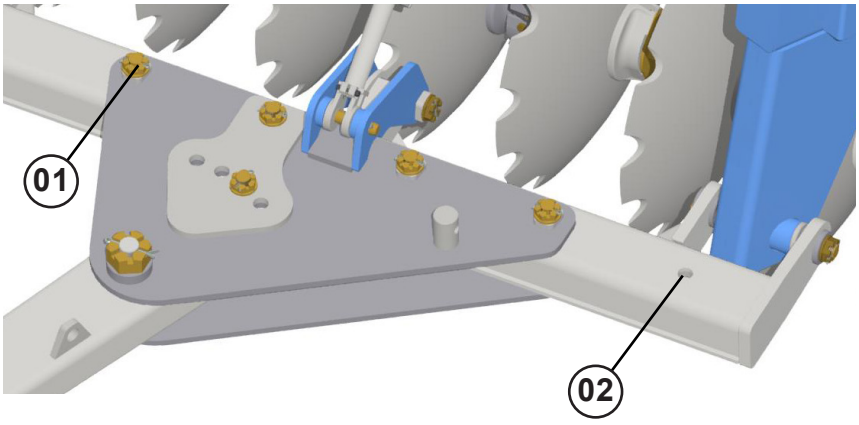
IMPORTANT

- To start the harrowing, we recommend using an average opening in the disc gangs and in the holes of the drawbar plates.
- The harrowed soil is always on the left hand side of the operator (harrow closed side).
- Try to make a good finish between passes. Avoid the formation of furrows or untilled strips.
- The tractor and equipment drawbar should be as aligned as possible related to the work direction.

Tractor position related to the previous pass - lateral displacement

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

This position is obtained according to the tractor gauge and cutting width of the harrow.



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

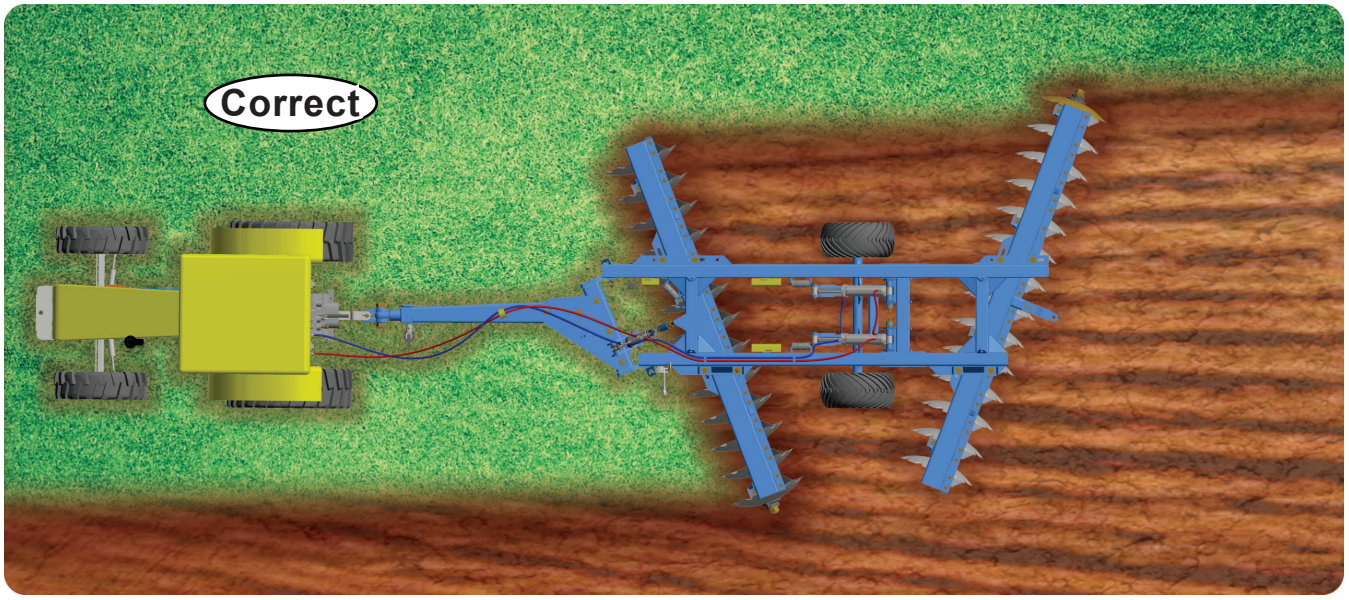
The displacement is done by changing the drawbar in the hitch bar.

Position #1: Normal position (centered): Used in most situations.

Position #2: Allows the tractor to approach the previous furrow.

