

ARAGON

COMPACT DISC HARROW



ISO 9001:2008



En

USER MANUAL

SPARE PART LIST

ILGI

For Better Farming



DEAR CLIENT

We thank you for choosing İLGI TARIM MAKİNA, which is in service for more than 45 years without sacrificing its quality.

You have bought one of our products by choosing it from our wide product range. First of all, enjoy your new product; we are sure it will contribute to your agricultural activities.

Control the machine you received basing on the dispatch note and receive it in full.

Before the first use, please pay attention to the warnings and instructions specified in this manual. Demand your spare parts from the spare parts list by its part number. Make your machine's maintenances regularly as it is specified in the manual.

Dear client; our manuals are being updated regularly. Please make contributions by your proposals. You can convey us all kind of suggestions and complaints by mail, fax etc.

May you have wide crop.

İLGI TARIM



INDEX

- 1. SECURITY MEASURES 4**
 - 1.1 BEFORE STARTING TO USE 4
 - 1.2 WARNING SIGNS 4
 - 1.3 WARNING SIGNS SETTLEMENT PLAN 7
 - 1.4 SAFETY RULES DURING WORKING 8
- 2. INTRODUCTION OF THE MACHINE 11**
 - 2.1 INTRODUCTORY AND BASIC INFORMATION RELATED WITH THE PROPERTIES OF THE MACHINE .. 11
 - 2.2 GENERAL STRUCTURE AND PARTS OF THE MACHINE 11
- 3. USAGE INFORMATION AND ADJUSTMENTS 14**
 - 3.1 MACHINERY TRACTOR COMPLIANCE 14
 - 3.2 TO MOUNT AND DETACH IT FROM THE TRACTOR 15
 - 3.3 PRELIMINARY PREPARATIONS AND THE RULES THAT MUST BE COMPLIED FOR THE USAGE 15
 - 3.4 WORKING DEPTH ADJUSTMENT 16
 - 3.5 PARALLELISM ADJUSTMENT OF THE WING 17
 - 3.6 RIGHT-LEFT AND FRONT-REAR PARALLELISM ADJUSTMENT 17
 - 3.7 FLANK FURROW CONCEALING ADJUSTMENT 18
 - 3.8 DISC ROLLER SCRAPER ADJUSTMENT 19
 - 3.9 FRONT - REAR DISC TRACE ADJUSTMENT 20
- 4. TILLAGE TECHNIQUE WITH THE CULTIVATOR 22**
- 5. MAINTENANCE AND REPAIR 24**
 - 5.1 MAINTENANCE-REPAIR WHICH CAN BE DONE BY USER AND THE RULES THAT MUST BE COMPLIED ... 24
 - 5.2 LUBRICATION - GREASE FITTING SCHEMATIC 24
 - 5.3 SPACE CONTROL FOR CARRYING SYSTEM WHEELS AND THEIR ADJUSTMENT 27
 - 5.4 SPACE CONTROL FOR DISC HUB BEARING AND ADJUSTMENT (AT GREASE FITTING BEARINGS) ... 28
 - 5.5 END OF SEASON MAINTENANCE 29
 - 5.6 VALUES FOR BOLT TORQUE 30
- 6. CIRCUIT SCHEMATICS 31**
 - 6.1 REAR AXLE – CARRYING SYSTEM HYDRAULIC CIRCUIT SCHEMATIC 31
 - 6.2 WING FOLDING HYDRAULIC CIRCUIT SCHEMATIC 32
 - 6.3 REAR TRAFFIC WARNING SYSTEM ELECTRICAL CIRCUIT SCHEMATIC 33
- 7. POSSIBLE FAILURES AND TROUBLESHOOTING 34**
- 8. TECHNICAL FEATURES 35**

1. SECURITY MEASURES

1.1 Before starting to use

Learn what all the warning and information signs mean on the machine. Read and learn carefully the maintenance instructions manual. Dangerous consequences may occur in case of false and inattentive use of the equipment..



READ AND CARRY OUT CAREFULLY THE SECTIONS WHERE THIS SIGN IS AVAILABLE



Read the manual carefully and make sure you understand it! Do not stand between the equipment and the tractor. Wear suitable working clothes.

1.2 Warning signs







Machine's Serial Number Label



İLG 210

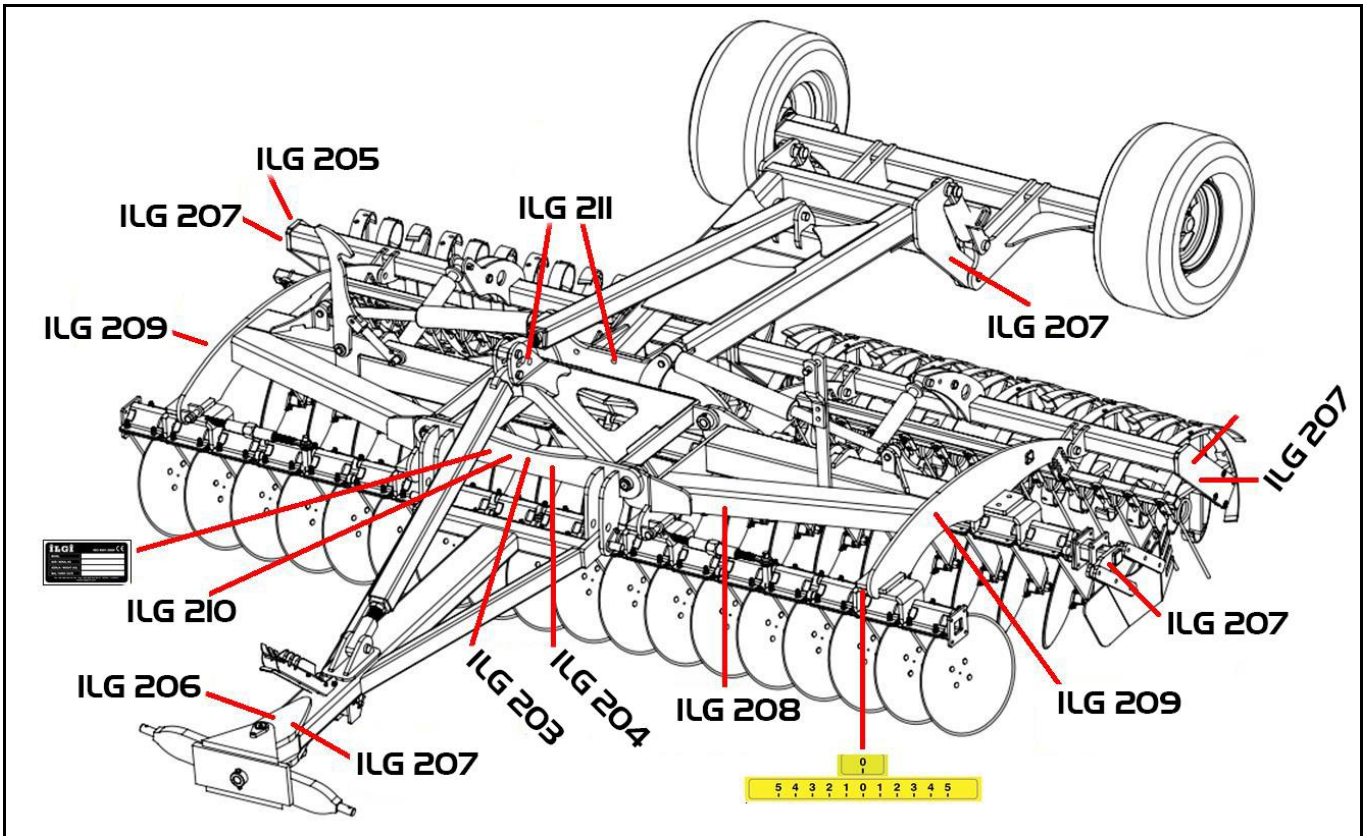
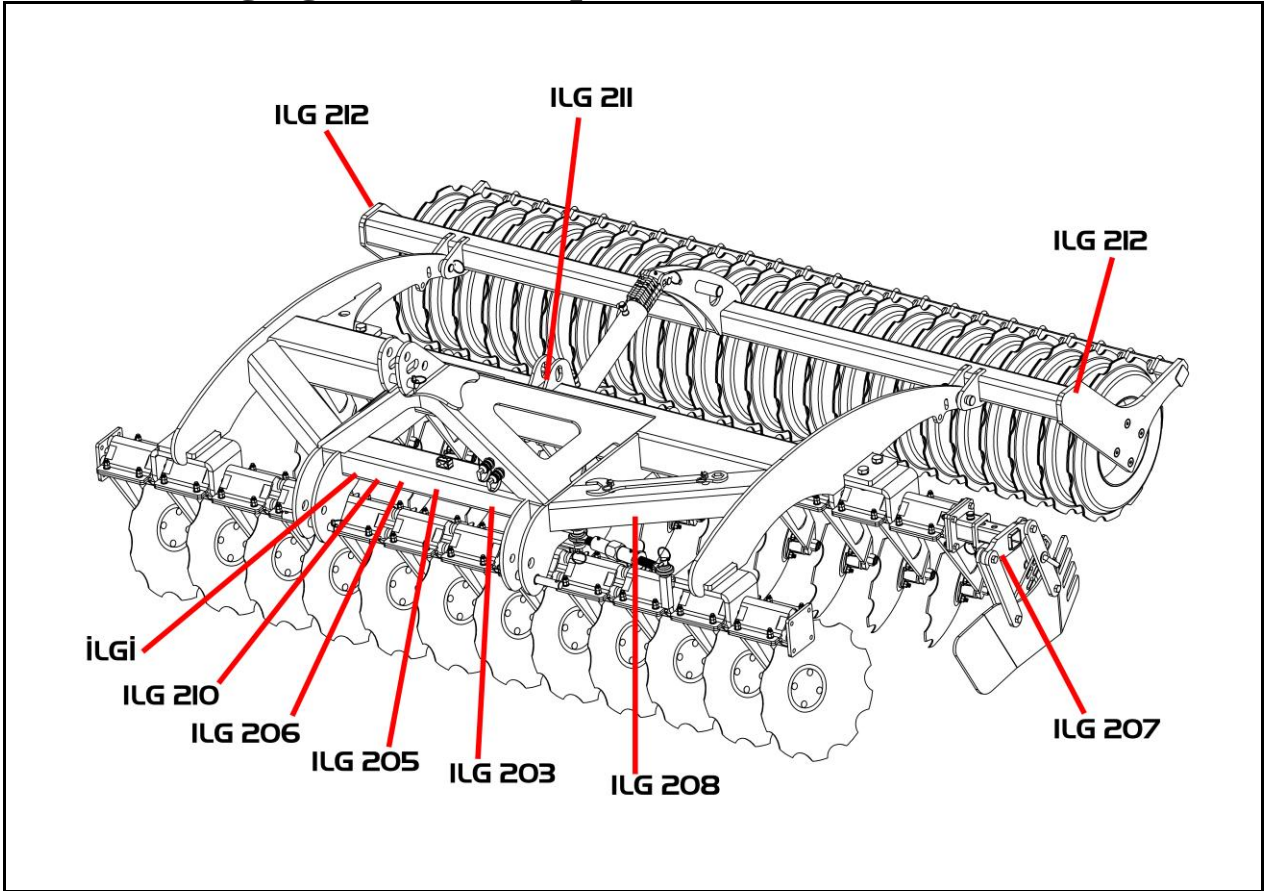


Before starting to use the machine, read the maintenance instructions manual carefully

<p>ILG 203</p>	<p>The CE Mark, indicates that the machine is in accordance with the EU legislations.</p>	
<p>ILG 207</p>		<p>The risk to squeeze your hand or foot between the parts.</p> <p>Don't put any of your organs between shearing moving parts in the signed area.</p>
<p>ILG 205</p>	<p>The risk to get squeezed between the tractor and the equipment</p> <p>Don't enter between the tractor and the equipment.</p>	
<p>ILG 208</p>		<p>The risk of slipping and falling from the chassis of the machine.</p> <p>Please don't step up onto the machine or to use as a platform.</p>
<p>ILG 209</p>	<p>The risk of hit of the turning, folding that is to say moving parts. This danger may result in injuring or death risk.</p> <p>Don't enter the movement area of the parts during the running of the machine</p>	
<p>ILG 206</p>		<p>In case of spotting oil leakage on the hydraulic components the power source must be stopped</p> <p>Control and prevent all the leakages in the hydraulic circuit.</p>

<p>ILG 204</p>	<p>The oil leakages on the hydraulic circuit must be controlled carefully as there is high pressure in that circuit. The pressurized oil may harm your body or skin. Don't try to control and to close the oil leakages manually. Prevent the leakage by carefully reading the instruction manual. Appeal to a health organization in case of any injure.</p>	
<p>ILG 201</p>	<p>Obey all the work safety rules and take precautions during all your installations and repair works. Otherwise there is the risk of injure and death. Take precautions against the slipping and starting to work by itself. Read the relevant sections on the instructions manual and pay attention to the warnings.</p>	
<p>ILG 202</p>	<p>The maximum working pressure of the hydraulic system is 200 bars.</p>	
<p>ILG212</p>	<p>The pieces (stone, clay, machine piece etc.) which can pop out from the machine can cause to injures. Don't get to the machine much closer than the safety distance.</p>	
<p>ILG 211</p>	<p>During the machine's embarkation or transportation, it must be elevated from the points where there are this sign.</p>	

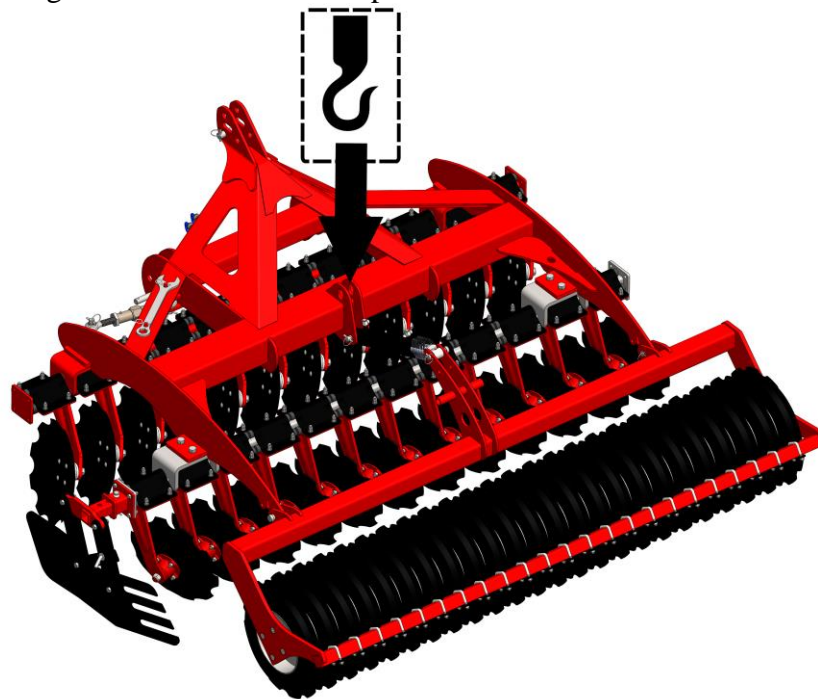
1.3 Warning signs settlement plan



1.4 Safety rules during working

Before Working

- Read carefully all instructions if you're going to use the machine for the first time. Refer to manufacturer company for the matters if you have any suspect.
- The valid rules for safety and protecting against accidents of vocational chambers must be taken into consideration right alongside the instructions of this user manual that belongs to the machine.
- Use appropriate working clothes. Never use hanging clothes. These clothes can be caught by turning and moving machine parts.
- Be careful to lift the machine balanced from indicated points on the machine during transporting the machine to another place.



- Ensure that the person who will operate the tractor which the machine is mounted on must have a driver license, must be an experienced and trained driver.
- Be sure that there aren't other people especially children and pets around the machine before operating the machine, the tractor. Take necessary measures in order to see the environment easily.
- The exhaust gas is poisonous. Therefore the tractor shouldn't be operated in inconvenient and closed areas.
- Front and rear weights for the tractor must be mounted if necessary in the event of any equipment to be installed on the tractor.
- Ensure that the system isn't under pressure before detaching hydraulic hoses and pipes.
- An oil leakage that is under pressure may be dangerous. Shield, protective goggles and gloves must be worn while searching the leakages in order to prevent serious injuries. The oil pressure must be reduced before starting to work with hydraulic system. Ensure that the hydraulic hoses are fastened to proper outputs.
- Please note that the machine mounted on the tractor will change some functions (brake distance, steering wheel control, center of gravity) of the tractor.
- Pressure of the wheels must be checked before outgoing.

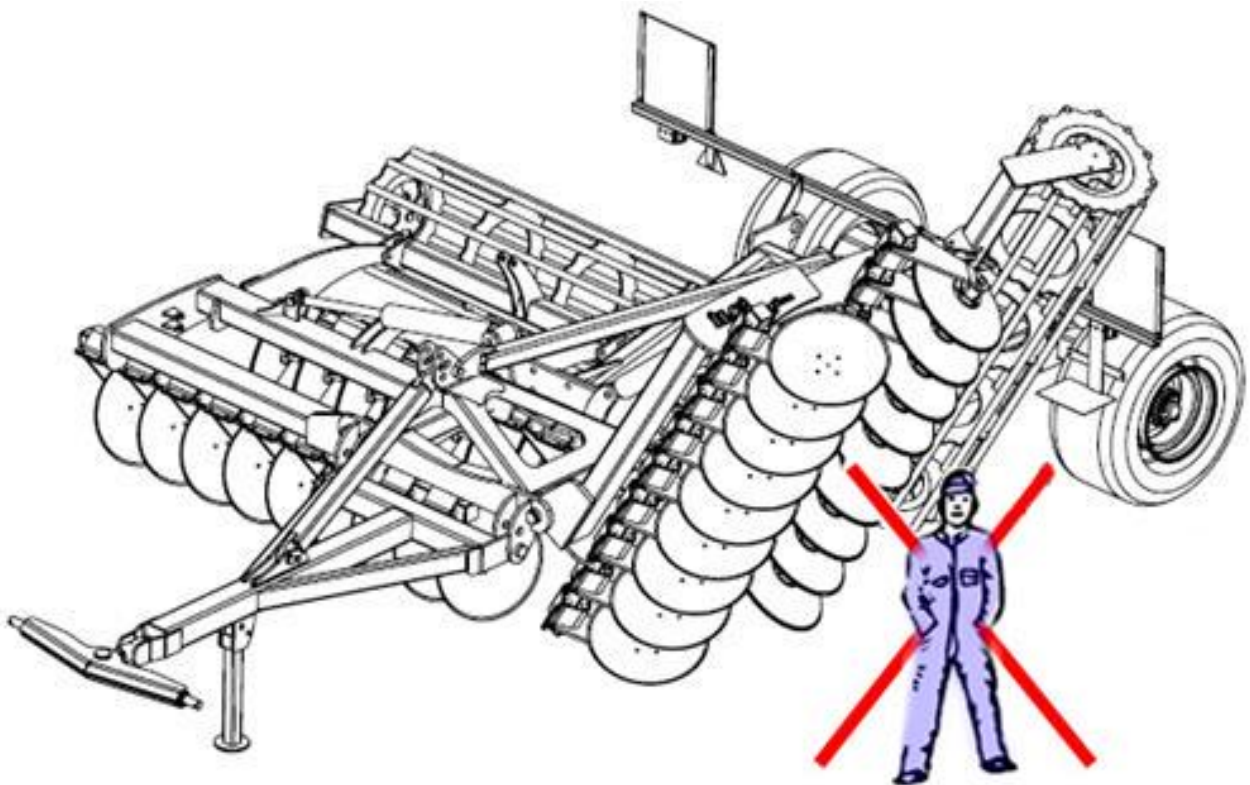
- Mount your machine to a tractor which has an appropriate pulling and hydraulically lifting system.
- Apply the parking brake and shift the gear into neutral of the tractor before mounting the machine on the tractor.
- Ensure that there is nobody between the machine and the tractor during the machine is being mounted on and detached from the tractor.
- Start to work with your machine and tractor after all safety measures are taken.
- Special pulling pins must be used while mounting the machine to the tractor; those can endure machine strength and have appropriate thickness.
- Waste materials such as nylon, clothe and obstacles such as tree roots must be cleaned, obstacles (irrigation sets etc.) in the field must be smoothed.
- Never operate in fields with plenty of stones.
- Be careful for the operating area of hydraulic lifting wings. There is a risk of crushing and squeezing.
- It is necessary to be sure about all systems and operating components as well as their functions before starting to work.
- Warning and explanatory signs (labels) on the machine set forth important explanations in order to provide an operation free from danger. It is important to observe these warnings on the signs for your safety. Replace right away the warnings and explanatory labels in case of being damaged.
- Moving direction of the machine parts which operates hydraulically or by spring force must be taken into account. There is a risk of striking, crushing and squeezing.
- All adjustments explained in the machine manual must be set before starting to operation.

During Operation

- The machine must be stopped in case of an abnormal voice is heard while running of the machine.
- The tractor must be set into motion by softly clutching. Sudden and strong movements may cause dangerous jumping up and rearing up especially while going upwards and pulling loads.
- One or a few passenger never being carried during the tractor in motion except the person who drives the tractor unless the tractor sitting areas are equipped properly.
- Never try to run the tractor or execute maneuvers before the driver sits its chair.
- Never permit anybody to climb on the machine during operation in the field as well as going and coming back from the field.
- Comply with required traffic rules; take safety measures when you go to traffic with your tractor mounted with the machine. Completely comply with instructions for protecting against accidents and safely usage.
- Moving and turning parts never handled.
- Before handling the machinery components, wait them until stop entirely.
- Do not enter between the tractor and the machine while the tractor operating unless the park brake engaged and the wheels hindered with wedges.
- Never put weights on, never permit people climb on, never insert your hands into the machine during operation.
- Never leave the driver sitting area if the tractor is running.
- Be careful of the danger of overthrowing while working in sloping fields.
- Shouldn't go backwards during the operation.
- Never approach the machine, never let people to approach the machine during the operation
- Proper plowing must be performed against the danger of erosion.
- During operation, never insert your arms and feet between the tractor and the machine or never hold the machine.

After finishing of the operation

- Before leaving the tractor, take down the machine mounted on the hydraulic. Apply parking brake, take the engine key after turning off the engine.
- Ensure that it must be taken down the ground completely before leaving the equipment mounted on rear side of the tractor at the end of the operation.
- If it is possible, the tractor must be parked on a smooth place and in this position be shifted in any of the gears and be applied the park brake. If it is to be parked on a sloping field, must be shifted in 1. Gear for uphill, rear gear for downhill and park brake must be applied for both of these situations.
- The machine must be kept clean against the danger of fire.
- The machine will be ready for operation after equipped with all protective systems and taken into safety condition.
- Never stand within the turning and swaying area of the machine.
- Never climb on; never crawl under the machine while the machine mounted on the tractor. Because the machine can bring down at any moment and severe injuries may occur.
- The hydraulic system must be in neutral position while leaving the tractor.



Do not enter into the parts' movement area during folding and opening of the wings.

2. INTRODUCTION OF THE MACHINE

2.1 Introductory and basic information related with the properties of the machine

- It provides mixing by processing the soil with certain depth through going directly into the field or after plowing in order to prepare the soil to be planting.
- It blends the plant stems and remnants into the soil by tearing them into pieces which are left in the field after the harvest. Creates mulch.
- It comminutes the soil and crumbles the clods formed in the field after usage of tools such as plow, chisel and cultivator.
- Enables the preparation of seed beds and seedling beds.
- It is effective in struggle for the weeds, comminutes the herbs, blends them into the soil and so enables them to be removed and to be dried.
- Enables the blending of organic and inorganic fertilizers into the soil by taking them under the earth.
- It can operate faster than the other disc soil processing machines. Its' processing quality increases depending on the soil characteristic and humidity condition upon climbing up to 15 km / h speed. Comminuting and blending affects are greater because of vibratory running of the discs. Less need for tractor power. It is more economical than other soil processing machines because of it has greater running speed. Fuel-oil, time, labor and maintenance, spare parts costs are smaller.
- Enables the aeration, fluffing of the soil by stirring and mixing the soil, enables the balance of water and temperature environment.
- It can be used easily and without being forced in every kind of soil.

2.2 General structure and parts of the machine

This disc cultivator is manufactured without folding up to 3.5 m work widths and with folding over this width.