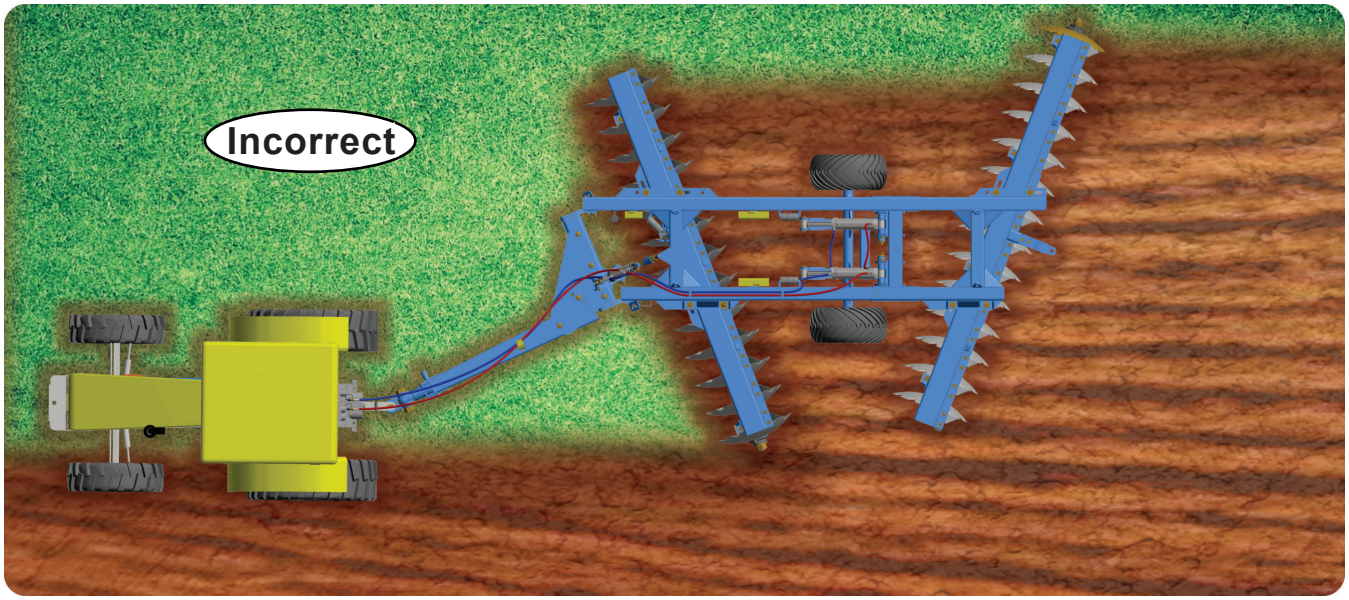
Correct way for harrowing

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



IMPORTANT

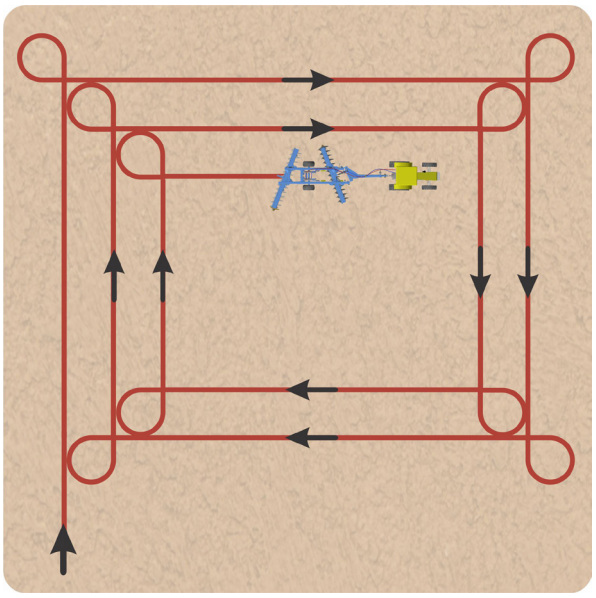
- Never pass the tires over an already harrowed area.



Ways to start the harrowing

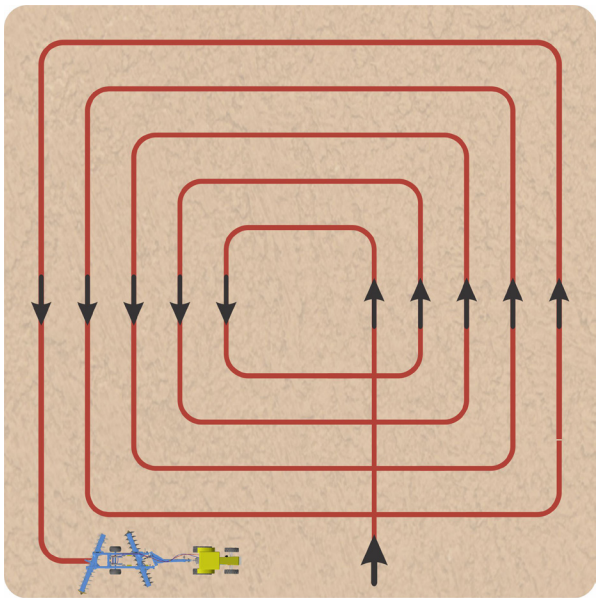
Regardless of the format and size of the field, the harrowing is made basically in two ways: from outside to inside or from inside to outside.

Harrowing in squares from outside to inside



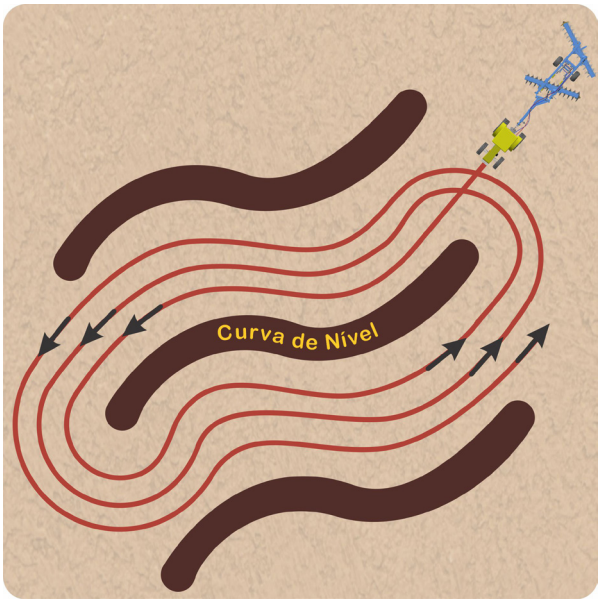
Entrance

Harrowing in squares from inside to outside



Entrance

Harrowing in level



Entrance

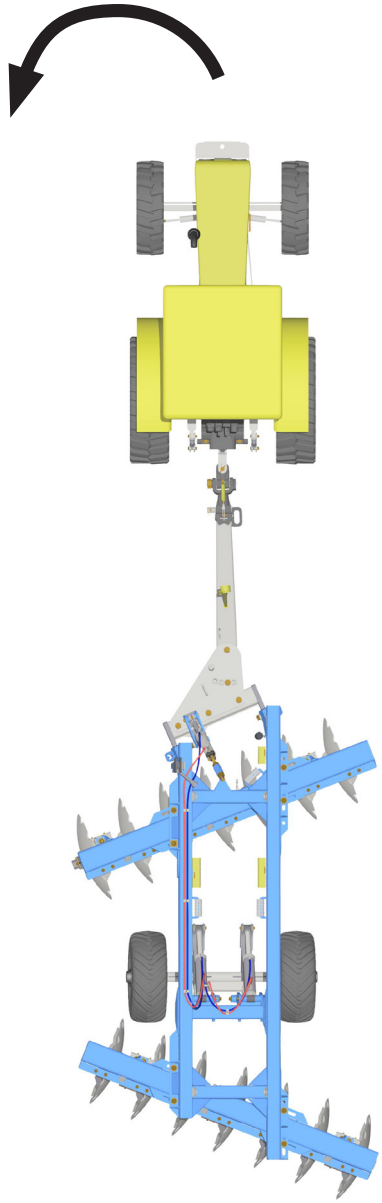
Exit

IMPORTANT

- Note that the harrowed ground is always on the left hand side of the operator.
- Only maneuver to the left hand side.

Direction of the maneuvers

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



IMPORTANT

- It is necessary to perform the maneuvers in the left hand side to avoid overloading the equipment and allow it to operate normally.
- Following these instructions also avoids the undesirable formation of large furrows in the local maneuvers.

Operations - important points

1. 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.
2. Carefully observe the lubrication intervals.
3. Special attention should be given to the disc gangs, retightening daily during the first week of use. Then, retighten periodically.
4. Choose a gear that allows the tractor to maintain certain power reserve, ensuring against unforeseen efforts.
5. The tire inflation must be done with the aid of a contention device (tire inflation cage).
6. The tire inflation is important; keep the inflation according to the 'tires inflation' page on the 'maintenance' section.
7. Speed is relative to the tractor gear and can only be determined by local conditions. We adopted an average 5 to 7 km/h, which is not advisable to overcome to maintain service efficiency and avoid possible damages to the equipment.
8. It is important to maintain a constant speed during the whole operation.
9. Only people who own a complete knowledge of the tractor and equipment must operate them.
10. Be on a wide field and maneuver on slow gear to hitch the equipment, being ready to brake when necessary.
11. Remove pieces of wood or any object that may attach in the disc blades.
12. The tractor drawbar must remain loose during working and transportation.
13. Only pull the disk harrow using a tractor with enough power.
14. During working or transportation, the presence of passengers on the tractor or equipment is not allowed.