Each of front – rear disc groups consist of separate bedded discs. The discs are connected to battery profile with rubber springs at an angle of 14 degrees if it is in perpendicular direction and at an angle of 18 degrees depending on the direction of flow. Spaces between the discs are 24.5 cm. The disc groups are placed as the rear discs operate through the front discs. Front – rear disc trace adjustment is made by moving front battery towards right - left. (See adjustments)

The folding models are manufactured as towed-type. The wings are taken as folded by hydraulic cylinders depending on the working condition to road condition. It can be used as a suspended type if desired when tractor properties are suitable. The wings are automatically locked for safety during road condition, and automatically opened by hydraulic cylinder when they are being opened.

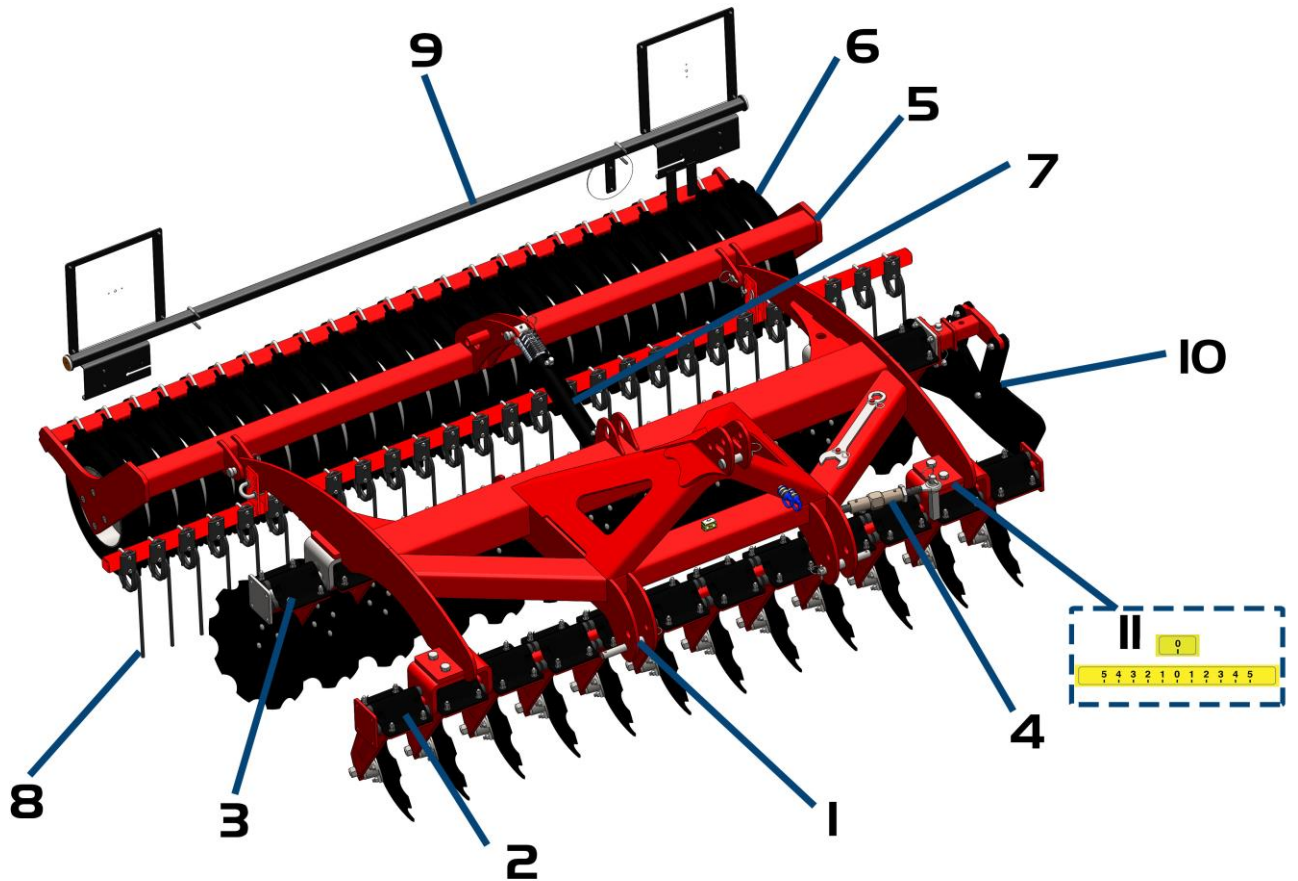


FIGURE 1

- | | |
|---|---|
| <ul style="list-style-type: none"> 1- Main chassis and Three point hitch system 2- Front disc group 3- Rear disc group 4- Front-rear disc trace adjustment 5- Roller chassis | <ul style="list-style-type: none"> 6- Roller 7- Working depth adjustment screwed setting handle (Hydraulic cylinder optional) 8- Rake (optional) 9- Traffic sign and lamp group 10- Trace remover 11- Disc trace adjustment scale |
|---|---|

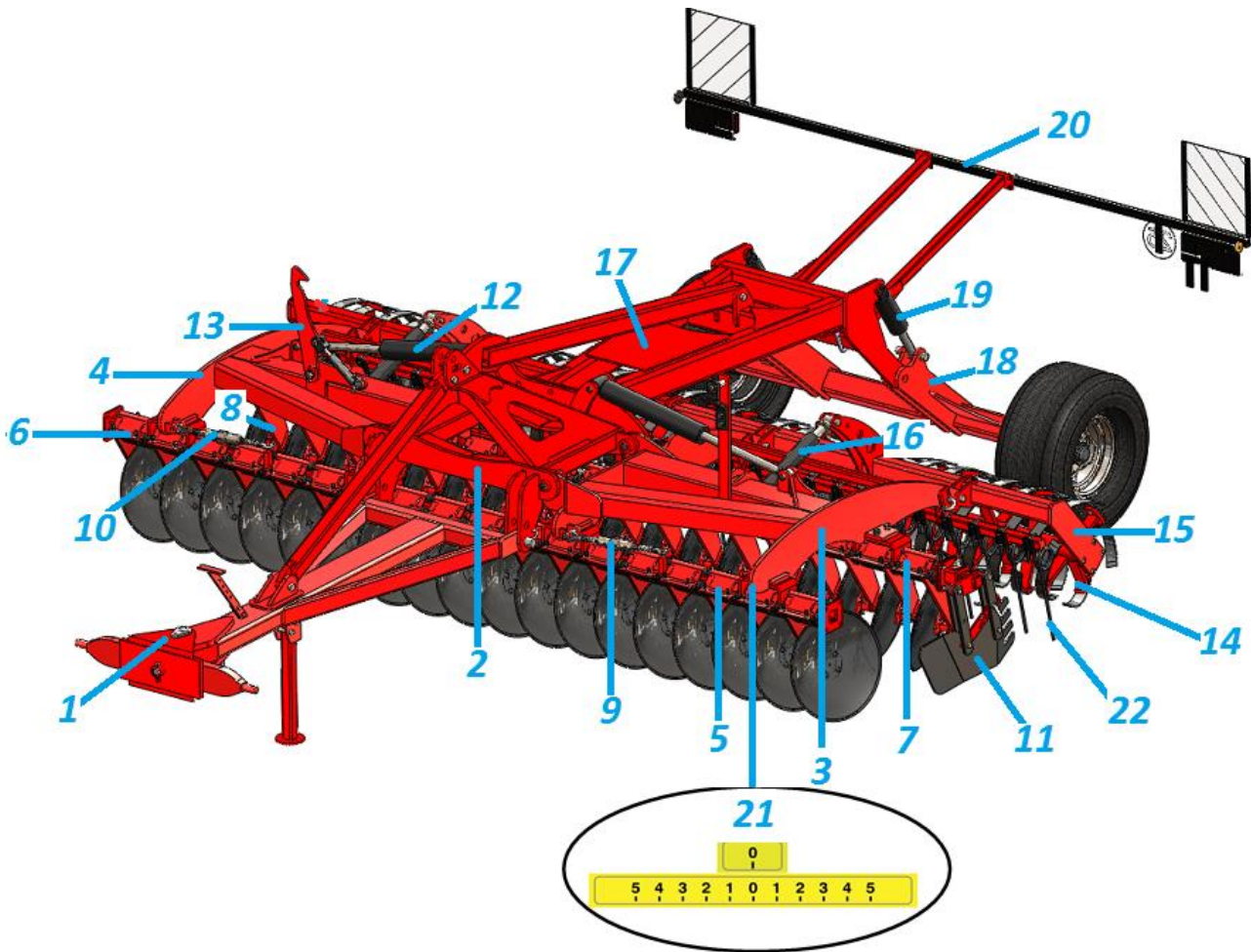


FIGURE : 2

- 1- Tow part and the arrow
- 2- Middle chassis – Three point suspension system
- 3- Left folding wings
- 4- Right folding wings
- 5- Front-left disc group
- 6- Front-right disc group
- 7- Rear-left disc group
- 8- Rear-right disc group
- 9- Front-left disc trace adjustment
- 10- Front-right disc trace adjustment
- 11- Trace remover
- 12- Wing folding hydraulic cylinders
- 13- Wings road condition hydraulic safety lock
- 14- Roller battery
- 15- Roller chassis
- 16- Working depth adjustment screwed setting handle (Hydraulic cylinder optional)
- 17- Road condition carrying system
- 18- Axle and carrying wheels
- 19- Carrying system road condition hydraulic cylinder and safety lock
- 20- Traffic warning and lamp group
- 21- Disc trace adjustment scale
- 22- Rake (optional)

3. USAGE INFORMATION AND ADJUSTMENTS

3.1 Machinery tractor compliance

The tractor and the machine should be;

- Connecting rods measuring compliance must be (2. Or 3. Category).
- It must have towing-power compliance: Towing power needs determined for Aragon models explained in the table of technical properties. Model selecting must be made by soil characteristic taken into account. Example: 44-disc (5 m work width) is recommended for a 230 HP tractor. This selection must be considered as 40 disc (4.5 m work width) if soil condition is hard. Otherwise it can't operate under the condition of normal work width and running speed required to be (10-16 km/h).
- Tractor front rear load balance must be provided for suspended type machinery. Additional weight must be put in front of the tractor if the tractor rearing up in case of removing the machine.



Select a Aragon model appropriate with the power of your tractor. Ensure the equipment – tractor weight balance with tractor front weights.

Otherwise your driving safety will be risky, you can't utilize entirely tow-power of your tractor.

Tractor upper connecting rods direction must be towards about tractor transmission, machinery upper connecting alternative holes must be used if (A) direction is not suitable. **FIGURE 3**

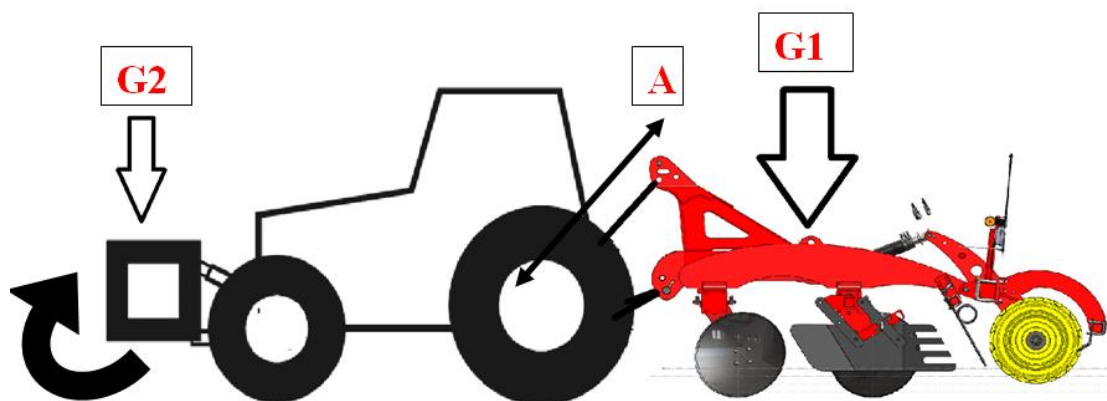


FIGURE 3



**G 2 WEIGHT TOGETHER WITH G 1 WEIGHT MUST CREATE SCALES BALANCE
And FRONT WEIGHT BALANCE MUST BE OVER BY 10-20%
G2 WEIGHT AMOUNT THAT WILL BE USED IN THE FRONT MUST BE DETERMINED
ACCORDING TO THIS
AFTERWARDS THIS WEIGHT MUST BE ATTACHED**

3.2 To mount and detach it from the tractor

Our mountable type models

To be mounted on the tractor at rear three point suspension places. It is suitable for category 2 and category 3 connections. You may need to attach additional front weights to your tractor by taking into consideration of machinery total weight before mounting to the tractor. This additional front weight amount may change depending on the weight of front-rear axle of the tractor, and you may need to attach additional weights to front side if a rearing-up occurs in front of the tractor when you lift after mounting the machine.

A pair of hydraulic hoses of the hydraulic cylinder, which adjusts roller height from the ground as well as working depth, is attached to the hydraulic outputs of the tractor.

Our trailed-type models are mounted to the tractor with a special tow-mechanism at lower suspension arms, the tow which can rotate to horizontal and perpendicular axis together with tow arrow with adequate length, enables easy rotations in narrow areas. Height from the ground of lower connecting rods is adjusted according to the machine front-rear parallelism. The tractor hydraulic front selecting rod must be at check position.

Towed type disc cultivator also can be used as a suspended type by detaching front arrow and rear carrying mechanism. In case of getting and using as a suspended type, tractor weight balance must be ensured correctly, adequate weight addition must be put in front of the tractor.

Three pairs of hydraulic hoses connected to hydraulic systems, of rear carrying mechanism and wing chassis folding mechanism and roller depth adjustment mechanism, are connected separately to hydraulic outputs of the tractor.

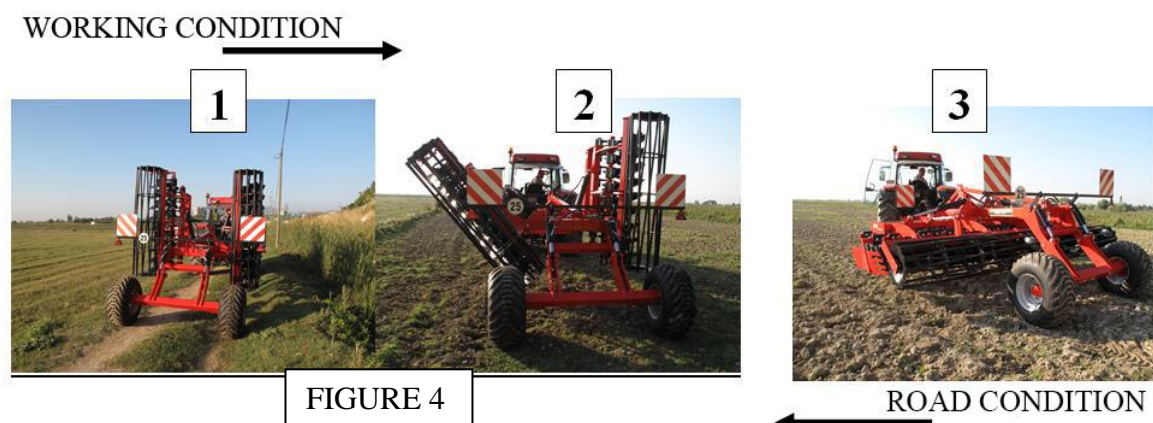
At the end of the operation, the hydraulic lock is checked if it operates automatically, afterwards can be taken the road. The chassis of the wings are lowered, front arrow support is opened, and it is taken down onto carrying wheels and front rear support on a smooth ground. First hydraulic fast connections are detached, then lower connecting-rods are detached.

3.3 Preliminary preparations and the rules that must be complied for the usage

Take into working and road condition this folding towed type machine can be switched to working condition from road condition by opening hydraulically of wing chassis.

Taking into working condition: (FIGURE 4: Procedure 1 -3)

1. Process: The machine is placed on a smooth area when enter into the field.
 2. Process: The wings are fully opened by moving wing cylinders at the hydraulic control center of the tractor.
 3. Process: The machine is taken down the ground by wheel cylinder and tractor three point suspension hydraulic and starts to cultivate the soil. Working depth should be adjusted at the roller.
- Taking into road condition: (FIGURE 4: Procedure 3-1): The opposite of the taking into working condition is performed.





Check for the locking of automatic hydraulic road lock while in road condition.

3.4 Working depth adjustment

The working depth hydraulic adjustment system;

Hydraulic adjustment

- The working depth (a) is adjusted at the roller depth hydraulic cylinder (A) (Figure 5.b)
- The working depth decreases upon the hydraulic cylinder is lengthened.
- 10 mm and 20 mm clips are used in order to ensure stable adjustment of working depth at hydraulic cylinder adjustment. Each clip with a thickness of 10 mm creates 13 mm working depth.
- It must be taken into consideration that the clips numbers which are attached to right and left wing cylinder must be equal for the folding models.

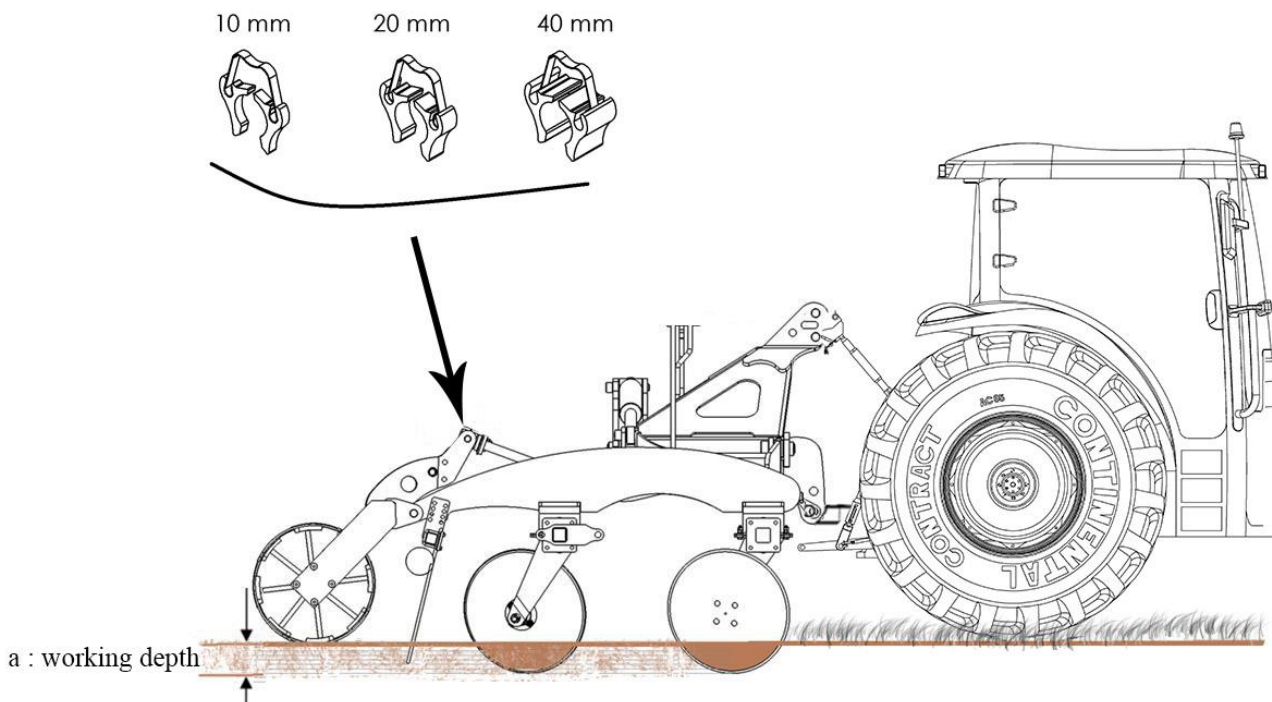


FIGURE 5



Always check and adjust the working depth of the discs as required before starting the operation and after operating a while.



These working depth values indicated above may vary depending on the soil characteristic in the field conditions.

3.5 Parallelism adjustment of the wing

- The chassis must be in same direction and parallel to ground surface when the wings opened at folding models. (figure 6)
- If this parallelism is out of order, the screwed tuning (B) on the connections of wing-side of hydraulic cylinders are lengthened or shortened by loosening the counter nuts up to ensure the parallelism.
- The counter nuts are tightened again after the parallelism ensured.

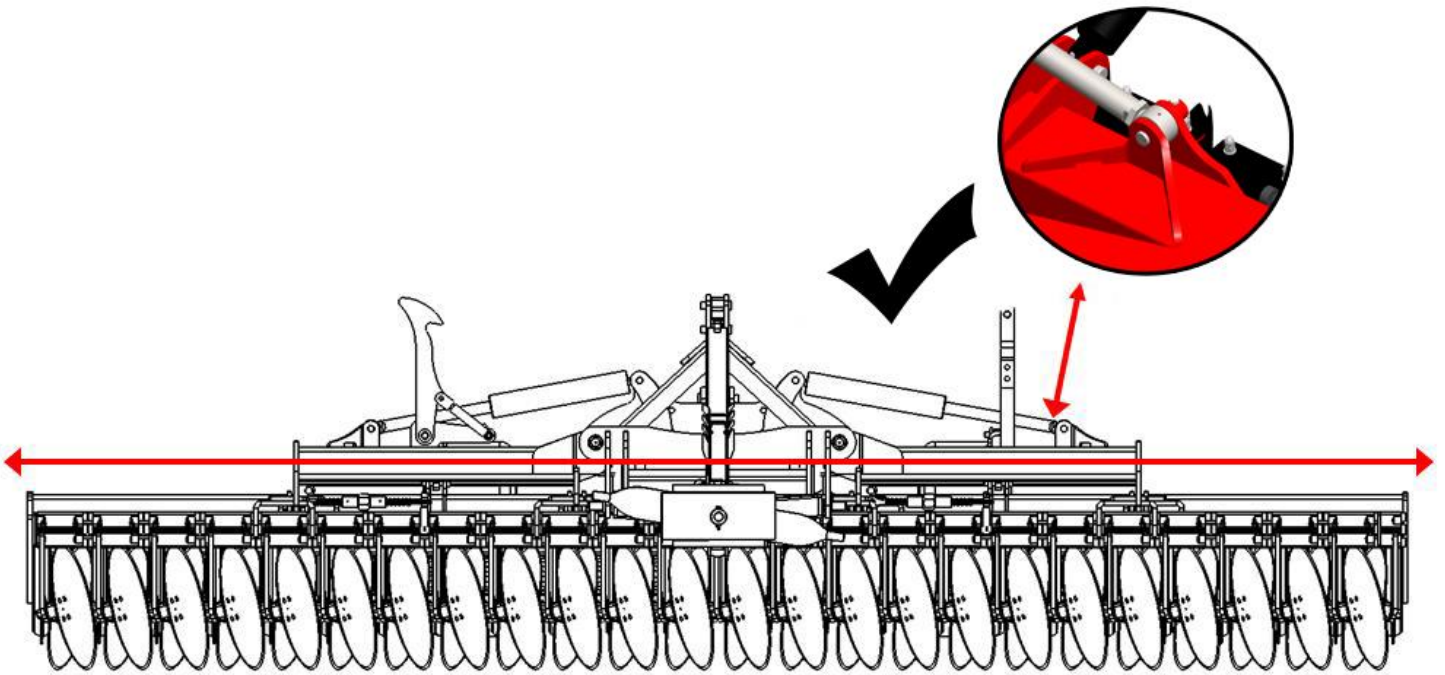
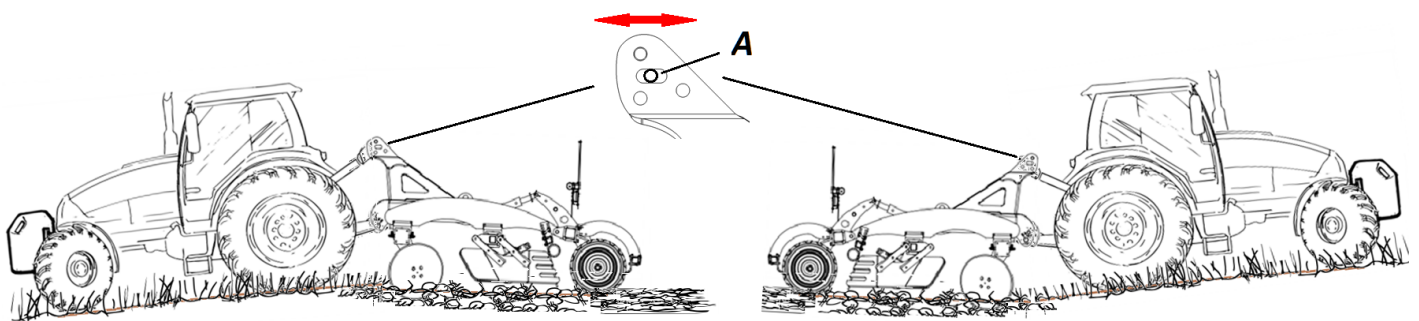
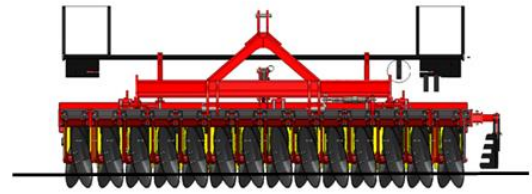
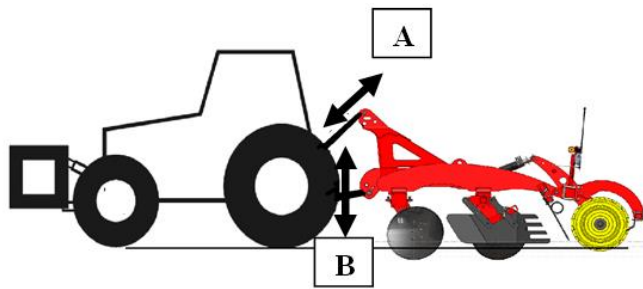


FIGURE 6

3.6 Right-left and front-rear parallelism adjustment

The machine chassis must be parallel to field plane at front-rear and right-left axis while operating in required working depth for suspended type models. Otherwise the discs doesn't operate in equal working depth, side tow occurs, smoothing of the field will be spoiled.

- **Front-rear parallelism adjustment is made by lengthening and shortening of tractor upper connection handle, (A) it is checked by looking at the side of the machine.**
- **Right-left parallelism adjustment is made by adjusting the height of regulated flank suspension-rods. (B) It is checked by looking at the rear side of the machine.**



3.7 Flank furrow concealing adjustment

- The furrow concealing plate, which serves the concealing of open furrow caused by the discs at the left side in the soil, may be adjusted in two ways as down-up and taking away from – drawing near to the discs. The smoothing of the field is preserved. (FIGURE 7)
- The adjustment is made in the direction of inside and outside by removing no. 1 pin, it is tuned at hole-level that prevents the occurring of furrow depending on the operation working depth.
- Down-up adjustment is made by selecting one of the four levels after removing no. 2 pin. This adjustment depends on the working depth; the adjustment must be made again in case of working depth change. The furrow closer has a play towards down and up; this property provides flexibility in field undulations, prevents deformation.
- Appropriate adjustment is made as to ensure concealing the open furrow by striking to the plate of the soil scattered by last-disc depending on the condition of cultivated soil.



WORKING SPEED OF ARAGON MUST BE MIN. 10-15 Km/h DEPENDING ON THE SOIL CONDITION.

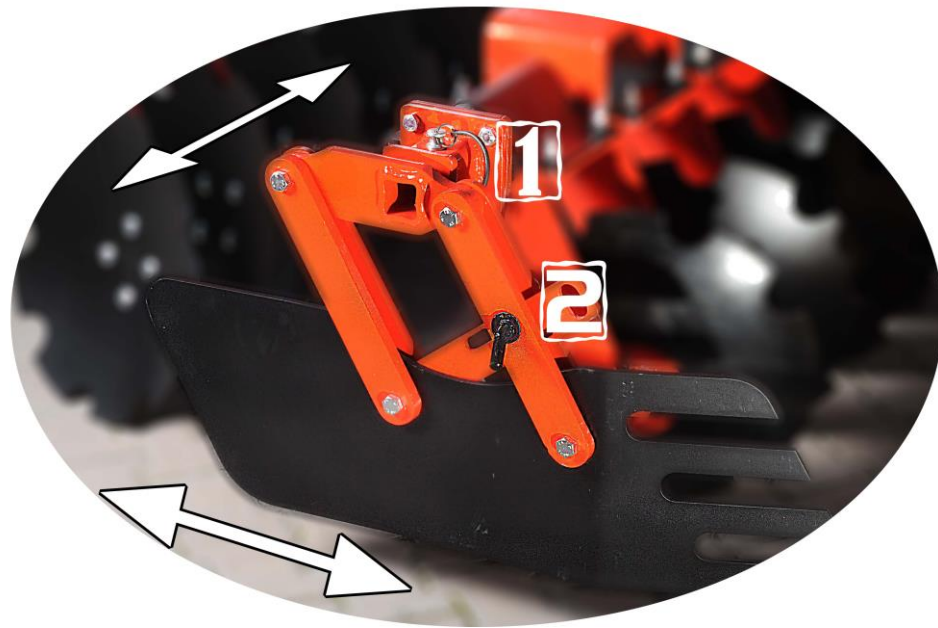
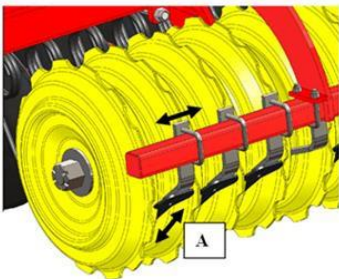


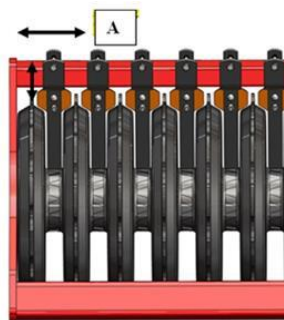
FIGURE 7

3.8 Disc roller scraper adjustment

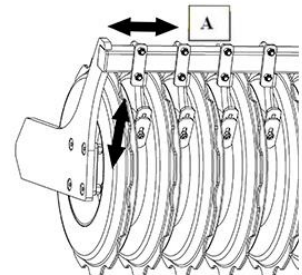
- The adjustments are same for intermediate-bedded sheet metal roller manufactured before the year of 2012 and 2012,2015 model sheet metal roller.
- Factory settings were done for scrapers in sheet metal roller.
- The setting must be checked and be done again depending on the working conditions. (A)
- The scraper spatula can be adjusted upwards and downwards at connection slot, it is adjusted as there will be 5 mm clearance between roller disc sheet metal.
- It must be ensured that the scraper sheet bar not rubbing to sheet metal, in case of any rubbing it can be slid to right-left by loosening the U-gasket bolt sheet clamp.



MODEL 1



MODEL 2



MODEL 3

3.9 Front - rear disc trace adjustment

- Each of the front – rear disc groups are composed with separate bedded discs. The discs are attached to the roof with rubber wedges at an angle of 18 degrees depending on the direction of flow, at an angle of 14 degrees if it is in perpendicular direction.
- Distance between the discs is 24.5 cm. Rear battery disc make processing by centering within the two discs on the front battery in order to ideal cultivation of the soil. This affect can be controlled at the furrow sole of cultivated soil and the trace adjustment can be made.
- Front disc group is attached to the chassis as can be slid towards right – left.
- In order to make any adjustment, first of all chassis connection bolts of the batteries are loosened, then the adjustment is made by taking into account of gauge scale at the screwed adjustment handle. **(FIGURE 8)**
- For folding models; this adjustment is first made at the wing which has gauge scale, then the adjustment is made for other wing front disc group by taking into account of disc interval at the middle. **(FIGURE 8)**



Front rear disc trace adjustment is adjusted as (0) position of gauge scale at the factory. There won't be any uncultivated area in the earth as described below at this position, ideal soil cultivation is experienced.

- **Never alter with this adjustment unless required.**
- **For the cultivations which harrows the field to break up intense and long, more woody stubbles (such as corn stubble, long wheat stubble, cotton stubble),**
- **For the cultivations which the soil humidity is high,**
- **An adjustment can be made for right or left in order to facilitate soil movement between front and rear discs. Before all else the adjustment should be made as necessitates. If 2. or 3. level is enough, it should be left at this setting.**
- **If congestion continues among the discs, it must be switched into 4. or 5. level.**

Adjustment order of the procedure;

1. The bolts (A) which connect the battery to the chassis are loosened.
2. An adjustment is made to the right or left through using screwed adjustment handle together with machinery wrench.
3. The bolts (A) is tightened again as required after being checked at the gauge scale,
4. For folding models first the battery with the scale mounted on is adjusted; then the other wing battery is adjusted as the center space of two batteries will be 45 mm.

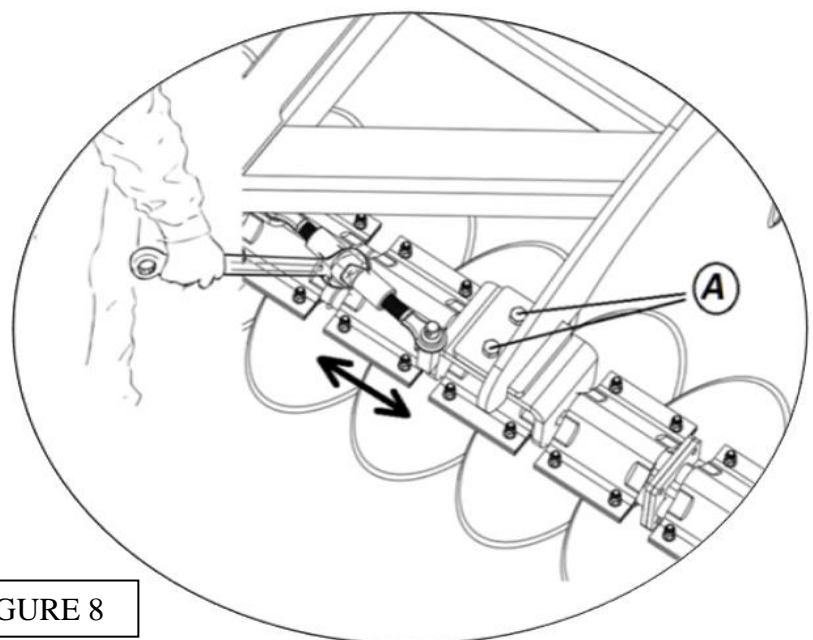
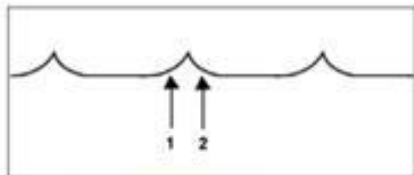
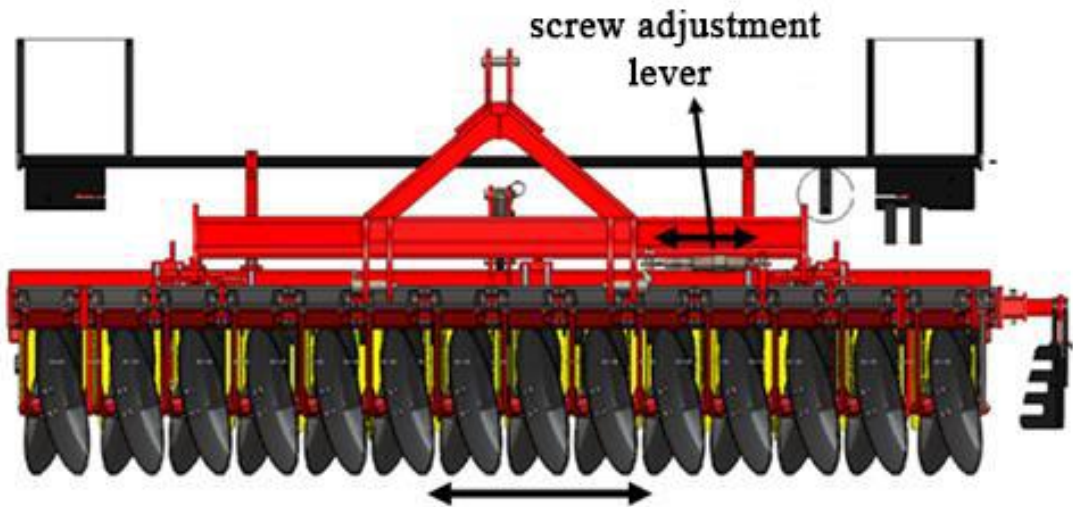
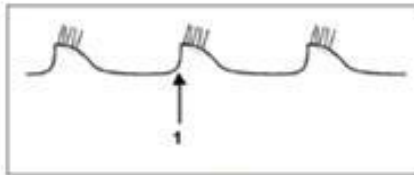


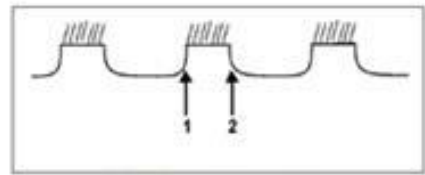
FIGURE 8



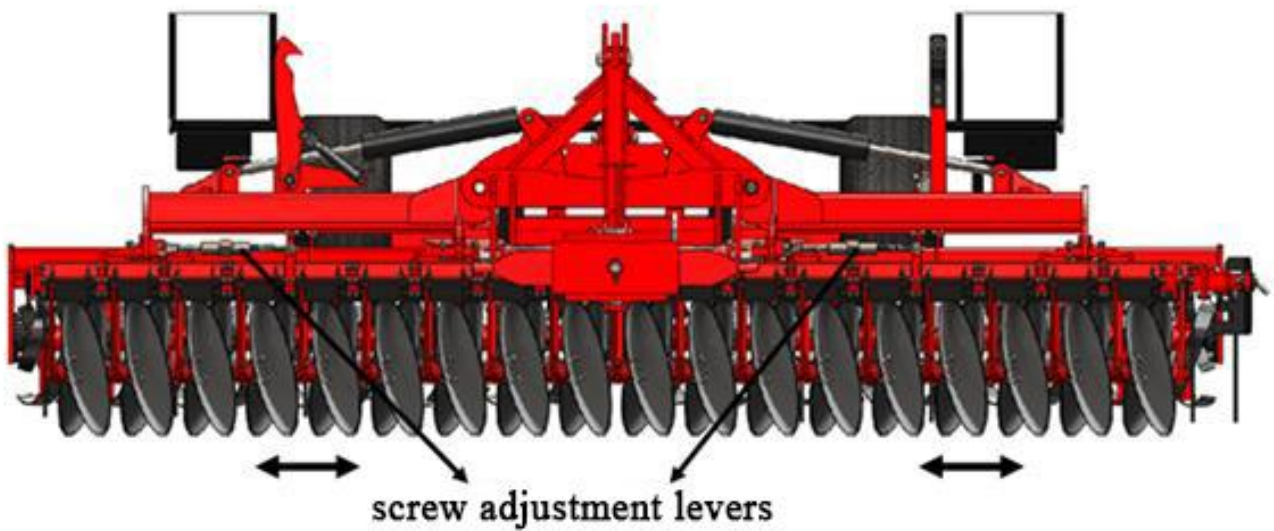
ideal process settings



right setting



left setting



4. TILLAGE TECHNIQUE WITH THE CULTIVATOR



Required working depth may not be obtained with one crossing for deep processing in hard earths,

For this situations;

- **Tractor towing power may be inadequate,**
- **Fuel consumption increases,**
- **Your machine may be damaged,**
- **It won't be an economical operation,**
- **Desired working depth is obtained by increasing gradually with a second time plowing.**



Working Speed is 10-15 km/h depending on the soil conditions.

Those are recommended in order to increase operation achievement and to reduce the cost at soil cultivating with the cultivator;

Order of the procedure:

1. Being entered from one side according to plowing direction of the field (1)
2. The area which the maneuvers performed at the head of the fields should be left as 7-10 m (according to tractor + machinery rotating diameter), this returning should be made at one time without any maneuver,
3. The plowing is continued on its side by taking a furrow at each 15-30 meters, these distances are important in terms of decreasing the wasted times at least during turnings, the distance may be adjusted according to your own conditions,
4. (2) entrance is performed by taking into account of working depth right next to the previous, and being continued the plowing with (3.) entrance, (figure cross plowing)
5. If the stubble is being processed; it is recommended that first layer crossing should be made as creating a 30-40 degree cross angle (figure cross plowing) towards the direction of harvest lines unless the field surface is not rough. Because; field smoothing will be better, cutting of the stubble and weeds will be more effective,
6. Straight plowing is recommended in terms of running easily of the sowing machine that will operate afterwards for the second layer crossing.
7. Finally head of the field returning areas are plowed after the field plowed entirely. (4)

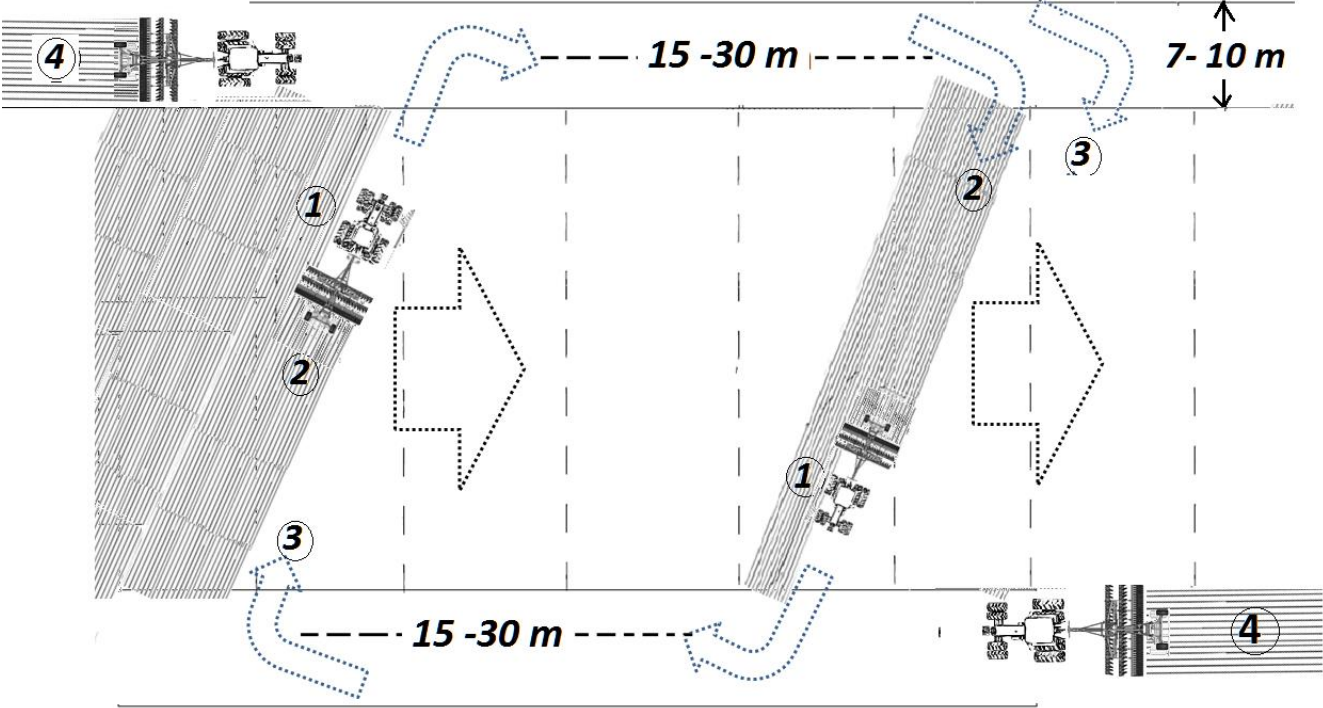


The feet must be taken out from the earth at the field heads, and never turn with the feet inside the earth.

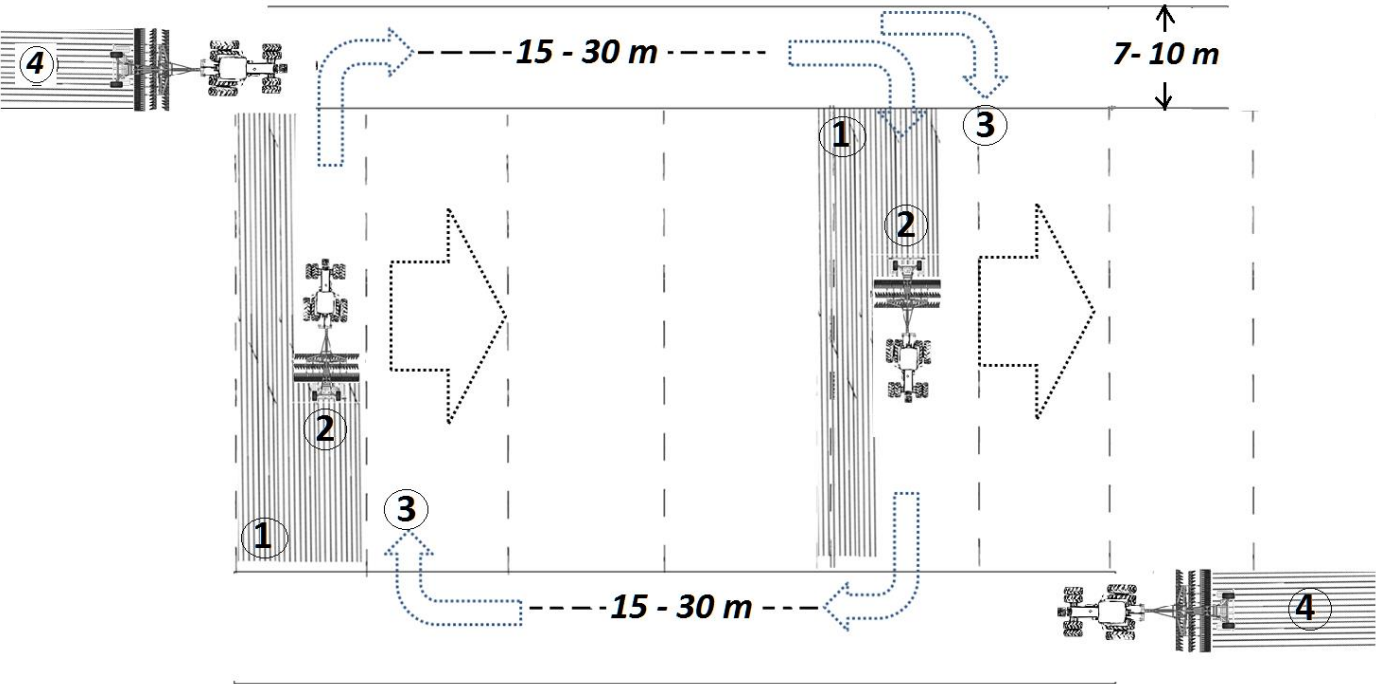


The furrow distance must be about an exact multiple of the machinery working width, Example: $6\text{ m} \times 6 = 36\text{ m}$

Cross Tillage



Straight Tillage



5. MAINTENANCE and REPAIR



While performing repairs and maintenance over the machinery

- Tractor must be stopped and park brake must be applied.
- Precautions must be taken against the slipping and falling risk of the machine.
- Appropriate wrenches and tools must be used for repairs.
- Disconnect the alternator and accumulator cables of the tractor in case of welding process.
- The spare parts to be used must be original ILGI parts.

5.1 Maintenance-repair which can be done by user and the rules that must be complied

- Machinery greasing points must be lubricated periodically and after each pressurized-washing. It is very important in terms of an uninterrupted operation without any failure and in order to reduce repair costs.
- The frequency of periodic maintenance may vary depending on the factors such as working conditions, soil characteristic, and working speed.
- Greasing process must be performed sequentially without skipping according to lubricating grease schematic.
- Tightness of all bolts and nuts must be checked at regular intervals and tightened with proper torque during all the season and after first working hour.
- Carrying wheels lug nuts must be checked after first outgoing for towed models. Tightening torque for lug nut is 320 Nm.
- Hydraulic cylinders and bearing beds must be cleaned with high-pressurized water. Otherwise the felts may be damaged.
- If the machine won't be used for a long time, it must be kept in a covered place.