Operations - important points

15. Keep the equipment centered related to the tractor and leveled related to the soil.

16. To carry out any verification on the equipment, lower it to the ground and shut down the tractor engine.

17. Whenever unhitching the equipment, either on the field or shed, do it on a flat and firm place and use the jacks. Make sure the equipment is properly supported.

18. Carry out the operations on a controlled and careful manner.

19. During working, do not maneuver without totally lifting the disk harrow, as the angle formed by the disc gangs would start to transmit great effort to the equipment, thus overloading the traction components.

20. The disk harrow activation to open or close the disc gangs must be done gradually and with the tractor in movement.

21. Relieve the control valve pressure before disconnecting the quick couplers and when doing any verification in the hydraulic circuit or on the retention valve.

22. Do not check eventual leaks using your bare hands, as the high pressure may cause body injury. Use a cardboard or any other suitable object.

23. As previously mentioned, these disk harrows have several settings. However, only the local conditions can determine their best adjustment.

⚠ ATTENTION! RISK OF ACCIDENT

- Only **QUALIFIED, CAPABLE** and **AUTHORIZED** personnel must carry out the maintenance of the equipment.
- Every maintenance must follow the recommendations that are included on the NR-12 (July/19 version) on the chapter 'maintenance, inspection, preparation, adjustment and repairs' (from item 12.11.1 to 12.11.5).
- Observe every safety condition and use safety glasses, foot protection, earplugs/ muffs, protective gloves and any other required PPE.
- Remove the ignition key before carrying out any type of maintenance on the equipment. If the equipment is not properly hitched, do not start the tractor engine.

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:

a) Lubricate every grease fitting after 24 hours of service.

1. Be sure about the lubricant quality in relation to its efficiency and purity, avoiding the use of products contaminated by water, dirt or others.
2. Remove the remainder old grease around the articulations.
3. Clean the grease fittings with a cloth before inserting lubricant and replace the damaged ones.
4. Introduce enough amount of new grease.
5. Use medium consistency grease.

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

1. 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.
2. Then, start to check weekly.
3. Change all the oil every 1,000 operating hours.
4. Use SAE 140 mineral oil only.

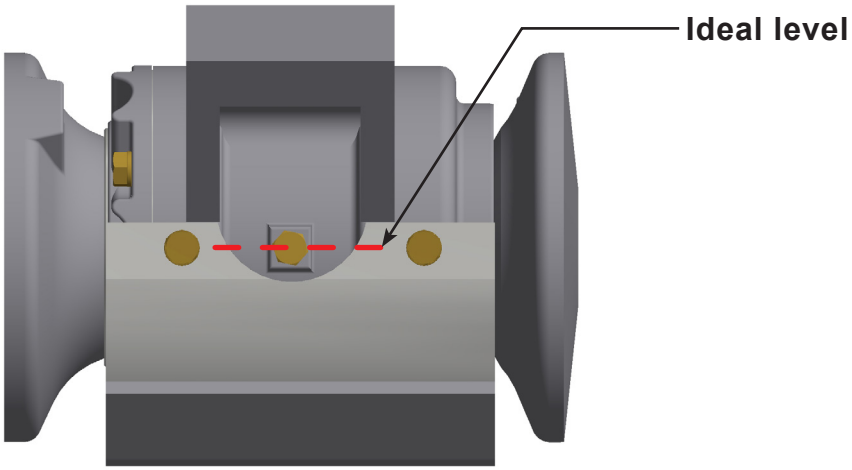
c) For the DMO bearings, it is necessary to follow the recommendations below:

1. 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.
2. Then, start to check weekly.
3. Change all the oil every 1,000 operating hours.
4. Use SAE 140 mineral oil only.

Lubrication

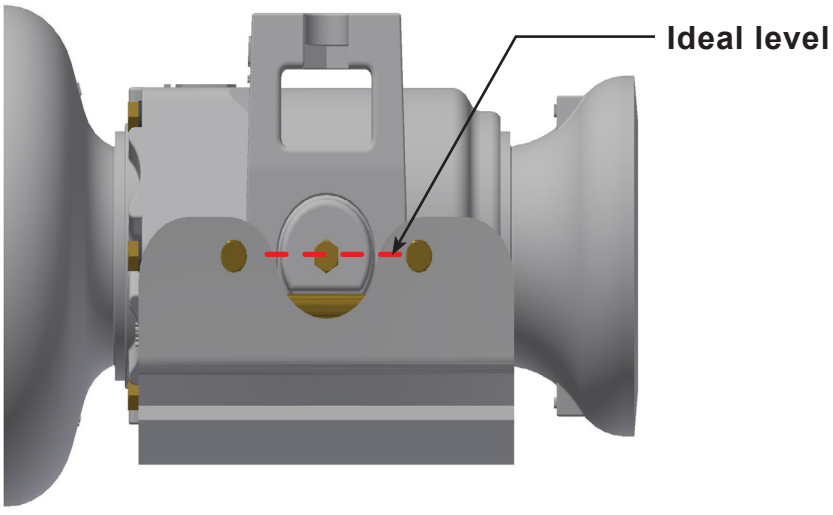
NOTE

- The suitable level is when the oil reaches the hole of the plug, being the disk harrow in a flat place.
- The oil volume on the DM bearings of the GAPCR-HD 8013 model is 650 ml.
- The oil volume on the DM bearings of the GASPCR-HD 9017 model is 980 ml.