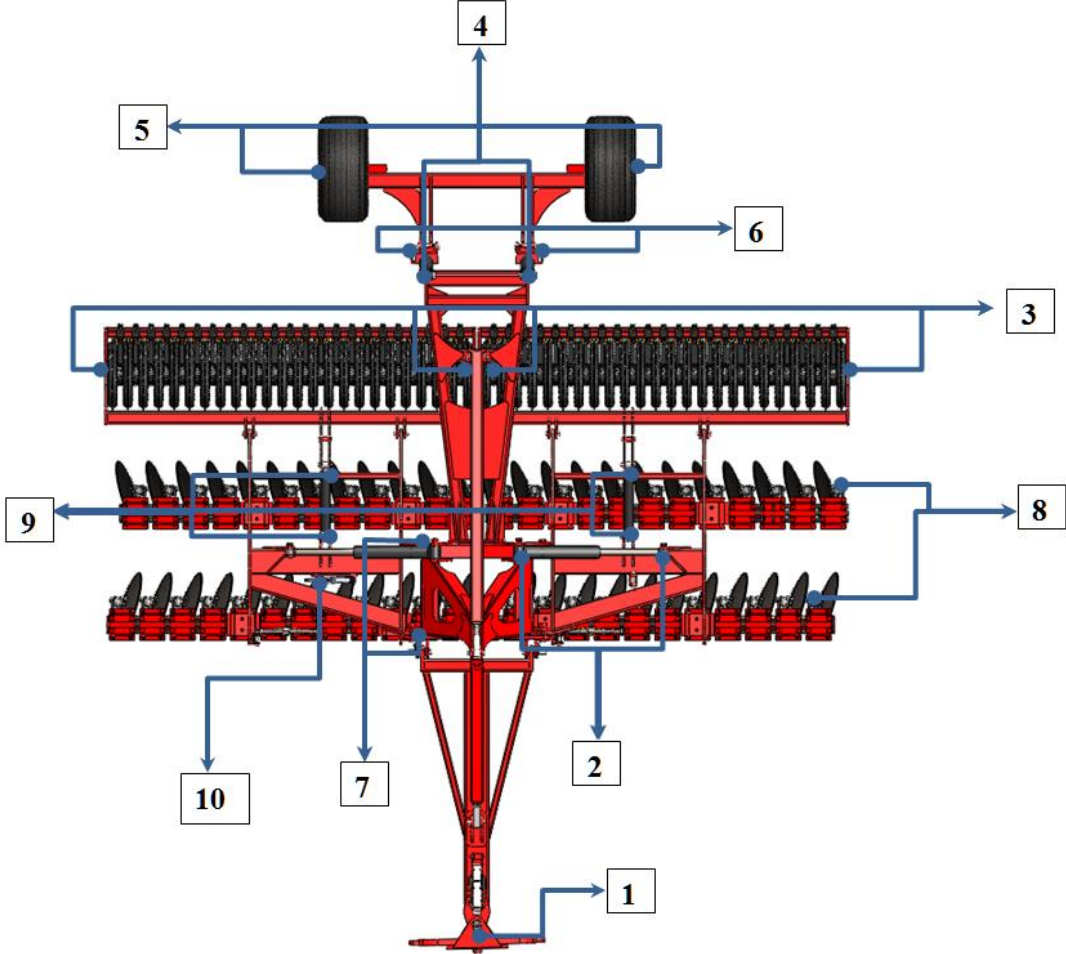
5.2 Lubrication - grease fitting schematic



Grease fitting points on the machine are marked with this label, pump grease to these points according to lubrication table.



MODEL : ARG 32,36,40,44,48 (FOLDING TYPE)



MODEL : ARG 20 ,24 ,28 (MOUNTABLE TYPE)

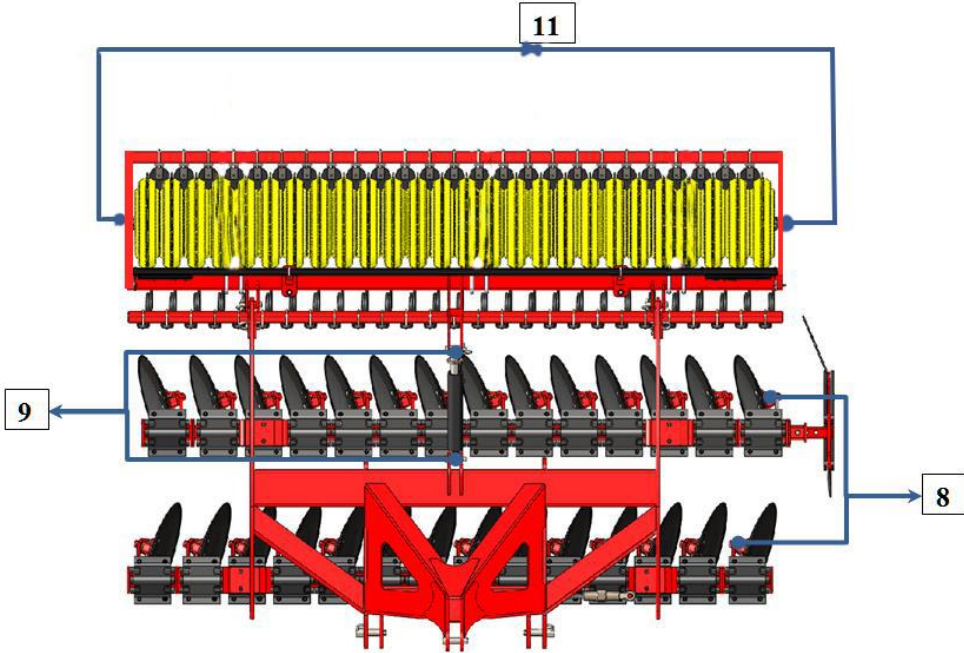
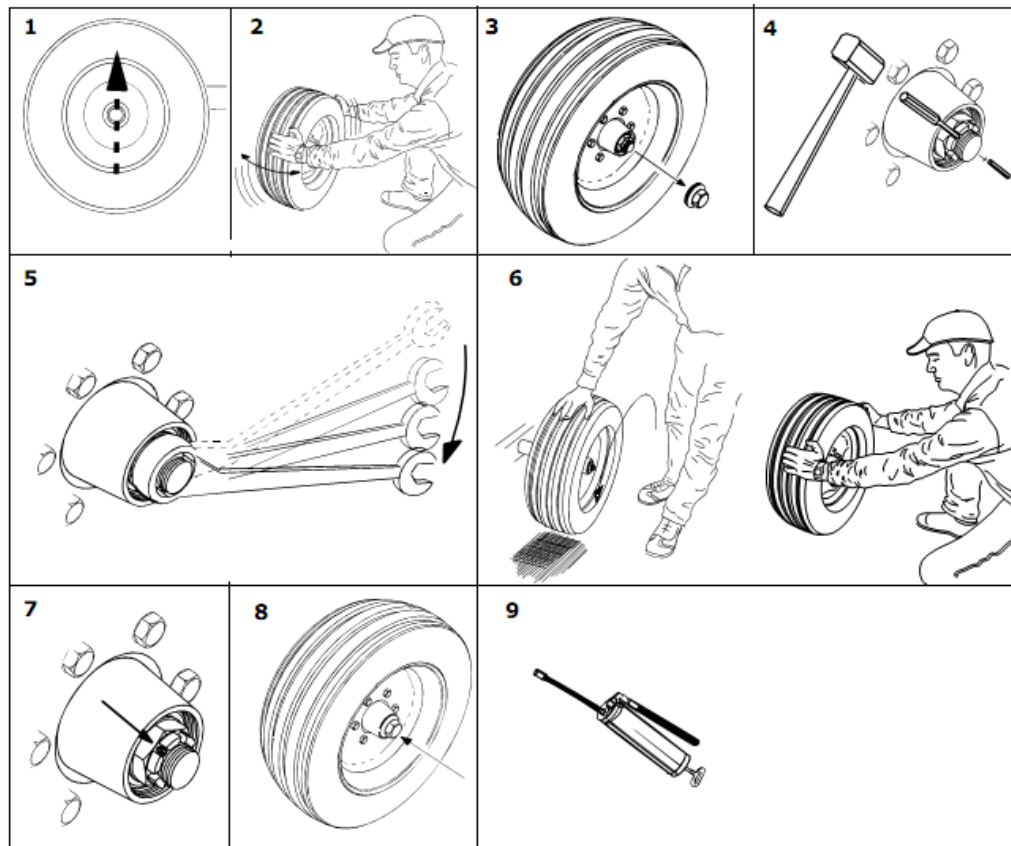


Figure no	Lubrication point	Lubrication frequency	Used oil	Number of grease fittings
1	Tow system pin bearings	Every operation	Grease oil	2
2	Wing hydraulic cylinder pin bearings	50 hours	Grease oil	4
3	Roller bearings	50 hours	Grease oil	2 (4-folded)
4	Transport system hydraulic cylinder pin bearings	50 hours	Grease oil	6
5	Transport system hub unit roller bearings	2 times in a season	Grease oil	2
6	Axle rotating pin bearings	50 hours	Grease oil	2
7	Wing folding hinge pin bearings	50 hours	Grease oil	4
8	Disc hub roller bearings (at lubricating bearings)	2 times in a season	Grease oil	According to disc number
9	Roller hydraulic cylinder pin bearings	50 hours	Grease oil	2 (4-folded)
10	Hydraulic lock	50 hours	Grease oil	3
11	Intermediate-bedded roller bearing	50 hours	Grease oil	3

5.3 Space control for carrying system wheels and their adjustment

Space control at wheel bearings and their adjustment must be made at regular intervals and after first working hours.

Size of the wheels	Tire pressure psi (bar)
400/60-15,5	52 (3.6)

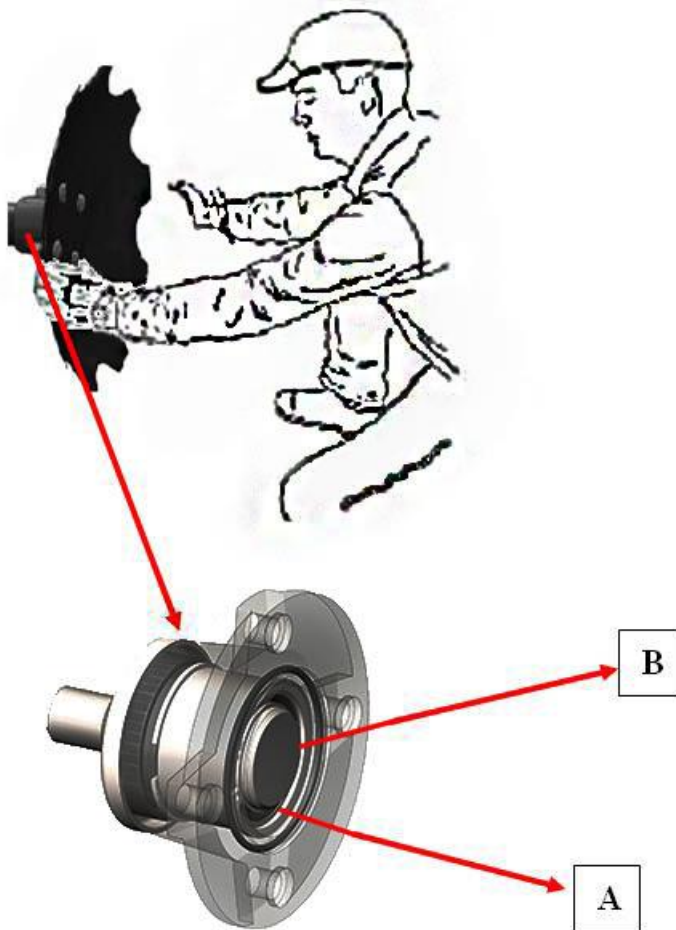


Order of the procedure

1. Lift up the wheel from the ground till it rotates freely,
2. Check the play by holding at right and left; if there's a play, in order to adjust;
3. Remove the hub cover.
4. Detach crowned nut fixing cleft pin,
5. Tighten the crowned nut with a special wrench up to the firm-rotating point of the wheel and take it back a half-turn or full-turn, then repeat these procedure until you determine non-playing and the free-rotating adjustment for the wheel by re-checking the play,
6. Twist the ends by attaching crowned nut fixing cleft pin,
7. Install the protective cover again
8. Pump the grease oil until clean oil comes from the oil drainage hole of the hub.

5.4 Space control for disc hub bearing and adjustment (at grease fitting bearings)

Space control for disc bearings and their adjustment must be made at regular intervals and after first operation hours. It is not necessary for the hubs which not necessitate lubrication maintenance by itself optionally.



İşlem sırası

1. Lift up the disc from the ground till it rotates freely,
2. Check the play by holding at right and left; if there's a play, in order to adjust;
3. Detach the disc.
4. Open special nut fixing ratchet, (A and B)
5. Tighten the nut with a special wrench up to the firm-rotating point of the hub and take it back a half-turn or full-turn, then repeat these procedure until you determine non-playing and the free-rotating adjustment for the hub by re-checking the play,
6. Twist the nut fixing washer ratchet,
7. Install the disc again
8. Pump the grease oil until clean oil comes from the oil drainage hole of the hub.

5.5 End of season maintenance

Connection components; Check the tightness. Tighten all bolts. Fasten new bolts in place of missing bolts.

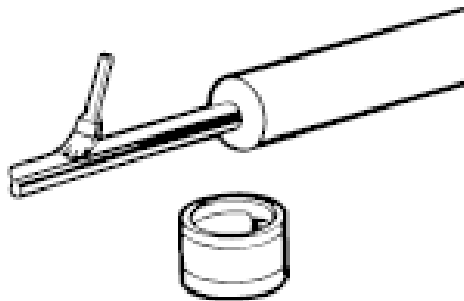
Grease fittings; Pump grease oil into the grease fittings on the machine according to the instructions. Replace the grease fittings which pulled out or can't be pumped by grease oil.

Operating components; Lubricate the operating parts of the machine with a protective oil.

Other; Replace the worn or broken parts with the original ones. Keep the machinery in a closed and dry environment, on a block after fulfilling general cleaning of the machinery.

Disconnect the tire wheels from the ground by placing wedges under the chassis.

Cover the surfaces of the hydraulic cylinder piston levels with protective grease against the rust in winter term, out of the season.



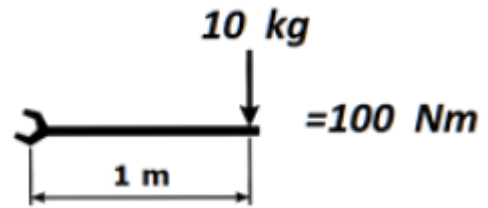
You can always apply to iLGi for assistance in case of problems encountered related with the maintenance, repair and usage by giving the information below.

- **Customer name and address**
- **Model of the machinery**
- **Purchasing date and the amount of the operation space (decare)**
- **Detail of the encountered problem**

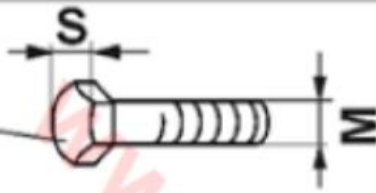
5.6 Values for bolt torque



The meanings of torque values:
We would have applied 100 Nm torque if we tighten by applying 10 kg strength with a 1 meter-long wrench.



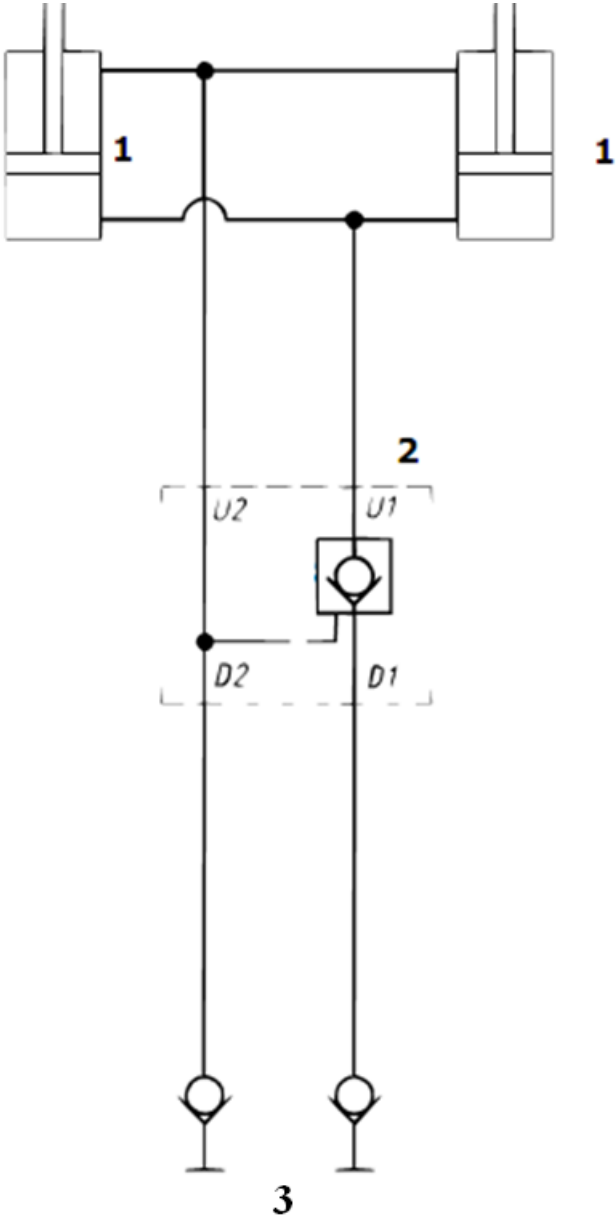
8.8
10.9
12.9



M	S	Nm		
		8.8	10.9	12.9
M 8	13	25	35	41
M 8x1		27	38	41
M 10	16 (17)	49	69	83
M 10x1		52	73	88
M 12	18 (19)	86	120	145
M 12x1,5		90	125	150
M 14	22	135	190	230
M 14x1,5		150	210	250
M 16	24	210	300	355
M 16x1,5		225	315	380
M 18	27	290	405	485
M 18x1,5		325	460	550
M 20	30	410	580	690
M 20x1,5		460	640	770
M 22	32	550	780	930
M 22x1,5		610	860	1050
M 24	36	710	1000	1200
M 24x2		780	1100	1300
M 27	41	1050	1500	1800
M 27x2		1150	1600	1950
M 30	46	1450	2000	2400
M 30x2		1600	2250	2700

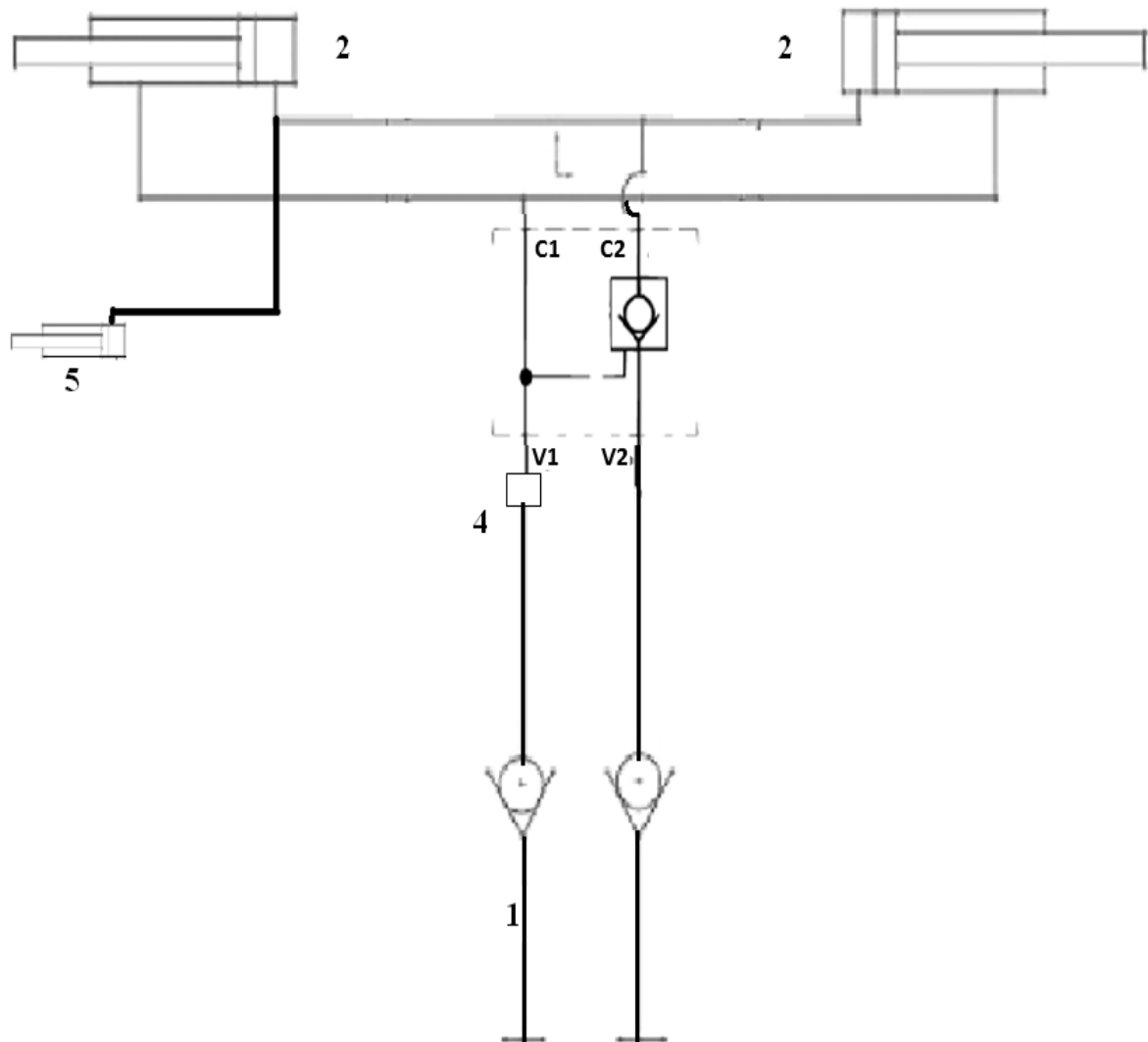
6. CIRCUIT SCHEMATICS

6.1 Rear axle – carrying system hydraulic circuit schematic



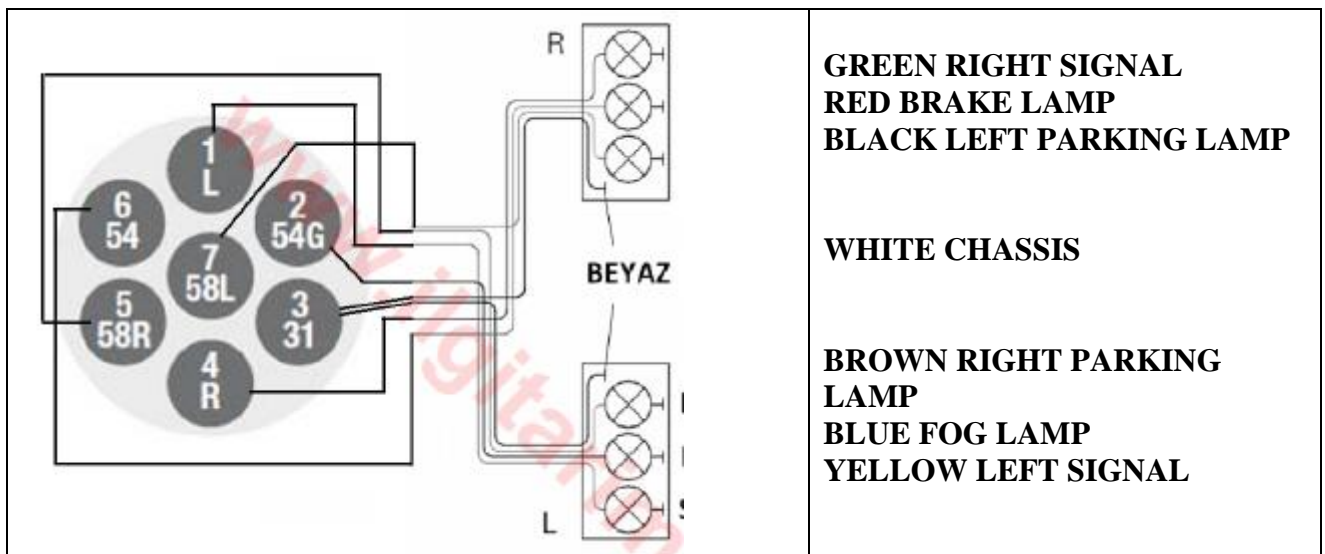
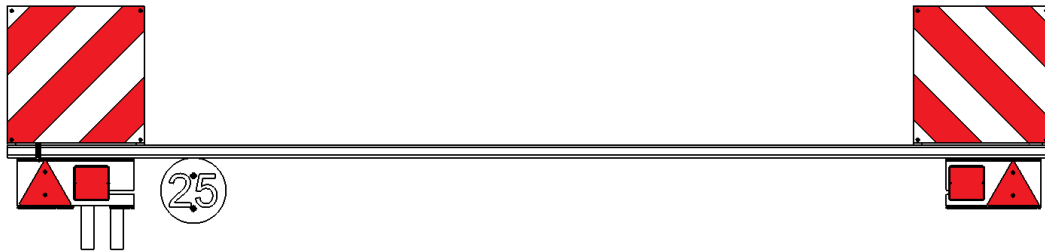
- 1. Hydraulic cylinder
- 2. Hydraulic locking valve
- 3. Tractor fast connections

6.2 Wing folding hydraulic circuit schematic



1. Tractor fast connection
2. Wing folding hydraulic cylinder
3. Hydraulic locking valve
4. Speed-reducing nipple
5. Road condition hydraulic lock cylinder

6.3 Rear traffic warning system electrical circuit schematic



L	YELLOW	LEFT SIGNAL
54G	BLUE	FOG LAMP
31	WHITE	CHASSIS
R	GREEN	RIGHT SIGNAL
58R	BROWN	RIGHT PARKING LAMP
54	RED	PARKING LAMP
58L	BLACK	LEFT PARKING LAMP



Frequently check the traffic warning lamps (signal – parking and brake lamps)
Replace the non-functioning lamps.
Otherwise there is a greater risk in terms of road safety when going out traffic.

7. POSSIBLE FAILURES AND TROUBLESHOOTING

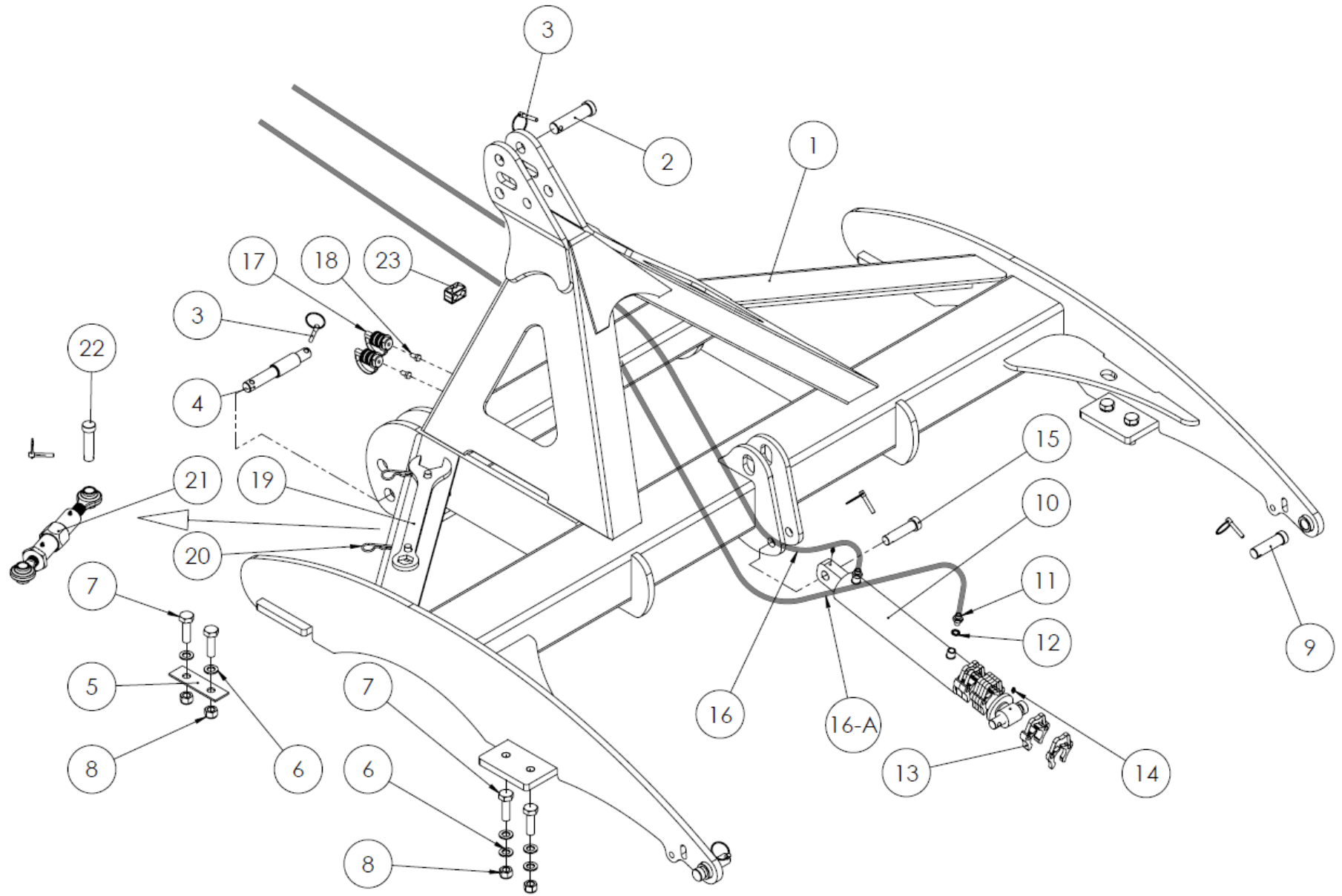
FAILURE	CAUSE	TROUBLESHOOTING
The machine lean towards right or left	Front and rear disc groups may be operating at different work depths	Make the adjustment of the machine front rear parallelism at the upper connection of the tractor
Front and rear batteries operate at different working depths	Front rear parallelism adjustment was not done	The chassis parallelism adjustment must be made at stretcher lever attached to axle and arrow
The wheels are swaying and rotating under strained	<ul style="list-style-type: none"> * There's congestion in the bearings, adequate lubrication wasn't done * Broken cracking at hub bearings 	Bearings are examined by detaching the hub, deformed ones replaced. Lubrication is made.
Hydraulic system doesn't lift	<ul style="list-style-type: none"> * Oil is reduced in tractor hydraulic oil reservoir * Leakage may be in the hydraulic circuit * Hydraulic cylinder felt may be burst. 	<ul style="list-style-type: none"> * Hydraulic oil level must be checked * Entire hydraulic circuit must be checked, the leakages must be repaired. * Hydraulic cylinders must be checked by detaching.
The wings vibrates while lowering	* Oil speed reducing setting is wrong	* It is adjusted as reducing the descent speed of the speed-reducer wing on the wing hydraulic circuit
The discs are rotating hardly in free condition or not rotating	<ul style="list-style-type: none"> * There's congestion in the bearings, adequate lubrication wasn't done * The bearing was deformed or broken 	<ul style="list-style-type: none"> * The grease fittings are replaced by detaching if the bearings not getting enough oil, and pumped oil again by removing oil plug. * If necessary bearings are checked by detaching the bearings, replaced if necessary, gathered again after cleaning. * Broken and cracked parts are replaced.
The machine can't provide the required working depth.	<ul style="list-style-type: none"> * The characteristic of the soil may be hard. * Disc diameters are shrunk due to normal wear. 	* The discs are replaced as a set if there's too much wear by measuring the discs (wear time may vary depending on the cultivated soil characteristic)

8. TECHNICAL FEATURES

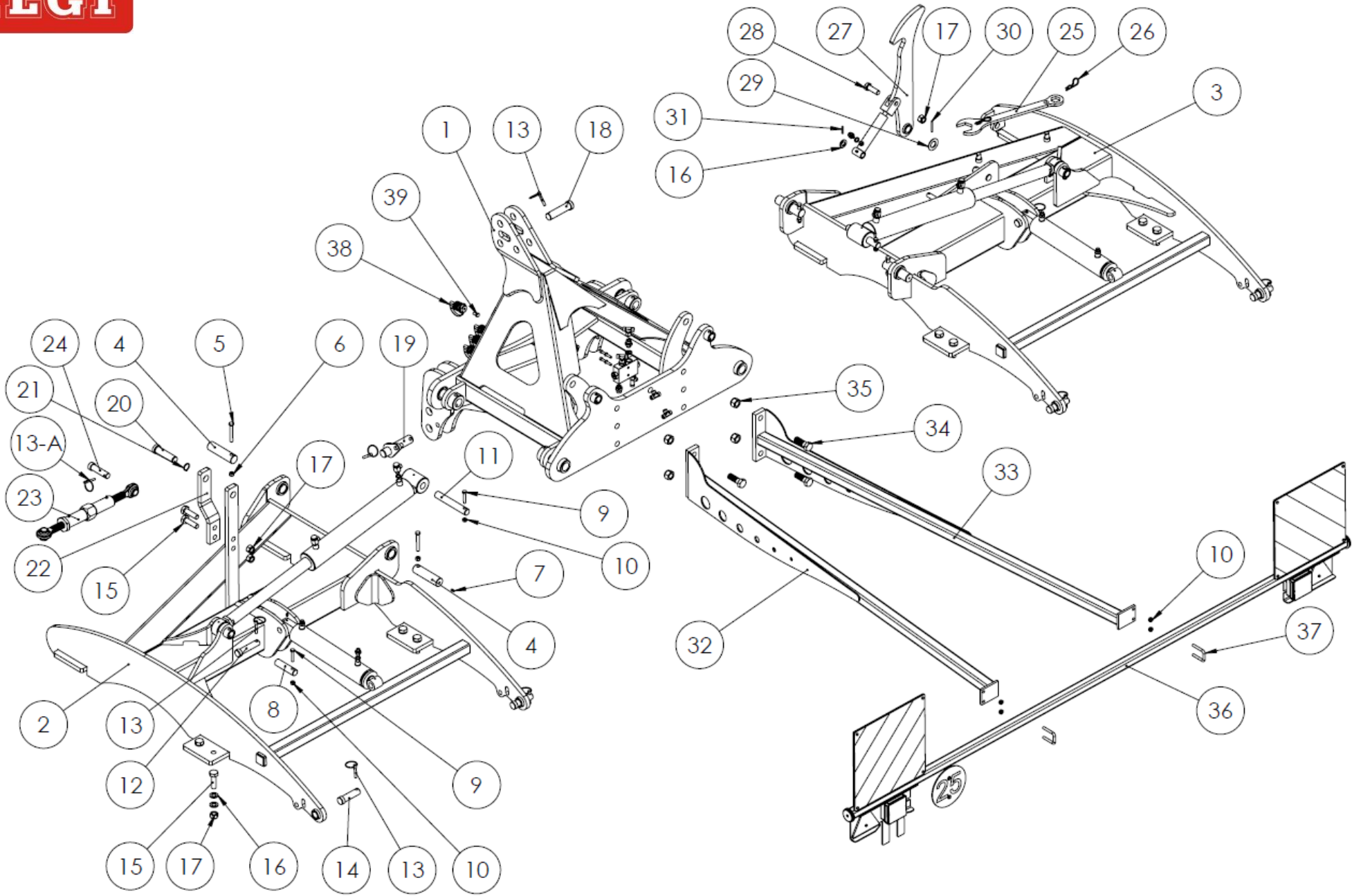
Machine model	ARG 20	ARG 24	ARG 28	ARG 32	ARG 36	ARG 40	ARG 44	ARG 48					
	Suspended type	Suspended type	Suspended type	Suspended type	Towed type	Suspended type	Towed type	Suspended type	Towed type	Suspended type	Towed type	Suspended type	Towed type
İş genişliği (m) Working width	2,50	3,00	3,50	4,00	4,00	4,50	4,50	5,00	5,00	5,50	5,50	6,00	6,00
Yol durumu genişliği(m) Transport width (m)	2,70	3,20	3,70	2,80	2,80	2,80	2,80	2,80	2,80	2,80	2,80	2,80	2,80
Machine (kg) weight	1220	1350	1470	2130	3220	2290	3380	2410	3500	2540	3770	2680	3770
Machine+Tube roller (kg)	1540	1710	1850	2650	3750	2840	3940	3050	4150	3210	4300	3390	4490
Machine+Helix roller (kg)	1640	1830	2020	2835	3925	3060	4160	3245	4345	3430	4750	3645	4750
Machine+with sheet metal roller (kg)	1940	2045	2390	3300	4400	3580	4680	3815	4915	4050	5450	4355	5450
Diameter of the disc (mm)	510-560	510-560	510-560	510-560	510-560	510-560	510-560	510-560	510-560	510-560	510-560	510-560	510-560
Number of discs	20	24	28	32	32	36	36	40	40	44	44	48	48
Tractor (HP) (** Approximate) Power requirements	85-110	100-130	110-150	130-170	140-180	150-180	160-190	160-200	170-210	170-220	180-230	180-240	190-250

(*)Our company may change technical specifications of the models without notifying.

(**)Machinery power requirements may vary depending on the characteristic of cultivated soil.



MAIN FRAME GROUP 2,5-3-3,5M		
NO	PART CODE	NAME & DESCRIPTION
1	2.MX.101.00.000.0	MAIN FRAME 2,5-3-3,5M
2	7.2.5.MX.0006	UP JOIN PIN
3	7.4.28.1001	PIN SPRING Ø10
4	7.2.5.MX.0009	DOWN JOIN PIN
5	2.MX.150.00.001.0	BATTERY SLIDE BAR
6	7.4.20.1011	WASHER M20 DIN 126
7	7.4.18.1216	BOLT M20x70 DIN 931
8	7.4.23.1041	NUT M20 DIN 985
9	7.2.5.MX.0008	ROLLER FRAME JOIN PIN
10	7.4.3.1018	HYDRAULIC CYLINDER ROLLER
11	7.4.2.1026	UNION 1/4" - M16 10L
12	7.4.2.1195	WASHER 1/4"
13	2.MX.100.04.000.0	HYD. CLIPS 10 MM
	2.MX.100.05.000.0	HYD. CLIPS 20 MM
	2.MX.100.06.000.0	HYD. CLIPS 40 MM
14	7.4.38.1003	GREASE NIPPLE M6
15	7.2.5.MX.0007	ROLLER CYL. JOIN PIN
16	7.4.2.1500	1/4" L2 290 cm M16x1,5 HOSE
16-A	7.4.2.1501	1/4" L2 260 cm M16x1,5 HOSE
17	7.4.2.1139	CAPLIN 1/2" FEMALE
18	7.4.18.1093	BOLT M10x20 DIN 933
19	7.2.2.MX.0024	ADJUST WRENCH
20	7.4.28.1005	R PIN Ø4
21	7.2.2.1211	RIGGING SCREW
22	7.2.5.MXK.0008	RIGGING SCREW PIN
23	7.4.1.1002	Ø16 TWIN CLAMP

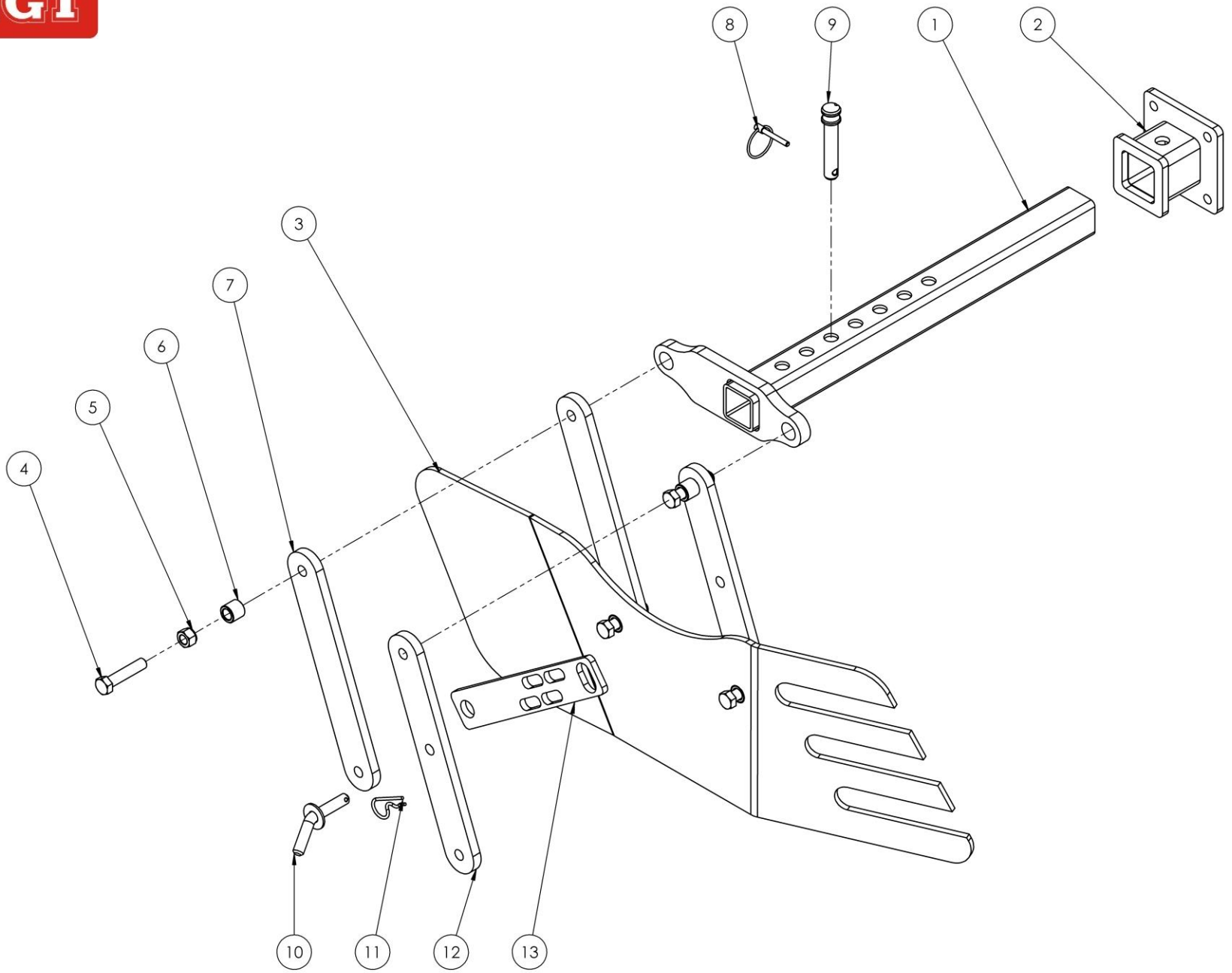


MAIN FRAME 4 - 5 - 6M

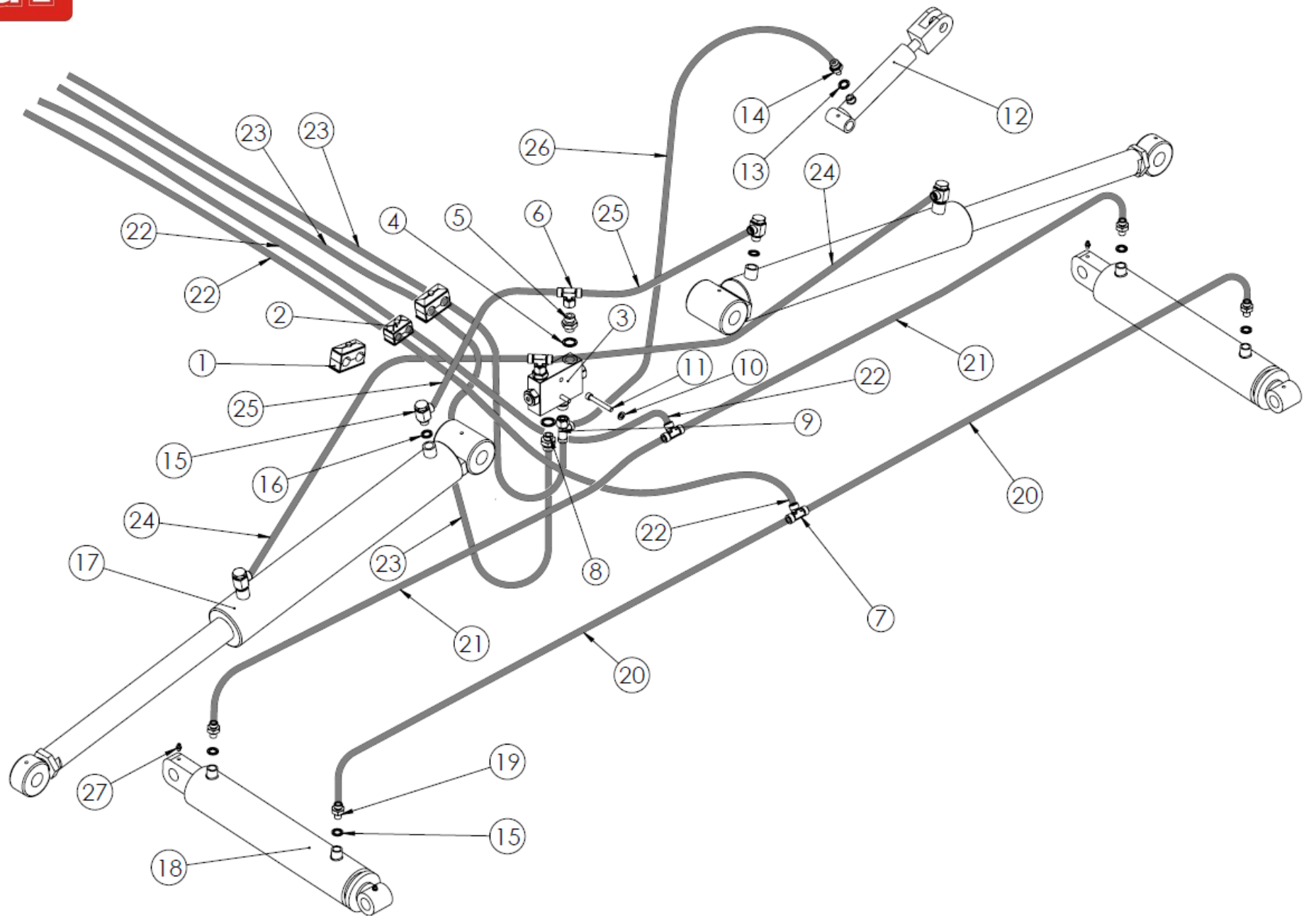
NO	PART CODE	NAME & DESCRIPTION
1	2.MXK.101.00.000.0	MIDDLE FRAME MXK
2	2.MXK.103.00.000.0	WING FRAME LEFT MXK
3	2.MXK.102.00.000.0	WING FRAME RIGHT MXK
4	7.2.5.MXK.0004	WING HINGE PIN
5	7.4.18.1129	BOLT M12x90 DIN 931
6	7.4.23.1037	NUT M12 DIN 985
7	7.4.38.1005	GREASE NIPPLE 5/16" DIN 71412 H1
8	7.2.5.MXK.0006	WING FRAME CYLINDER JOIN PIN
9	7.4.18.1100	BOLT M10x55 DIN 933
10	7.4.23.1036	NUT M10 DIN 985
11	7.2.5.MXK.0005	MIDDLE FRAME CYLINDER JOIN PIN
12	7.2.5.MXK.0007	ROLLER CYLINDER JOIN PIN
13	7.4.28.1001	PIN SPRING Ø10
13-A	7.4.28.1002	PIN SPRING Ø8
14	7.2.5.MX.0008	ROLLER FRAME JOIN PIN
15	7.4.18.1216	BOLT M20x70 DIN 931
16	7.4.20.1011	WASHER M20 DIN 126
17	7.4.23.1041	NUT M20 DIN 985
18	7.2.5.MX.0006	UP JOIN PIN
19	7.2.5.PM.0011	DOWN TOWING PIN GROUP
20	7.2.5.PM.0019	OTHER SIDE LOCK PIN
21	7.4.4.1001	CIRCLIP DIN 471 Ø30
22	2.MXK.103.00.001.0	OTHER SIDE LOCK BAR
23	7.2.2.1152	RIGGING SCREW MXK
24	7.2.5.MXK.0008	RIGGING SCREW PIN
25	7.2.2.MX.0024	ADJUST WRENCH
26	7.4.28.1005	R PIN Ø4
27	2.PM.123.00.000.0	LOCK SHEET GROUP
28	7.4.18.1214	BOLT M20x60 DIN 931
29	7.4.20.1016	WASHER M30 DIN 126
30	7.4.26.1108	GROOVED PIN Ø6x55 DIN 1481
31	7.4.26.1128	GROOVED PIN Ø6x36 DIN 1482
32	2.APL.127.00.000.0	TRAFFIC GROUP JOIN FRAME LEFT
33	2.APL.128.00.000.0	TRAFFIC GROUP JOIN FRAME RIGHT
34	7.4.18.1258	BOLT M24x70 DIN 931
35	7.4.23.1043	NUT M24 DIN 985
36	2.APL.112.00.000.0	TRAFFIC PLATE GROUP 2,5-3-4-5-6M
37	7.4.18.2236	BOLT U M10 (45X65)
38	7.4.2.1139	1/2 CAPLIN FEMALE
39	7.4.18.1093	BOLT M10x20 DIN 933