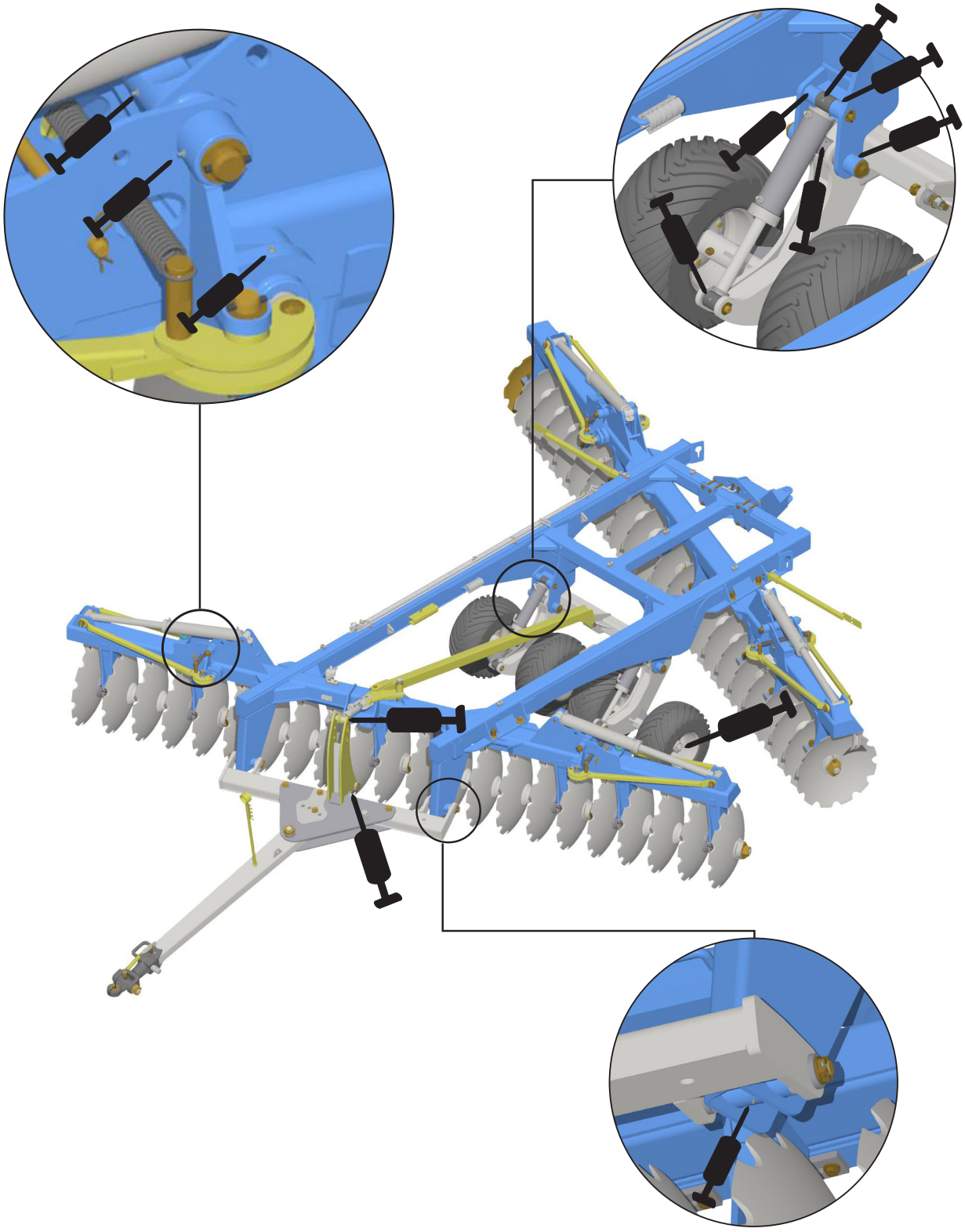
NOTE

- Duromark steel-plated bearing (DMO), assembled with a high-performance lubricant.
- The oil volume on the DMO bearings of the GASPCR-EHD 10020 model is 1200 ml.



Lubrication points

Lubricate every 24 hours of service.

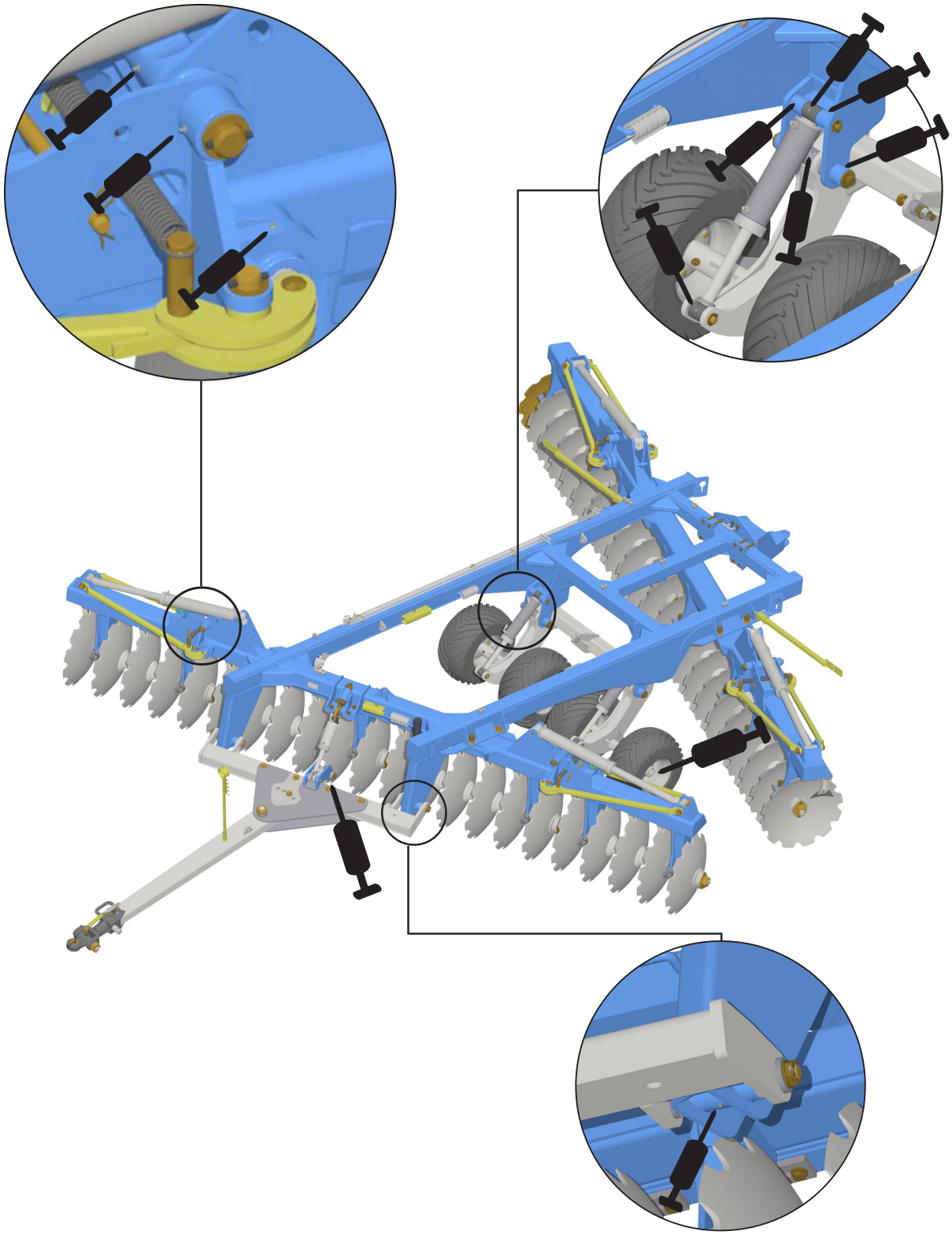


NOTE

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

Lubrication points

Lubricate every 24 hours of service.