GANG GROUP		
NO	PART CODE	NAME & DESCRIPTION
1	2.MX.150.01.000.0	FRONT GANG FRAME 24 DISC (3M)
	2.MX.130.01.000.0	FRONT GANG FRAME 20 DISC (2,5M)
	2.MX.170.01.000.0	FRONT GANG FRAME 28 DISC (3,5M)
	2.MXK.140.01.000.0	FRONT GANG FRAME LEFT 32 DISC (4M)
	2.MXK.141.01.000.0	FRONT GANG FRAME RIGHT 32 DISC
	2.MXK.150.01.000.0	FRONT GANG FRAME LEFT 36 DISC (4,5M)
	2.MXK.155.01.000.0	FRONT GANG FRAME RIGHT 36 DISC
	2.MXK.170.01.000.0	FRONT GANG FRAME LEFT 40 DISC (5M)
	2.MXK.175.01.000.0	FRONT GANG FRAME RIGHT 40 DISC
	2.MXK.211.01.000.0	FRONT GANG FRAME LEFT 44 DISC (5,5M)
	2.MXK.212.01.000.0	FRONT GANG FRAME RIGHT 44 DISC
	2.MXK.190.01.000.0	FRONT GANG FRAME LEFT 48 DISC (6M)
	2.MXK.191.01.000.0	FRONT GANG FRAME RIGHT 48 DISC
	2.MX.160.01.000.0	BACK GANG FRAME 24 DISC
	2.MX.140.01.000.0	BACK GANG FRAME 20 DISC
	2.MX.180.01.000.0	BACK GANG FRAME 28 DISC
	2.MXK.146.01.000.0	BACK GANG FRAME LEFT 32 DISC
	2.MXK.145.01.000.0	BACK GANG FRAME RIGHT 32 DISC
	2.MXK.165.01.000.0	BACK GANG FRAME LEFT 36 DISC
	2.MXK.160.01.000.0	BACK GANG FRAME RIGHT 36 DISC
	2.MXK.185.01.000.0	BACK GANG FRAME LEFT 40 DISC
	2.MXK.180.01.000.0	BACK GANG FRAME RIGHT 40 DISC
	2.MXK.214.01.000.0	BACK GANG FRAME LEFT 44 DISC
	2.MXK.213.01.000.0	BACK GANG FRAME RIGHT 44 DISC
	2.MXK.196.01.000.0	BACK GANG FRAME LEFT 48 DISC
	2.MXK.195.01.000.0	BACK GANG FRAME RIGHT 48 DISC

2	2.MX.150.02.000.0	FRONT DISC TINE GROUP
3	2.MX.160.02.000.0	BACK DISC TINE GROUP
4	7.4.23.1037	NUT M12 DIN 985
5	7.4.23.1011	NUT M12 DIN 934
6	7.4.20.1007	WASHER M12 DIN 126
7	2.MX.150.02.002.0	CLAMP SHEET
8	7.2.2.1020	SPRING RUBBER 235MM
9	7.4.18.1122	BOLT M12x50 DIN 933
10	7.4.18.2194	BOLT M12x40 DIN 603
11	7.4.17.1026	DISC Ø 510
	7.4.17.1027	DISC Ø 560
12	2.MX.400.00.000.0	DISC HUB GROUP
13	7.4.23.1037	NUT M12 DIN 985
14	2.MX.150.02.005.0	FRONT DISC TINE
15	7.4.23.1080	NUT M24x1,5 DIN 985
16	2.MX.160.02.003.0	BACK DISC TINE
17	2.MX.150.02.006.0	SEAL SUPPORT CAP
18	7.4.16.1024	SEAL 45 X 70 X 14 / 17
19	2.MX.150.02.004.0	SEAL SUPPORT BUSHING
20	7.4.4.1014	CIRCLIP DIN 472 Ø65
21	7.4.15.1025	BEARING DAC 356535
22	7.2.5.1028	DISC TINE AXIS
23	7.2.7.1002	DISC HUB
24	7.2.1.1066	O RING 74x3
25	2.MX.107.01.002.0	BACK ASSEMBLY TINE COMPLETE
26	2.MX.107.01.001.0	FRONT ASSEMBLY TINE COMPLETE
27	7.4.18.1145	BOLT M14x45 DIN 931
28	7.4.23.1038	NUT M14 DIN 985

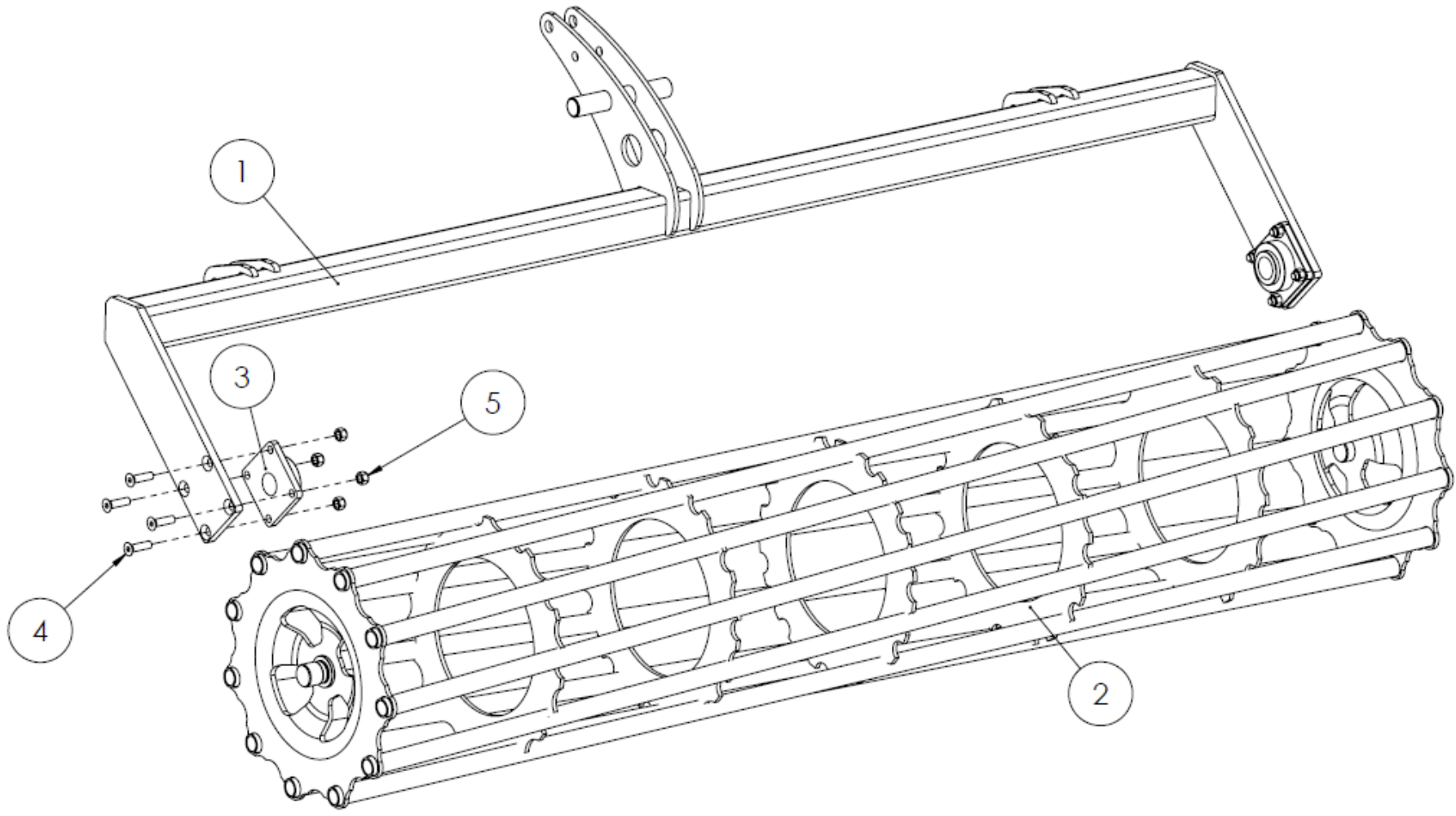


MARKER GROUP		
NO	PART CODE	NAME & DESCRIPTION
*	2.MX.100.00.000.0	MARKER GROUP
1	2.MX.100.01.000.0	MARKER JOIN BAR
2	2.MX.100.02.000.0	MARKER JOIN TUBE
3	7.4.18.1145	BOLT M14x45 DIN 931
4	7.4.23.1038	NUT M14 DIN 985
5	7.2.5.PM.0009	SIDE DISC & MARKER JOIN PIN
6	7.4.28.1002	SPRING PIN Ø8
7	2.MX.100.01.001.0	PARALLEL FLAT BAR 2 HOLE
8	2.MX.100.01.002.0	PARALLEL FLAT BAR 3 HOLE
9	7.4.18.1175	BOLT M16x75 DIN 931
10	7.4.23.1039	NUT M16 DIN 985
11	2.MX.100.01.006.0	MARKER DEPTH ADJUST
12	7.2.5.MX.0005	MARKER PIN
13	7.4.28.1005	R PIN Ø4

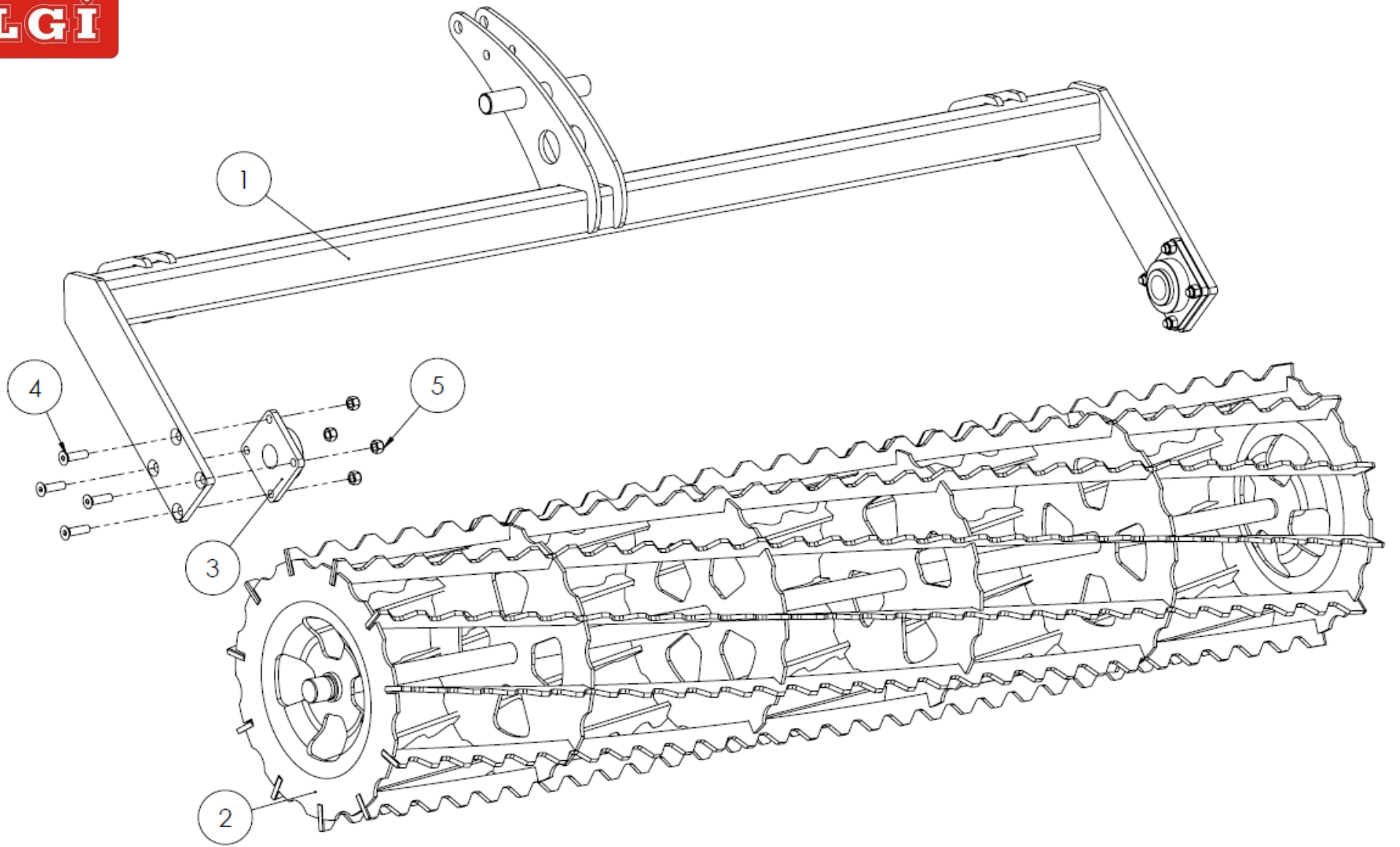


MAIN FRAME 4 - 5 - 6 HYDRAULIC

NO	PART CODE	NAME & DESCRIPTION
1	7.4.1.1010	TWIN CLAMP Ø20
2	7.4.1.1002	TWIN CLAMP Ø16
3	7.4.2.1010	1/2 A VBPDE LOCK VALVE
4	7.4.2.1192	WASHER 1/2"
5	7.4.2.1272	UNION R 1/2 M18x1,5 12L
6	7.4.2.1297	UNION MIDDLE M18x1,5 12L
7	7.4.2.1276	T UNION M18x1,5 12L
8	7.4.2.1298	UNION R 1/2 M18x1,5 12L ORIFICE
9	7.4.2.1177	UNION SIDE M18x1,5 12L
10	7.4.20.1005	WASHER M8 DIN 126
11	7.4.18.1468	BOLT M8x60 DIN 912
12	7.4.3.1029	LOCK CYLINDER
13	7.4.2.1195	WASHER 1/4"
14	7.4.2.1220	UNION R 1/4 M18x1,5 12L
15	7.4.2.1007	3/8" SWIVELLING ELBOW 12L
16	7.4.2.1194	WASHER 3/8"
17	7.4.3.1017	WING CYLINDER 4-4,5-5 M
	7.4.3.1052	WING CYLINDER 6 M
18	7.4.3.1018	ROLLER CYLINDER
19	7.4.2.1026	UNION R 1/4 M16x1,5 10L ORIFICE
20	7.4.2.1436	1/4" R2 170 cm M16x1,5 HOSE
21	7.4.2.1371	1/4" R2 160 cm M16x1,5 HOSE
22	7.4.2.1133	1/4" R2 200 cm M16x1,5 R1/2 MALE CAPLIN
22-A	7.4.2.1218	1/4" R2 440 cm M16x1,5 R1/2 MALE CAPLIN(TRAILED)
23	7.4.2.1150	3/8" R2 200 cm M18x1,5 R1/2 90°MALE CAPLIN
23-A	7.4.2.1457	3/8" R2 440 cm M18x1,5 R1/2 90°MALE CAPLIN(TRAILED)
24	7.4.2.1434	3/8" R2 105 cm M18x1,5 HOSE
25	7.4.2.1179	3/8" R2 60 cm M18x1,5 HOSE
26	7.4.2.1198	3/8" R2 125 cm M18x1,5 HOSE
27	7.4.38.1003	GREASE NIPPLE M6

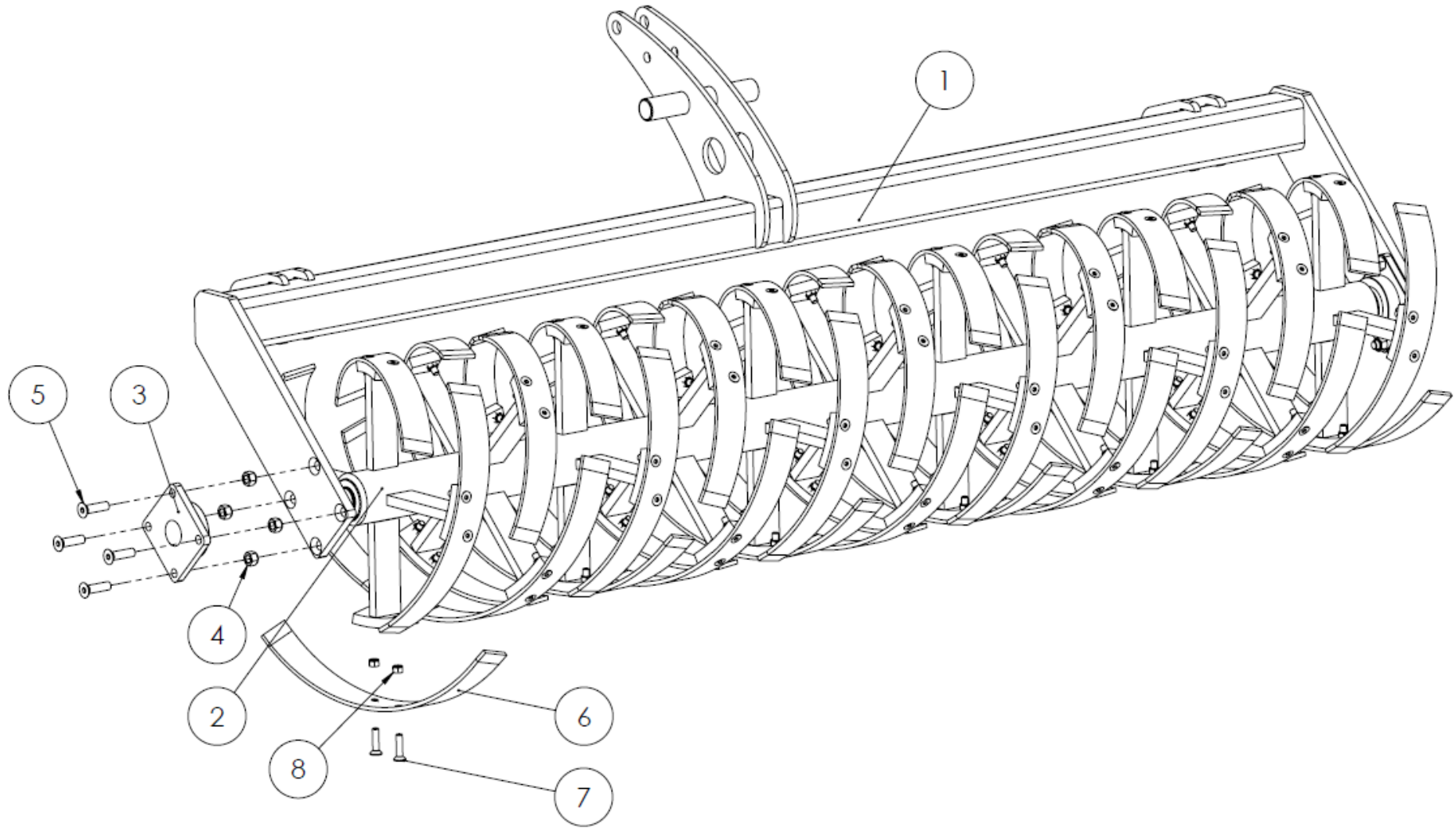


TUBE ROLLER		
NO	PART CODE	NAME & DESCRIPTION
**	2.MX.250.00.000.0	TUBE ROLLER 2,5M ALL
**	2.MX.310.00.000.0	TUBE ROLLER 3M ALL
**	2.MX.350.00.000.0	TUBE ROLLER 3,5M ALL
**	2.MXK.410.00.000.0	TUBE ROLLER 4M ALL
**	2.MXK.450.00.000.0	TUBE ROLLER 4,5M ALL
**	2.MXK.510.00.000.0	TUBE ROLLER 5M ALL
**	2.MXK.570.00.000.0	TUBE ROLLER 5,5M ALL
**	2.MXK.514.00.000.0	TUBE ROLLER 6M ALL
1	2.MX.113.00.000.0	ROLLER FRAME HELIX-TUBE 2,5M
	2.MX.119.00.000.0	ROLLER FRAME HELIX-TUBE 3M
	2.MX.205.00.000.0	ROLLER FRAME HELIX-TUBE 3,5M
	2.MXK.117.00.000.0	ROLLER FRAME HELIX-TUBE 4M LEFT
	2.MXK.108.00.000.0	ROLLER FRAME HELIX-TUBE 4M RIGHT
	2.MXK.112.00.000.0	ROLLER FRAME HELIX-TUBE 4,5M LEFT
	2.MXK.113.00.000.0	ROLLER FRAME HELIX-TUBE 4,5M RIGHT
	2.MXK.136.00.000.0	ROLLER FRAME HELIX-TUBE 5M LEFT
	2.MXK.131.00.000.0	ROLLER FRAME HELIX-TUBE 5M RIGHT
	2.MXK.562.00.000.0	ROLLER FRAME HELIX-TUBE 5,5M LEFT
	2.MXK.561.00.000.0	ROLLER FRAME HELIX-TUBE 5,5M RIGHT
	2.MXK.513.02.000.0	ROLLER FRAME HELIX-TUBE 6M LEFT
	2.MXK.513.01.000.0	ROLLER FRAME HELIX-TUBE 6M RIGHT
2	2.MX.114.00.000.0	TUBE ROLLER 2,5M
	2.MX.118.00.000.0	TUBE ROLLER 3M
	2.MX.210.00.000.0	TUBE ROLLER 3,5M
	2.MXK.109.00.000.0	TUBE ROLLER 2M
	2.MXK.114.00.000.0	TUBE ROLLER 2,25M
	2.MX.114.00.000.0	TUBE ROLLER 2,5M (5M)
	2.MXK.571.00.000.0	TUBE ROLLER 2,75M
	2.MX.118.00.000.0	TUBE ROLLER 3M (6M)
3	7.4.15.1005	BEARING UCF 210
4	7.4.18.1796	BOLT M16x60 DIN 7991 10.9
5	7.4.23.1039	NUT M16 DIN 985

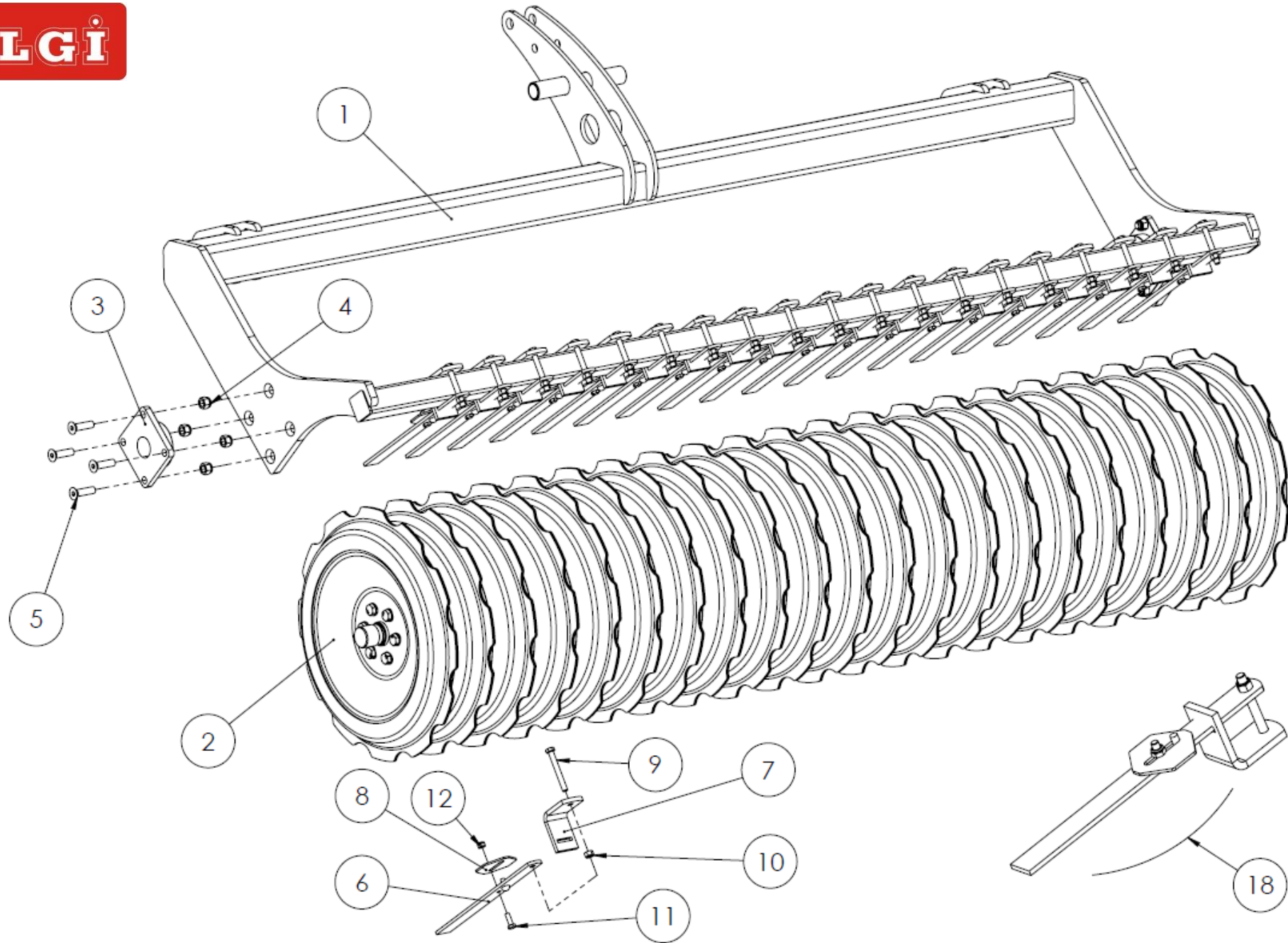


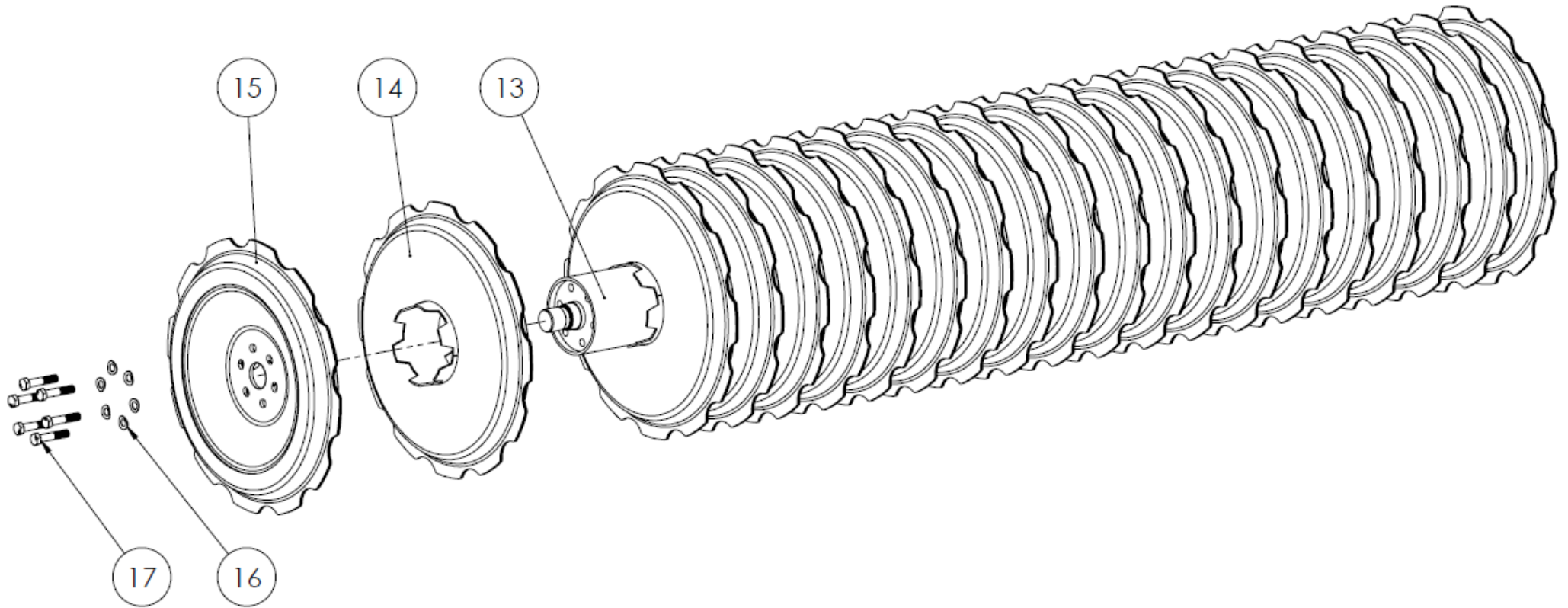
NOTCHED CAGE ROLLER GROUP

NO	PART CODE	NAME & DESCRIPTION
**	2.ARG.270.00.000.0	NOTCHED CAGE ROLLER 2,5M ALL
**	2.ARG.120.00.000.0	NOTCHED CAGE ROLLER 3M ALL
**	2.ARG.130.00.000.0	NOTCHED CAGE ROLLER 3,5M ALL
**	2.MXK.220.00.000.0	NOTCHED CAGE ROLLER 4M ALL
**	2.MXK.210.00.000.0	NOTCHED CAGE ROLLER 4,5M ALL
**	2.MXK.200.00.000.0	NOTCHED CAGE ROLLER 5M ALL
**	2.MXK.580.00.000.0	NOTCHED CAGE ROLLER 5,5M ALL
1	2.MX.113.00.000.0	ROLLER FRAME HELIX-TUBE 2,5M
	2.MX.119.00.000.0	ROLLER FRAME HELIX-TUBE 3M
	2.MX.205.00.000.0	ROLLER FRAME HELIX-TUBE 3,5M
	2.MXK.117.00.000.0	ROLLER FRAME HELIX-TUBE 4M LEFT
	2.MXK.108.00.000.0	ROLLER FRAME HELIX-TUBE 4M RIGHT
	2.MXK.112.00.000.0	ROLLER FRAME HELIX-TUBE 4,5M LEFT
	2.MXK.113.00.000.0	ROLLER FRAME HELIX-TUBE 4,5M RIGHT
	2.MXK.136.00.000.0	ROLLER FRAME HELIX-TUBE 5M LEFT
	2.MXK.131.00.000.0	ROLLER FRAME HELIX-TUBE 5M RIGHT
	2.MXK.562.00.000.0	ROLLER FRAME HELIX-TUBE 5,5M LEFT
	2.MXK.561.00.000.0	ROLLER FRAME HELIX-TUBE 5,5M RIGHT
2	2.MXK.201.00.000.0	NOTCHED CAGE ROLLER 2,5M
	2.ARG.122.00.000.0	NOTCHED CAGE ROLLER 3M
	2.ARG.132.00.000.0	NOTCHED CAGE ROLLER 3,5M
	2.MXK.221.00.000.0	NOTCHED CAGE ROLLER 2M
	2.ARG9.501.00.000.0	NOTCHED CAGE ROLLER 2,25M
	2.MXK.201.00.000.0	NOTCHED CAGE ROLLER 2,5M (5M)
	2.MXK.581.00.000.0	NOTCHED CAGE ROLLER 2,75M
3	7.4.15.1005	BEARING UCF 210
4	7.4.18.1796	BOLT M16x60 DIN 7991 10.9
5	7.4.23.1039	NUT M16 DIN 985



HELIX ROLLER GROUP		
NO	PART CODE	NAME & DESCRIPTION
**	2.MX.252.00.000.0	HELIX ROLLER 2,5M ALL
**	2.MX.312.00.000.0	HELIX ROLLER 3M ALL
**	2.MX.352.00.000.0	HELIX ROLLER 3,5M ALL
**	2.MXK.412.00.000.0	HELIX ROLLER 4M ALL
**	2.MXK.452.00.000.0	HELIX ROLLER 4,5M ALL
**	2.MXK.512.00.000.0	HELIX ROLLER 5M ALL
**	2.MXK.560.00.000.0	HELIX ROLLER 5,5M ALL
**	2.MXK.513.00.000.0	HELIX ROLLER 6M ALL
1	2.MX.113.00.000.0	ROLLER FRAME HELIX-TUBE 2,5M
	2.MX.119.00.000.0	ROLLER FRAME HELIX-TUBE 3M
	2.MX.205.00.000.0	ROLLER FRAME HELIX-TUBE 3,5M
	2.MXK.117.00.000.0	ROLLER FRAME HELIX-TUBE 4M LEFT
	2.MXK.108.00.000.0	ROLLER FRAME HELIX-TUBE 4M RIGHT
	2.MXK.112.00.000.0	ROLLER FRAME HELIX-TUBE 4,5M LEFT
	2.MXK.113.00.000.0	ROLLER FRAME HELIX-TUBE 4,5M RIGHT
	2.MXK.136.00.000.0	ROLLER FRAME HELIX-TUBE 5M LEFT
	2.MXK.131.00.000.0	ROLLER FRAME HELIX-TUBE 5M RIGHT
	2.MXK.562.00.000.0	ROLLER FRAME HELIX-TUBE 5,5M LEFT
	2.MXK.561.00.000.0	ROLLER FRAME HELIX-TUBE 5,5M RIGHT
	2.MXK.513.02.000.0	ROLLER FRAME HELIX-TUBE 6M LEFT
	2.MXK.513.01.000.0	ROLLER FRAME HELIX-TUBE 6M RIGHT
2	2.MX.112.00.000.0	HELIX ROLLER 2,5M
	2.MX.116.00.000.0	HELIX ROLLER 3M
	2.MX.204.00.000.0	HELIX ROLLER 3,5M
	2.MXK.107.00.000.0	HELIX ROLLER 4M
	2.MXK.116.00.000.0	HELIX ROLLER 4,5M
	2.MX.112.00.000.0	HELIX ROLLER 2,5M (5M)
	2.MXK.563.00.000.0	HELIX ROLLER 5,5M
	2.MX.116.00.000.0	HELIX ROLLER 3M (6M)
3	7.4.15.1005	BEARING UCF 210
4	7.4.18.1796	BOLT M16x60 DIN 7991 10.9
5	7.4.23.1039	NUT M16 DIN 985
6	7.2.2.1044	HELIX SPRING
7	7.4.18.1769	BOLT M12x50 DIN 7991 10.9
8	7.4.23.1037	NUT M12 DIN 985

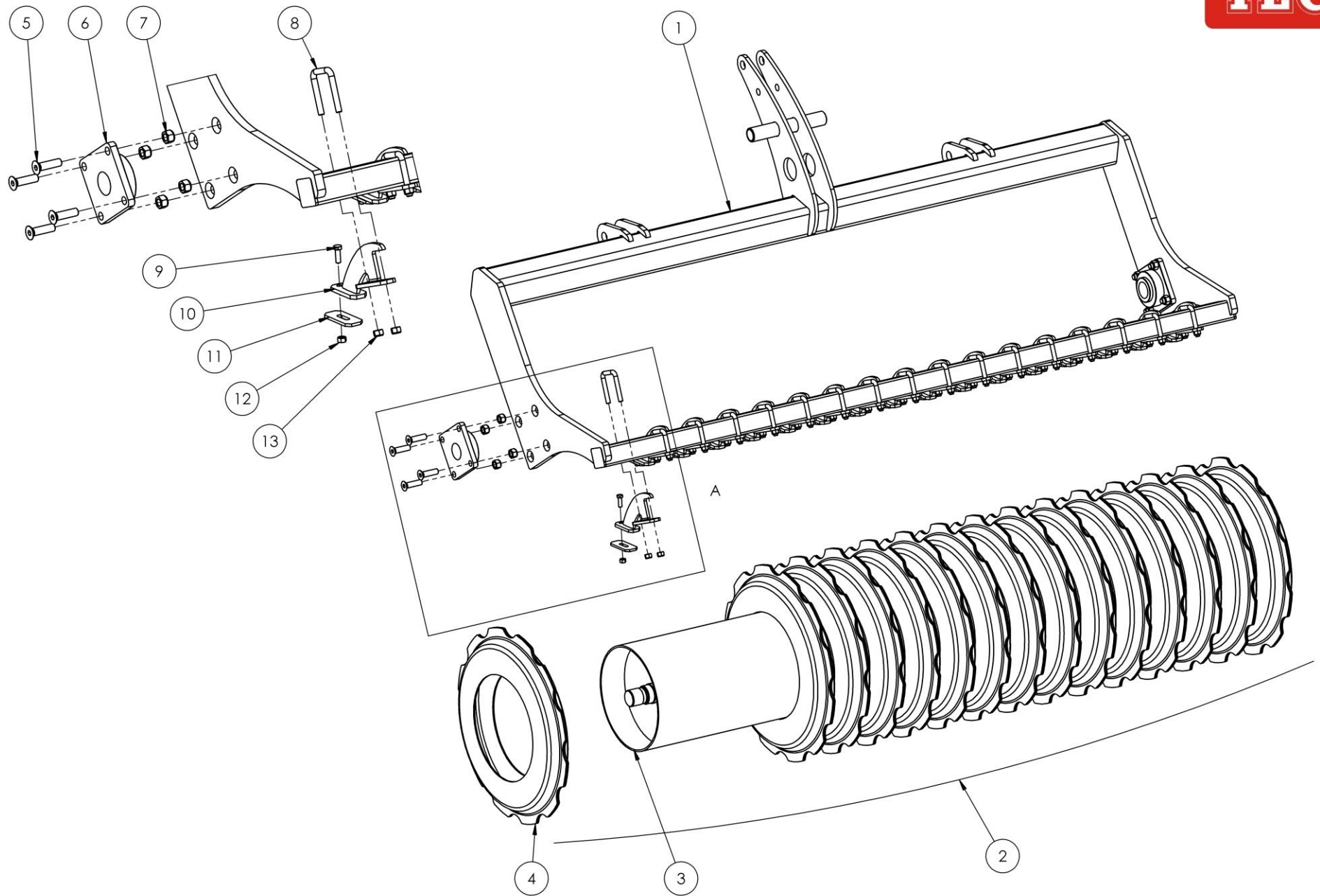




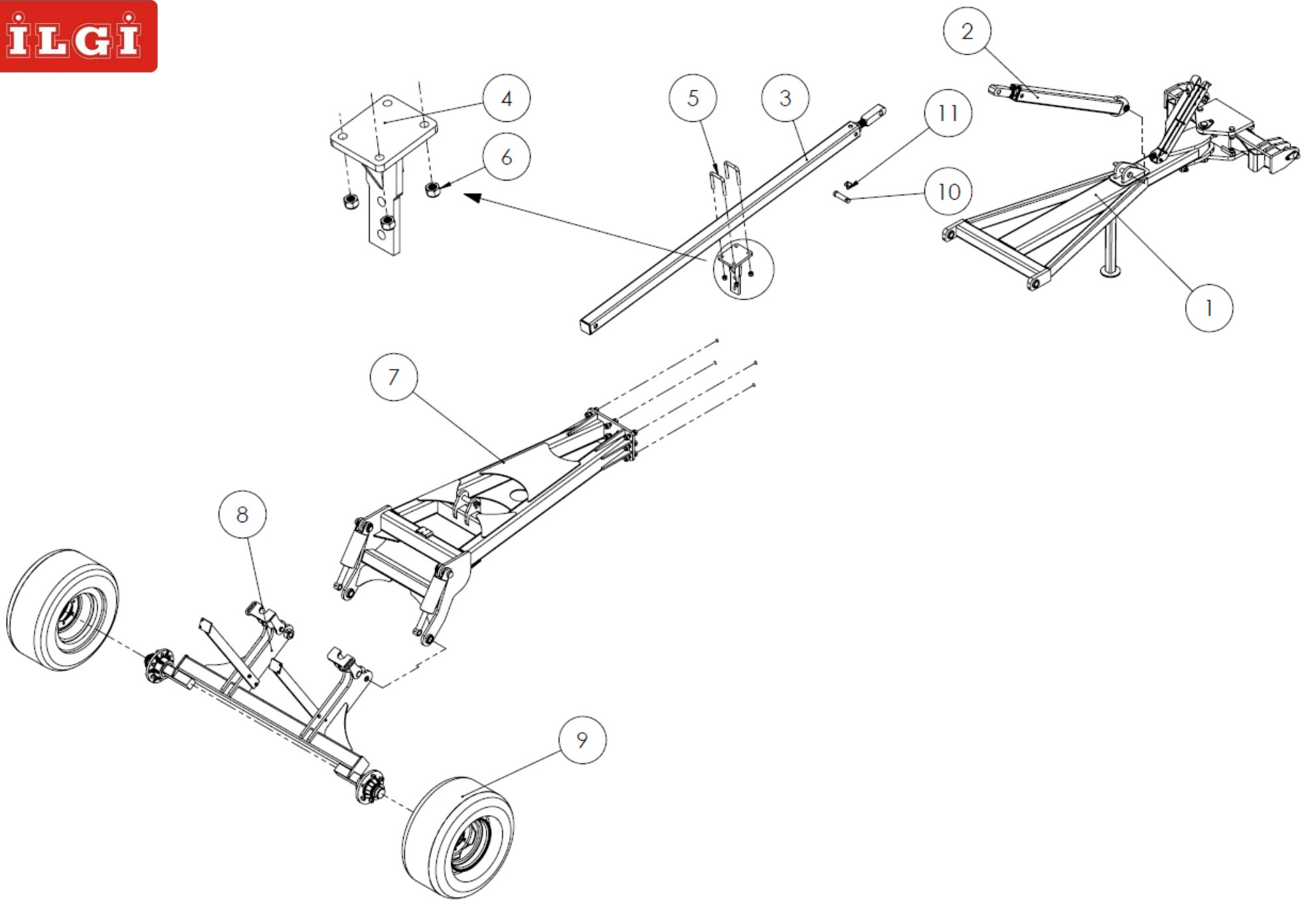
CRACKER ROLLER GROUP

NO	PART CODE	NAME & DESCRIPTION
**	2.MX.255.00.000.0	CRACKER ROLLER 2,5M ALL
**	2.MX.300.00.000.0	CRACKER ROLLER 3M ALL
**	2.MX.355.00.000.0	CRACKER ROLLER 3,5M ALL
**	2.MXK.411.00.000.0	CRACKER ROLLER 4M ALL
**	2.MXK.451.00.000.0	CRACKER ROLLER 4,5M ALL
**	2.MXK.511.00.000.0	CRACKER ROLLER 5M ALL
**	2.MXK.550.00.000.0	CRACKER ROLLER 5,5M ALL
**	2.MXK.611.00.000.0	CRACKER ROLLER 6M ALL
1	2.MX.111.00.000.0	SCRAPER FRAME 2,5M
	2.MX.115.00.000.0	SCRAPER FRAME 3M
	2.MX.195.00.000.0	SCRAPER FRAME 3,5M
	2.MXK.118.00.000.0	SCRAPER FRAME 4M LEFT
	2.MXK.106.00.000.0	SCRAPER FRAME 4M RIGHT
	2.MXK.119.00.000.0	SCRAPER FRAME 4,5M LEFT
	2.MXK.111.00.000.0	SCRAPER FRAME 4,5M RIGHT
	2.MXK.120.00.000.0	SCRAPER FRAME 5M LEFT
	2.MXK.121.00.000.0	SCRAPER FRAME 5M RIGHT
	2.MXK.552.00.000.0	SCRAPER FRAME 5,5M LEFT
	2.MXK.551.00.000.0	SCRAPER FRAME 5,5M RIGHT
	2.MXK.123.00.000.0	SCRAPER FRAME 6M LEFT
	2.MXK.122.00.000.0	SCRAPER FRAME 6M RIGHT
2	2.MX.110.00.000.0	CRACKER ROLLER 2,5M
	2.MX.120.00.000.0	CRACKER ROLLER 3M
	2.MX.190.00.000.0	CRACKER ROLLER 3,5M
	2.MXK.105.00.000.0	CRACKER ROLLER 2M
	2.MXK.110.00.000.0	CRACKER ROLLER 2,25M
	2.MX.110.00.000.0	CRACKER ROLLER 2,5M
	2.MXK.553.00.000.0	CRACKER ROLLER 2,75M
	2.MX.120.00.000.0	CRACKER ROLLER 3M (6M)
3	7.4.15.1005	BEARING UCF 210
4	7.4.23.1039	NUT M16 DIN 985
5	7.4.18.1796	BOLT M16x60 DIN 7991 10.9
6	2.PM.111.00.014.0	SCRAPER FLAT BAR
7	2.PM.111.00.019.0	SCRAPER CLAMP
8	7.2.2.1418	SCRAPER POINT
9	7.4.18.1129	BOLT M12x90 DIN 931
10	7.4.23.1037	NUT M12 DIN 985
11	7.4.18.1095	BOLT M10x30 DIN 933
12	7.4.23.1036	NUT M10 DIN 985

13	2.MX.110.02.000.0	ROLLER PIPE GROUP 2,5M
	2.PM.130.01.000.0	ROLLER PIPE GROUP 3M
	2.MX.190.01.000.0	ROLLER PIPE GROUP 3,5M
	2.MXK.105.01.000.0	ROLLER PIPE GROUP 2M
	2.MXK.110.01.000.0	ROLLER PIPE GROUP 2,25M
	2.MX.110.02.000.0	ROLLER PIPE GROUP 2,5M
	2.MXK.553.01.000.0	ROLLER PIPE GROUP 2,75M
	2.PM.130.01.000.0	ROLLER PIPE GROUP 3M (6M)
14	2.PM.144.01.000.0	ROLLER MIDDLE GROUP
15	2.PM.144.02.000.0	ROLLER HEAD GROUP
16	7.4.24.1007	WASHER M16 DIN 137
17	7.4.18.2281	BOLT M16x80 DIN 933 10.9
18	2.PM.111.05.000.0	SCRAPER GROUP