NOTE

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

Wheel support hubs lubrication

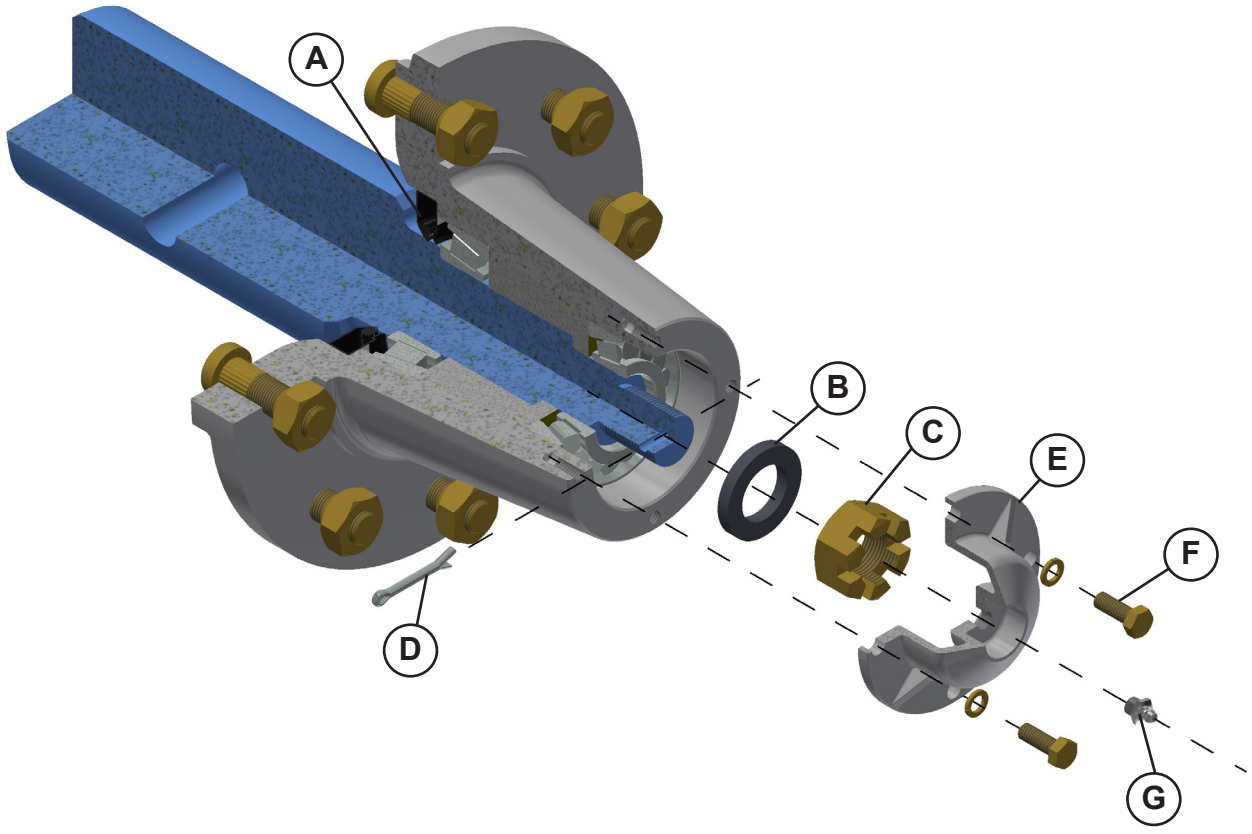
The wheel support hubs must be lubricated every 150 hours. When the existence of any clearance is noticed, carry out a maintenance on the wheel hubs.

1. Disassemble the hubs and remove their internal components. Clean all parts using diesel oil or kerosene.
2. 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.

• For models with 400/60 x 15.5 tires - 14 ply

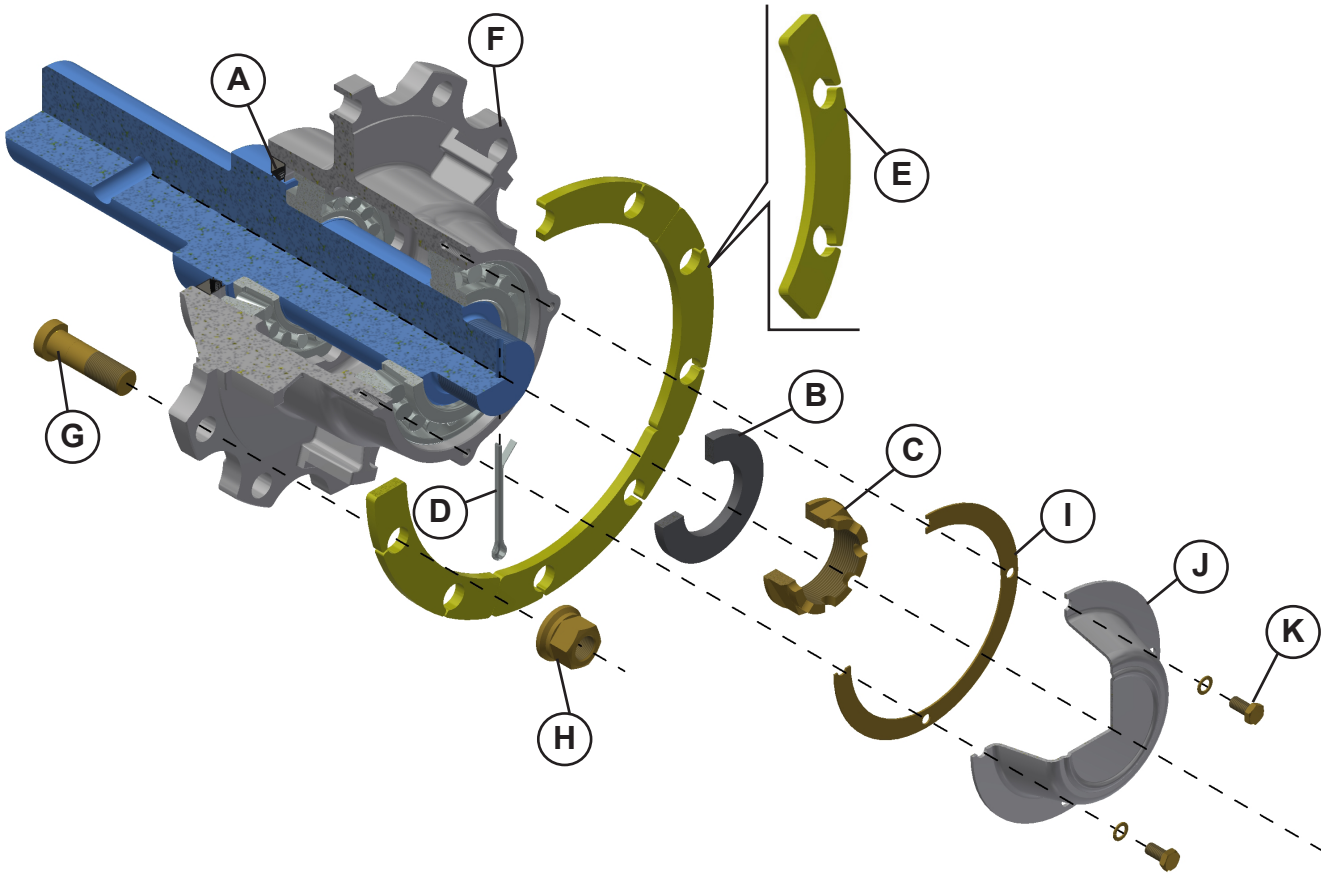
1. Check the retainer position (A) to let the excess of grease flow out of the hub and be careful to not damage the retainer.
2. Adjust the flat washer (B) and the castle nut (C) on the hub using a wrench to get some resistance while turning the hub. Do not totally tighten it. Lock it using a cotter pin (D).
3. Place the hubcap (E) and lock using a bolt (F) and spring washer. Lastly, attach the grease fitting (G) on the hubcap.



Wheel support hubs lubrication

- **For models with 9 x 20 tires - 14 ply and 600/50 x 22.5 tires - 16 ply.**

1. Check the retainer position (A) to let the excess of grease flow out of the hub and be careful to not damage the retainer.
2. Adjust the flat washer (B) and the castle nut (C) 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 (D).
3. Place 5 small flanges (E) on the wheel support hub (F) using a bolt (G) and nut (H). Place a dust cap (I) facing the hub (F), the hub cap (J) and lock using a bolt (K) 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.

Hydraulic cylinder maintenance

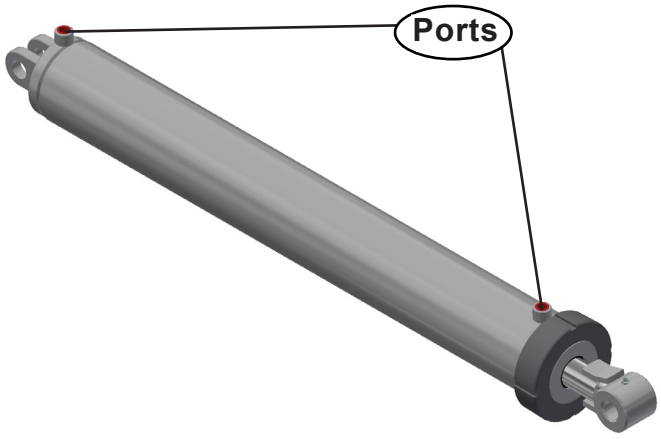
When cylinder repair is required, clean off unit, disconnect hoses and plug ports before removing cylinder.

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

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

You may require the following tools:

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



IMPORTANT

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

Disassembly:

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

NOTE

- Do not clamp rod by chrome surface.

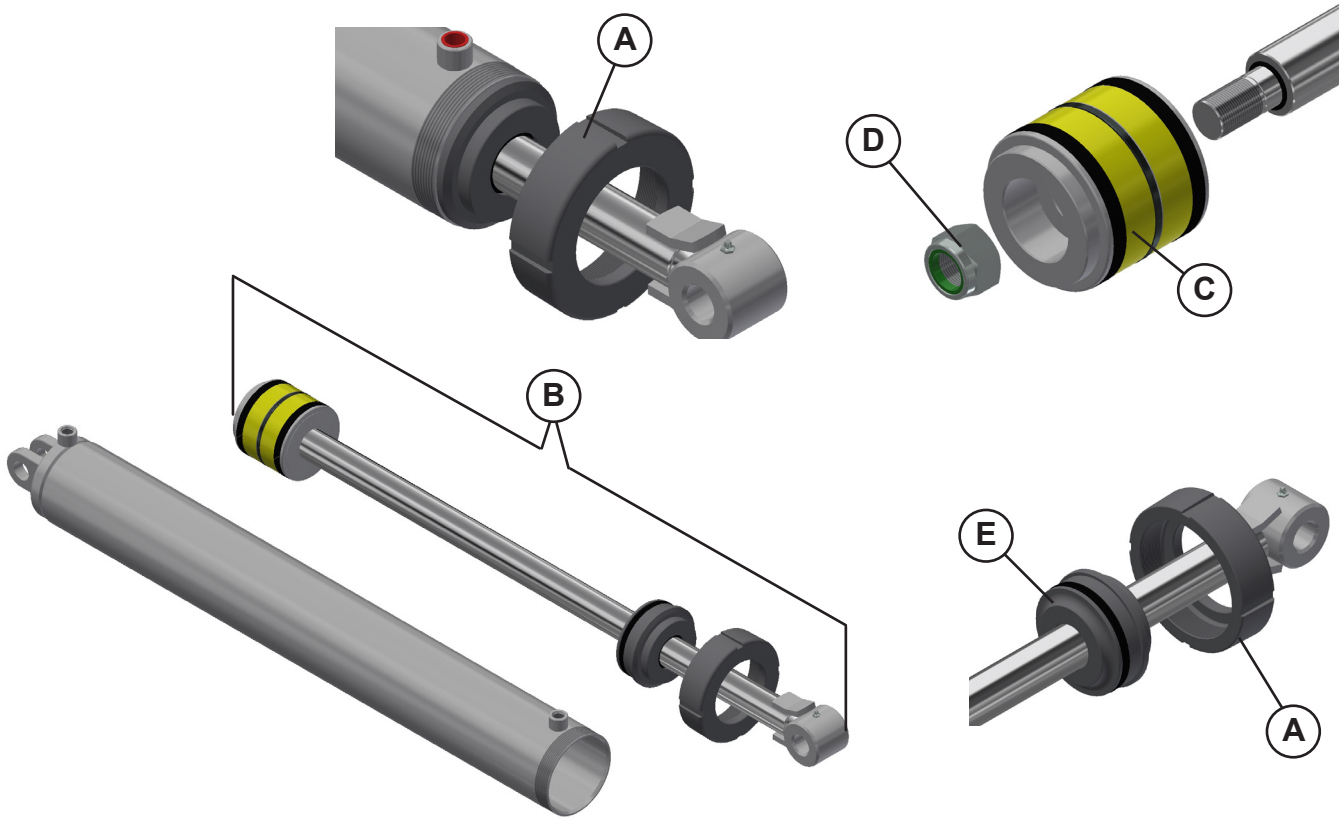
Hydraulic cylinder assembly

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 lb.ft** (**600 N.m**).

IMPORTANT

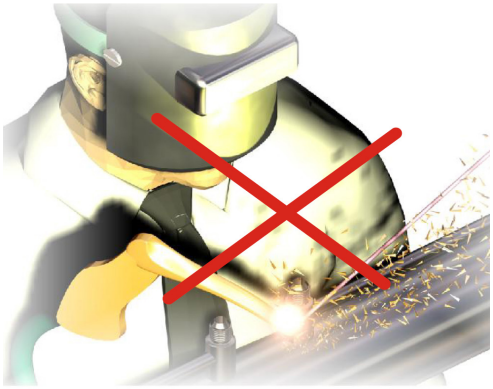
- Insert the gland (E) on the cylinder head and align it with the tube so it will fit correctly on the cylinder barrel.



NOTE

- Do not clamp rod by chrome surface.

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.

Troubleshooting guide

PROBLEM	CAUSES	POSSIBLE SOLUTIONS
Tractor steering wheel pulling to the right.	Too much angle on the front gang or too small on the rear gang.	Reduce the angle from the front gang or increase the angle from the rear gang.
	Drawbar touching the stop to the left.	Move the drawbar to the left.
Disc gangs are not on harrowing level.	Front and rear disc gangs are not operating on the same depth.	Adjust the angle of the disc gangs.
Furrow opened on the left side.	Speed is too low for the soil conditions.	Increase the speed.
	Tractor being positioned far on the right.	Position the tractor in a way that the front disc on the left pass on the edge of the furrow.
	Incorrect adjustment of the disc gangs laterally.	Move the rear disc gang to the left or the front disc gang to the right.
Windrows forming on the left side.	Insufficient overlapping. Incorrect rear disc gang adjustment.	If windrows are forming, move the front disc gang to the left or the rear disc gang to the right.
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.

IMPORTANT

- Only **QUALIFIED**, **CAPABLE** and **AUTHORIZED** personnel must carry out the maintenance of the equipment.

Troubleshooting guide

PROBLEM	CAUSES	POSSIBLE SOLUTIONS
Hydraulic cylinder leaking.	Damaged repairings.	Replace the repairings.
	Damaged rod.	Replace the rod.
	Oil with impurities.	Replace the oil, repairings and filter elements.
	Working pressure superior than the recommended one.	Adjust the control valve using the relief valve with the aid of a pressure gauge. Normal pressure: 180 kgf/cm^2.
Hoses leaking with fixed terminals.	Insufficient tightening.	Retighten carefully.
	Lack of sealing material on the thread.	Use thread sealing tape and retighten carefully.
	Damaged repairings.	Replace the repairings.
Locked disc gangs.	Wet field.	Let the field dry out or penetrate the disc blade superficially to help the drying process.
	Maximum angle on the disc gangs adjustment.	Reduce the angle.
	Deep penetration on wet soil.	Use the depth stops to decrease the depth.
		Lift the disc blade to reduce the penetration.
	Worn out / incorrectly adjusted scrapers.	Adjust or change the scrapers when necessary.

IMPORTANT

- Only **CAPABLE**, **QUALIFIED** and **AUTHORIZED** personnel must carry out the maintenance of the equipment.

Disk harrow maintenance

- During offseason wash the equipment, repair any damaged paintwork, protect the disc blades with oil and lubricate all grease fittings.

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

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

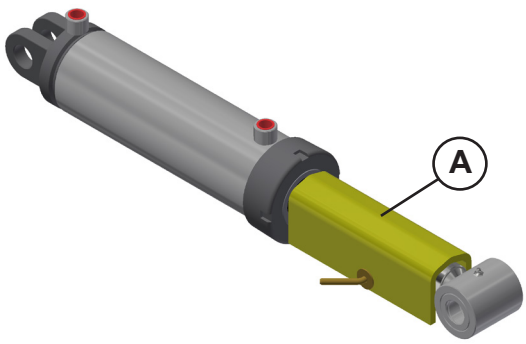
- Check wear occurence on all moving parts. Replace any part, if necessary.

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

- Always store the equipment on a dry place, protected from the rain and sunlight.

IMPORTANT

- When uncoupling the equipment from the tractor, lift it and place the locks (A) on the cylinders. Then, lower the equipment until it touches on the locks and place the jack using a pin and cotter pin.
- If it is necessary to totally lower the equipment, do not place the locks and neither the pin on the jack, as such act may cause damages to the jack itself.



NOTE

- Use TATU original parts only.
- Do not use chemical detergents to clean the equipment, as they may damage the paintjob.
- When any component is disassembled and is not going to be used anymore, send that part to a company that could recycle it and that respects the local law to avoid causing damages to the environment.

Tires inflation

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

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

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

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

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

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

400/55 x 15.5 tires ..... 16 ply **(Consult tire manufacturer)**

400/60 x 15.5 tires .....14 ply **(52 PSI)**

500/60 x 22.5 tires .....12 ply **(46 PSI)**

600/50 x 22.5 tires .....16 ply **(41 PSI)**

9 x 20 tires..... 14 ply **(110 PSI)**

Excess of pressure | **Lack of pressure** | **Correct pressure**

NOTE

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

Hourly income calculation

To calculate the hourly income, use the following calculation:

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

Where:

R = Hourly income;

L = Disk harrow working width (meters);

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

E = Efficiency: 0.90;

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

Example with a GASPCR-HD 9017 (22 disc blades):

R = ?

L = 4.62 m

V = 6,000 m/h

E = 0.90

X = 10,000 m^2

$$\mathbf{R} = \frac{4.62 \times 6{,}000 \times 0.90}{10{,}000}$$

R: The hourly income working with an equipment that has 22 disc blades will be approximately of 2.49 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.

Average income tables

Model	Number of disc blades	Cutting width (m)	Hourly income (ha)	Daily income (ha)
GAPCR HD 8013	21	3.71	2.00	18.00
	23	4.03	2.18	19.62
	24	4.03	2.18	19.62
	25	4.35	2.35	21.15
	27	4.67	2.52	22.68
	29	4.81	2.60	23.40
	31	5.13	2.77	24.93
	33	5.48	2.96	26.64
	35	5.77	3.12	28.08
	37	6.08	3.28	29.52
	39	6.54	3.53	31.77
	41	6.86	3.70	33.30
	45	7.50	4.05	36.45
	49	8.07	4.36	39.24

Model	Number of disc blades	Cutting width (m)	Hourly income (ha)	Daily income (ha)
GASPCR HD 9017	12	2.53	1.37	12.33
	14	2.95	1.59	14.31
	16	3.34	1.80	16.20
	18	3.80	2.05	18.45
	20	4.20	2.27	20.43
	22	4.62	2.49	22.41
	24	4.70	2.54	22.86
	26	5.40	2.92	26.28
	28	5.80	3.13	28.17
	30	6.20	3.35	30.15
	32	6.62	3.57	32.13
	34	7.04	3.80	34.20
	36	7.43	4.01	36.09

Average income tables

Model	Number of disc blades	Cutting width (m)	Hourly income (ha)	Daily income (ha)
GASPCR EHD 10020	12	2.88	1.55	13.95
	14	3.35	1.81	16.29
	16	3.81	2.06	18.54
	18	4.28	2.31	20.79
	20	4.75	2.56	23.04
	22	5.23	2.82	25.38
	24	5.70	3.08	27.72
	26	6.32	3.41	30.69
	28	6.77	3.66	32.94
	30	7.25	3.91	35.19

NOTE

- An average speed of 6 km/h was assumed to prepare the table above.

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

Example: An area of 50 hectares to be worked with a GASPCR-HD 9017 that has 22 disc blades (hourly income = 2.49 hectares).

So: $\frac{50}{2.49} = 20.08$

Approximately will be spent 20 (twenty) hours to work in an area of 50 hectares.

Torque table

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

TATU MARCHESAN

TORQUE TABLE

civemasa

Bolt Size (Inches) (a)	Grade 2		Grade 5		Grade 8	
	Lbs-ft (b)	N.m (c)	Lbs-ft	N.m	Lbs-ft	N.m
1/4" - 20	5,5	7,5	8,5	11,5	12	16,3
1/4" - 28	6	8,1	9,5	12,9	14	19,0
5/16" - 18	10,5	14,2	17,5	23,7	24,5	33,2
5/16" - 24	12	16,3	19,5	26,4	27,5	37,3
3/8" - 16	19,5	26,4	31,5	42,7	44	59,7
3/8" - 24	22	29,8	35	47,5	50	67,8
7/16" - 14	31	42,0	50	67,8	70,5	95,6
7/16" - 14	34,5	46,8	56	75,9	79	107,1
1/2" - 13	47	63,7	76	103,1	107,5	145,8
1/2" - 20	53,5	72,5	86	116,6	121,5	164,8
9/16" - 12	68	92,2	110	149,2	155	210,2
9/16" - 18	76	103,1	122,5	166,1	173	234,6
5/8" - 11	94	127,5	151,5	205,4	214,5	290,9
5/8" - 18	106,5	144,4	171,5	232,6	242,5	328,8
3/4" - 10	167	226,5	269,5	365,4	380,5	516,0
3/4" - 16	186	252,2	300	406,8	424,5	575,6
7/8" - 9	169,5	229,8	434	588,5	612,5	830,6
7/8" - 14	187	253,6	478,5	648,8	676,5	917,3
1" - 8	254,5	345,1	650	881,4	918,5	1.245,5
1" - 12	285,5	387,1	729,5	989,2	1031	1.398,0
1.1/8" - 7	360,5	488,8	921,5	1.249,6	1302	1.765,5
1.1/8" - 12	404,5	548,5	1033,5	1.401,4	1460	1.979,8
1.1/4" - 7	508,5	689,5	1300	1.762,8	1837,5	2.491,7
1.1/4" - 12	563,5	764,1	1439,5	1.952,0	2034,5	2.758,8
1.3/8" - 6	667	904,5	1704,5	2.311,3	2408	3.265,2
1.3/8" - 12	759,5	1.029,9	1940	2.630,6	2741,5	3.717,5
1.1/2" - 6	885,5	1.200,7	2262,5	3.068,0	3197	4.335,1
1.1/2" - 12	996	1.350,6	2545,5	3.451,7	3597	4.877,5

a) Nominal thread diameter in inches-threads per inch
b) Foot pounds
c) Newton-meters
d) Nominal thread diameter in millimeters x thread pitch

Bolt Size (Metric) (D)	4.6		8.8		10.9	
	Lbs-ft	N.m	Lbs-ft	N.m	Lbs-ft	N.m
M5 x 0.8	2,5	3,39	5	6,78	8,5	11,526
M 6 x 1	3	4,068	8	10,85	11,5	15,594
M 6 x 0.75	3,5	4,746	8,5	11,53	13	17,628
M 8 x 1.25	7	9,492	19,5	26,44	28	37,968
M 8 x 1	8	10,848	21	28,48	30,5	41,358
M 10 x 1.5	14	18,984	38,5	52,21	56	75,936
M 10 x 1	16	21,696	43	58,31	63	85,428
M 12 x 1.75	25	33,9	66,5	90,17	98	132,888
M 12 x 1.25	27	36,612	73	98,99	107,5	145,77
M 14 x 2	40	54,24	107	145,09	156,5	212,214
M 14 x 1.5	43	58,308	115,5	156,62	169	229,164
M 16 x 2	62	84,072	165,5	224,42	243,5	330,186
M 16 x 1.5	66,5	90,174	177	240,01	260	352,56
M 18 x 2.5	86	116,616	229	310,52	336	455,616
M 18 x 1.5	96,5	130,854	257	348,49	378	512,568
M 20 x 2.5	121,5	164,754	323,5	438,67	475	644,1
M 20 x 1.5	134,5	182,382	359	486,80	527	714,612
M 22 x 2.5	165,5	224,418	441	598,00	647,5	878,01
M 22 x 1.5	182	246,792	484	656,30	711,5	964,794
M 24 x 3	210	284,76	559	758,00	821	1113,276
M 24 x 1.5	238,5	323,406	636	862,42	933,5	1265,826
M 27 x 3	307	416,292	820	1111,92	1204	1632,624
M 27 x 1.5	344	466,464	918	1244,81	1348,5	1828,566
M 30 x 3.5	416,5	564,774	1111,5	1507,19	1632,5	2213,67
M 30 x 1.5	477,5	647,49	1273	1726,19	1870	2535,72
M 33 x 3.5	567	768,852	1512,5	2050,95	2221,5	3012,354
M 33 x 1.5	641,5	869,874	1709,5	2318,08	2511	3404,916
M 36 x 4	729	988,524	1943	2634,71	2854	3870,024
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.

ATTENTION!

- **MARCHESAN S/A** reserves the right to make improvements in the design, material or specifications of machinery, equipment or parts at any time, 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

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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 toxidade dos gases expelidos.

5 - Faça todos os lastreamentos 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 abaixe 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.

⚠ ATENCION

- RECOMENDACIONES GENERALES DE SEGURIDAD -

1 - Solamente personas con el completo conocimiento del tractor y de los implementos deben conduzirlos.

2 - Para enganchar 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 la toxicidad de los gases expelidos.

5 - Proceda con los lastres necesarios para traccionar equipos que asi 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 movibles 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 rotativas (cortamalezas) 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 presion antes de desconectar cualquier tuberia.

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 termino del trabajo, los equipos deberán ser desenganchados y debidamente apoyados en el suelo o sobre caballetes, aliviando el hidráulico del tractor.

18 - No transitar en carreteras o caminos pavimentados.

19 - Los implementos agrícolas, como: rastras, arados y otros, tienen normalmente organos activos afilados, con bordes cortantes que ofrecen riesgos de accidentes, aún cuando detenidos, por lo tanto, estos deben ser mantenidos en local apropriado, 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 tractors 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 other 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 tractors parking brake and remove the key.

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