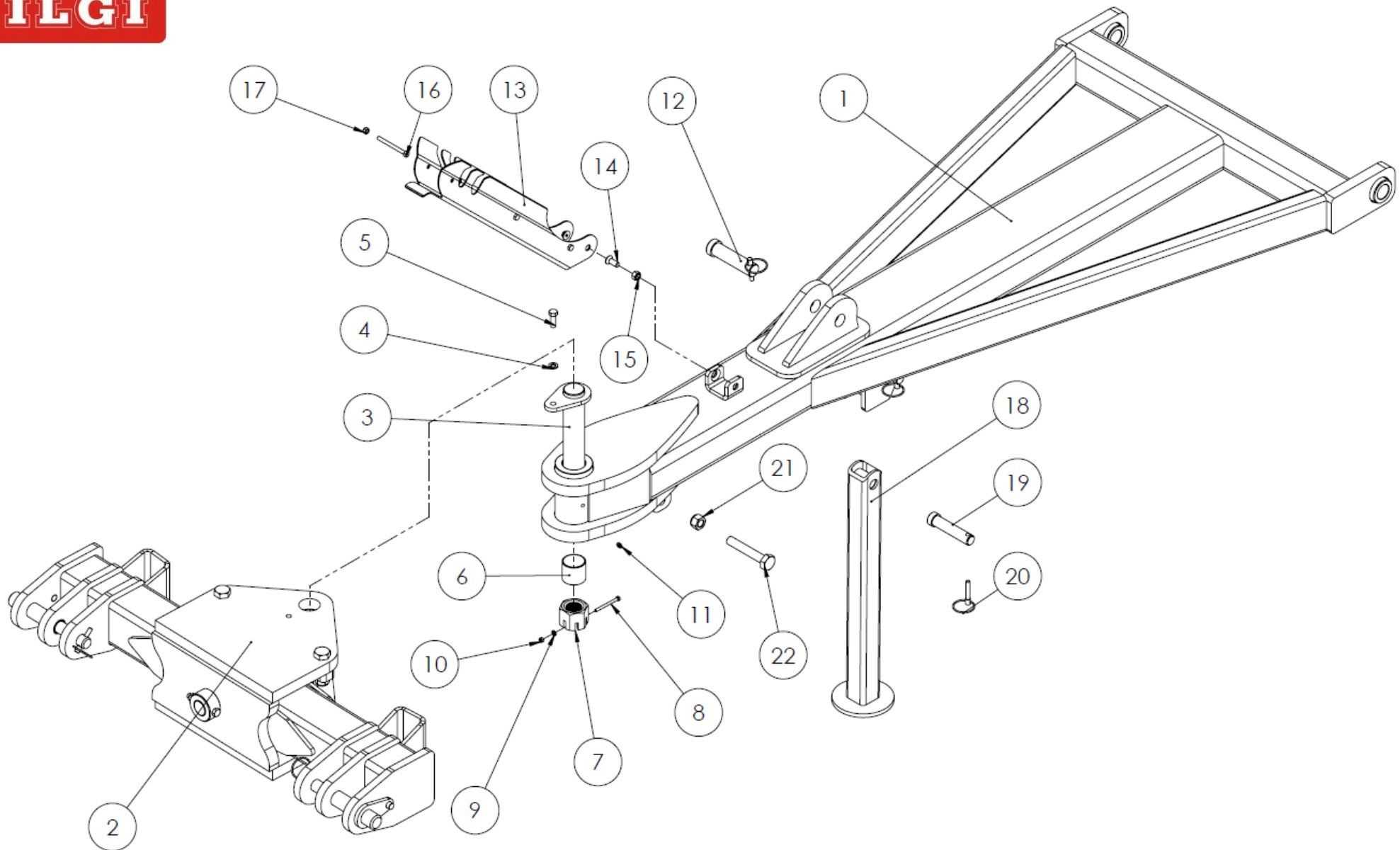


CRACKER ROLLER NEW		
NO	PART CODE	NAME & DESCRIPTION
1	2.MX.111.00.000.0	SCRAPER FRAME 2,5M
	2.MX.115.00.000.0	SCRAPER FRAME 3M
	2.MX.195.00.000.0	SCRAPER FRAME 3,5M
	2.MXK.118.00.000.0	SCRAPER FRAME 4M LEFT
	2.MXK.106.00.000.0	SCRAPER FRAME 4M RIGHT
	2.MXK.119.00.000.0	SCRAPER FRAME 4,5M LEFT
	2.MXK.111.00.000.0	SCRAPER FRAME 4,5M RIGHT
	2.MXK.120.00.000.0	SCRAPER FRAME 5M LEFT
	2.MXK.121.00.000.0	SCRAPER FRAME 5M RIGHT
	2.MXK.552.00.000.0	SCRAPER FRAME 5,5M LEFT
	2.MXK.551.00.000.0	SCRAPER FRAME 5,5M RIGHT
	2.MXK.123.00.000.0	SCRAPER FRAME 6M LEFT
	2.MXK.122.00.000.0	SCRAPER FRAME 6M RIGHT
2	2.PM.721.00.000.0	CRACKER ROLLER 2M
	2.PM.731.00.000.0	CRACKER ROLLER 2,5M
	2.PM.710.00.000.0	CRACKER ROLLER 3M
	2.PM.741.00.000.0	CRACKER ROLLER 3,5M
3	2.PM.720.01.000.0	ROLLER PIPE GROUP 2M
	2.PM.730.01.000.0	ROLLER PIPE GROUP 2,5M
	2.PM.710.01.000.0	ROLLER PIPE GROUP 3M
	2.PM.740.01.000.0	ROLLER PIPE GROUP 3,5M
4	2.PM.710.03.000.0	ROLLER MIDDLE GROUP
5	7.4.18.1796	BOLT M16X60 10.9 DIN 7991
6	7.4.15.1005	BEARING UCF 210
7	7.4.23.1039	NUT M16 DIN 985
8	7.4.18.2228	BOLT U M12 (60x60)
9	7.4.18.1095	BOLT M10x30 DIN 933
10	2.PM.711.01.000.0	SCRAPER GROUP
11	7.2.2.PM.0089	SCRAPER BIT
12	7.4.23.1010	NUT M10 DIN 934
13	7.4.23.1037	NUT M12 DIN 985

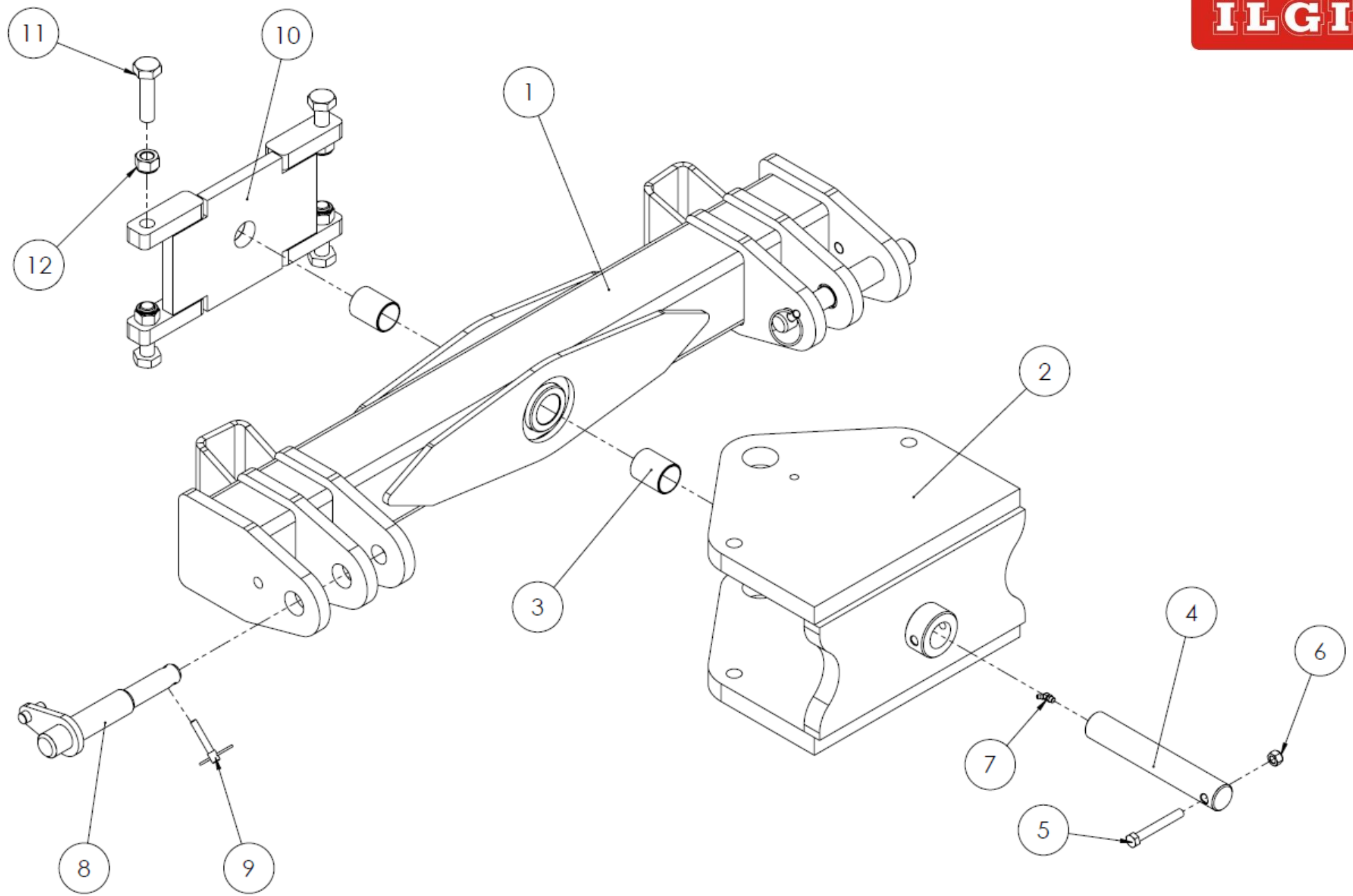


DRAW BAR AXLE GROUP - 2.MXK.400.00.000.0

NO	PART CODE	NAME & DESCRIPTION
1	2.MXK.401.00.000.0	TOWING DRAW GROUP MXK
2	2.PM.125.00.000.0	AJDUSTABLE DRAW TENSION GROUP
3	2.MXK.402.01.000.0	ADJUSTABLE UP TENSION GROUP MXK
4	2.PM.121.03.000.0	UP TENSION SUPPORT
5	7.4.18.2221	U BOLT M20x1,5x100
6	7.4.23.1078	BOLT M20x1,5 DIN 985
7	2.PM.138.00.000.0	AXLE DRAW GROUP
8	2.PM.135.00.000.0	TOWABLE BACK AXLE
9	7.4.13.1008	WHEEL 400x60x15,5
10	7.2.5.MX.0006	UP JOIN PIN
11	7.4.28.1001	PIN SPRING Ø10

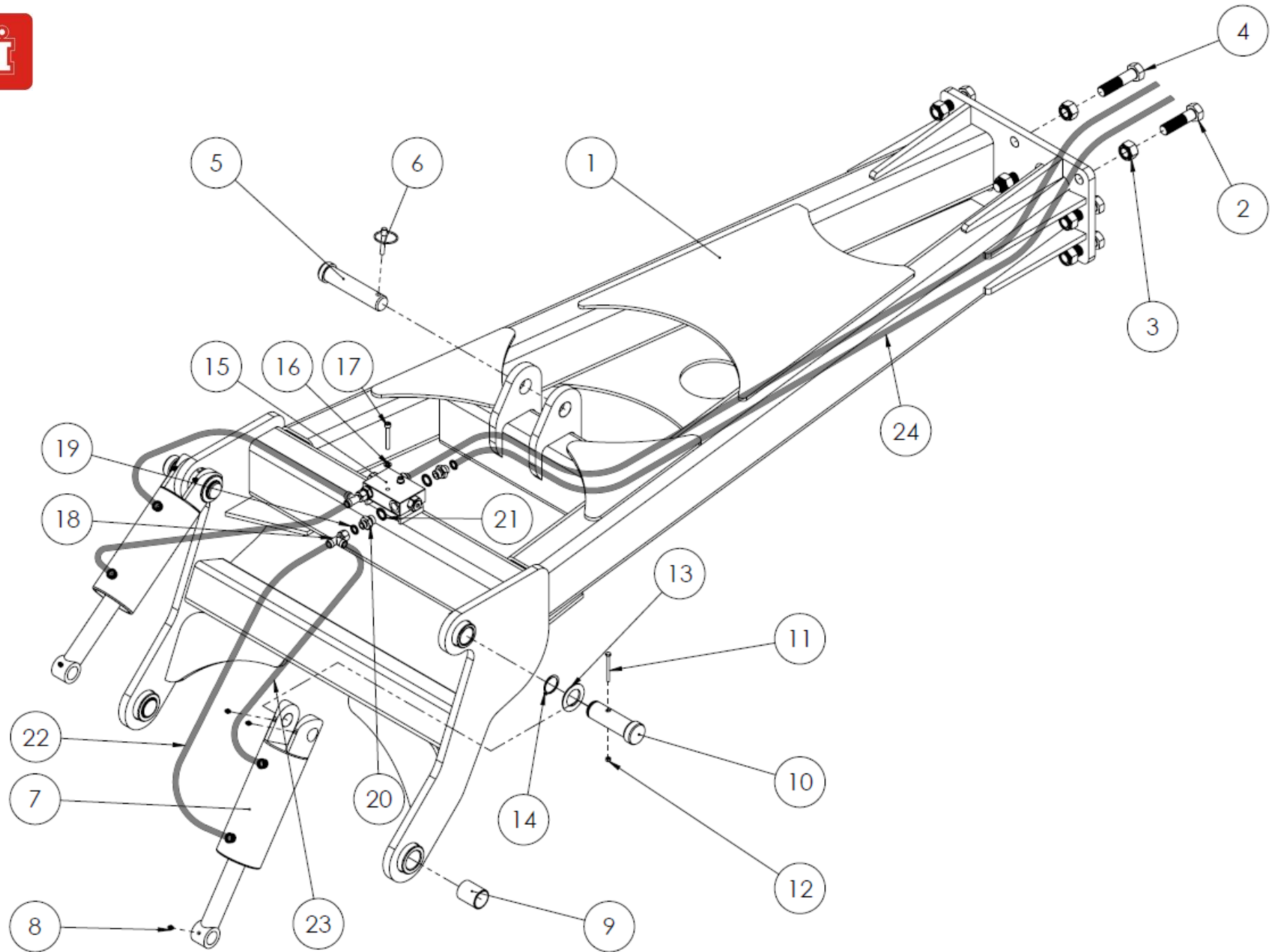


TOWING DRAW GROUP - 2.MXK.401.00.000.0		
NO	PART CODE	NAME & DESCRIPTION
1	2.PM.136.01.000.0	TOWING DRAW FRAME
2	2.PM.400.03.000.0	TUBE TOWING GROUP
3	7.2.5.PM.0065	DRAW VERTICAL JOIN PIN
4	7.4.24.1004	WASHER SPRING M12 DIN 127/B
5	7.4.18.1119	BOLT M12x35 DIN 933
6	7.2.4.1003	BUSHING Ø55xØ50x50
7	7.4.23.1075	NUT SLOTTED M38x3,5
8	7.4.18.1042	BOLT M6x70 DIN 931
9	7.4.20.1004	WASHER M6 DIN 126
10	7.4.23.1033	NUT M6 DIN 985
11	7.4.38.1005	GREASE NIPPLE 5/16" DIN 71412 H1
12	7.2.5.MX.0006	UP JOIN PIN
13	2.SSR.102.00.010.0	HYDRAULIC PIPE HOLDER
14	7.4.18.1767	BOLT HEX SOCKET M12x35 DIN 7991
15	7.4.23.1011	NUT M12 DIN 985
16	7.4.18.1042	BOLT M6x70 DIN 931
17	7.4.23.1033	NUT M6 DIN 985
18	2.MXK.401.01.000.0	FRONT SUPPORT TINE
19	7.2.5.PM.0061	SUPPORT TINE JOIN PIN
20	7.4.28.1001	PIN SPRING Ø10
21	7.4.23.1041	NUT M20 DIN 985
22	7.4.18.1222	BOLT M20x120 DIN 931



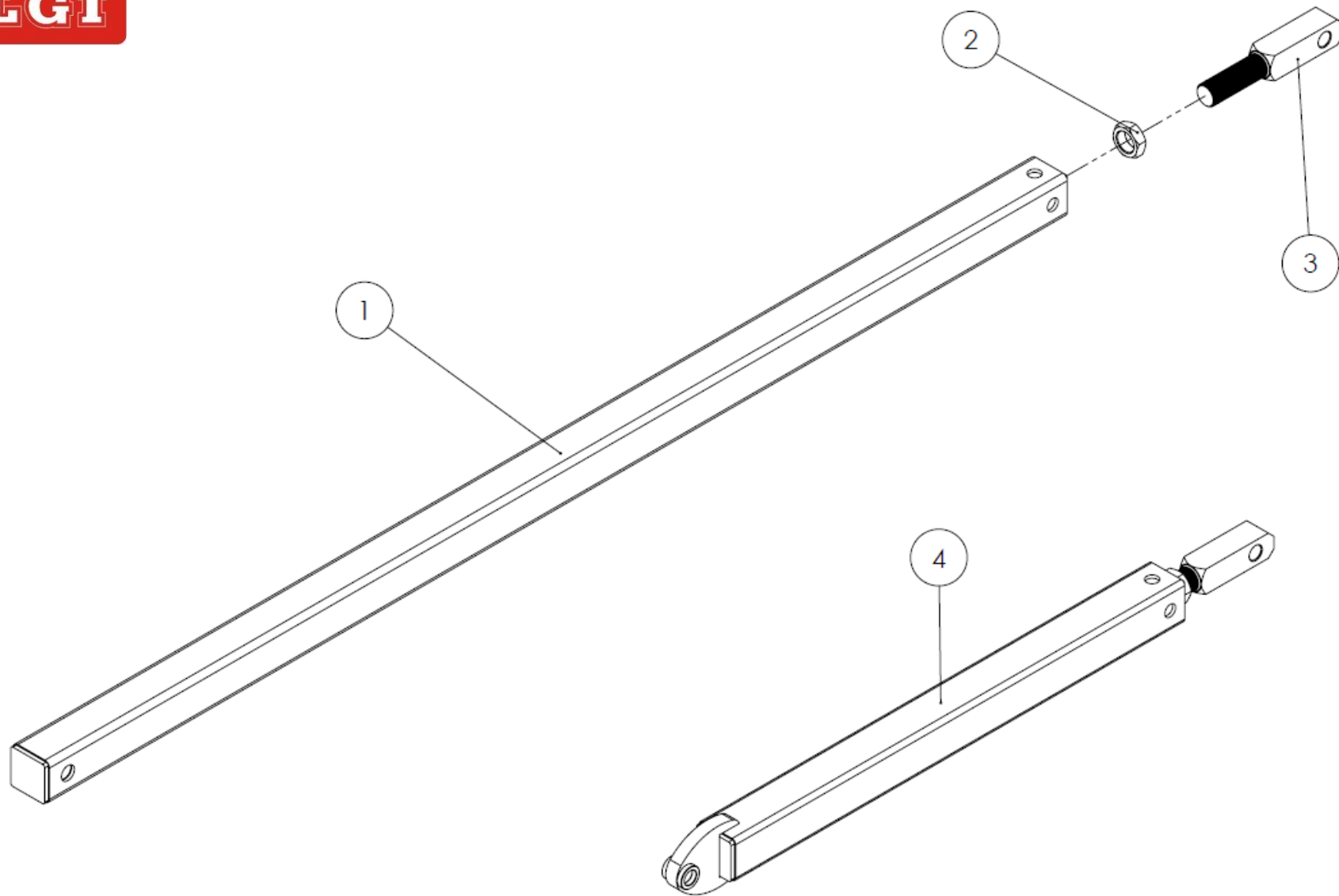
TUBE TOWING GROUP - 2.PM.400.03.000.0

NO	PART CODE	NAME & DESCRIPTION
1	2.PM.136.04.000.0	TUBE TOWING FRAME 4-5
2	2.APL.136.02.000.0	ROTARY TOWING GROUP 4-5
3	7.2.4.1007	BUSHING Ø45xØ40x55
4	7.2.5.PM.0067	FRONT DRAW TOWING PIN
5	7.4.18.1129	BOLT M12x90 DIN 931
6	7.4.23.1037	NUT M12 DIN 985
7	7.4.38.1002	GREASE NIPPLE M6 DIN 71412 H2
8	7.2.5.PM.0066	FRONT DRAW JOIN PIN 4-5
9	7.4.28.1001	PIN SPRING Ø10
10	2.APL.136.04.000.0	ROTARY TOWING INSIDE
11	7.4.18.1218	BOLT M12x80 DIN 931
12	7.4.23.1041	NUT M20 DIN 985

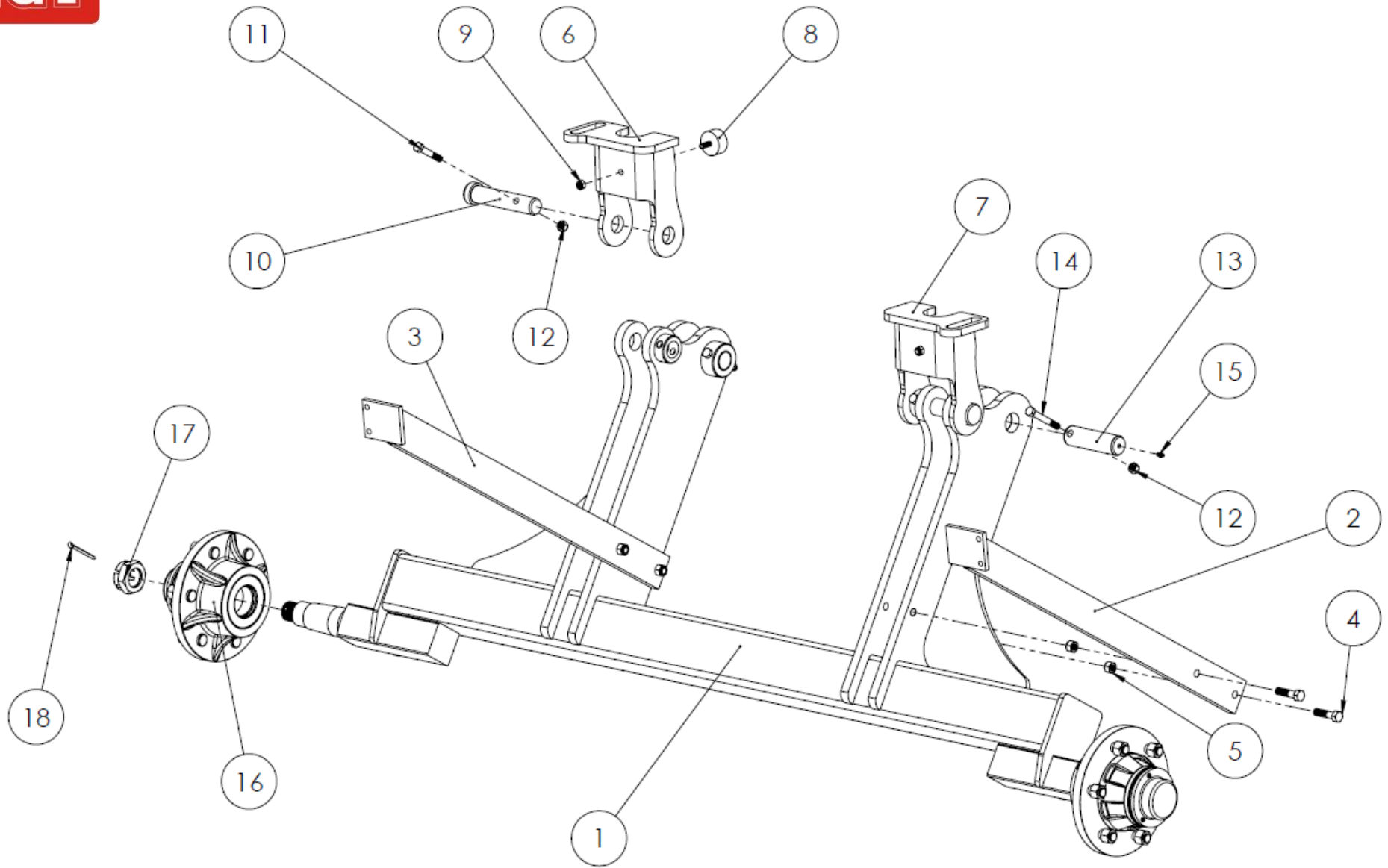


AXLE DRAW GROUP - 2.PM.138.00.000.0

NO	PART CODE	NAME & DESCRIPTION
1	2.PM.135.01.000.0	AXLE DRAW FRAME GROUP
2	7.4.18.1001	BOLT M24x90 DIN 931 10.9
3	7.4.23.1043	NUT M24 DIN 985
4	7.4.18.2271	BOLT M24x100 DIN 931 10.9
5	7.2.5.PM.0070	AXLE TENSION JOIN PIN
6	7.4.28.1001	PIN SPRING Ø10
7	7.4.3.1015	CYLINDER AXLE PM-APL
8	7.4.38.1003	GREASE NIPPLE M6 DIN 71412 H1
9	7.2.4.1007	BUSHING Ø45xØ40x55
10	7.2.5.PM.0071	AXLE JOIN CYLINDER PIN
11	7.4.18.1042	BOLT M6x70 DIN 931
12	7.4.23.1033	NUT M6 DIN 985
13	7.4.20.1030	WASHER M40 DIN 126
14	7.4.4.1009	CIRCLIP Ø40 DIN 471
15	7.4.2.1010	1/2 A VBPDE LOCK VALVE
16	7.4.20.1005	WASHER M8 DIN 126
17	7.4.18.1468	BOLT M8x60 DIN 912
18	7.4.2.1177	UNION SIDE M18x1,5 12L
19	7.4.2.1194	WASHER 3/8"
20	7.4.2.1272	UNION R 1/2 M18x1,5 12L
21	7.4.2.1192	WASHER 1/2"
22	7.4.2.1397	3/8" R2 80 cm M18x1,5 HOSE
23	7.4.2.1398	3/8" R2 65 cm M18x1,5 HOSE
24	7.4.2.1432	3/8" R2 650 cm M18x1,5 R1/2" MALE CAPLIN

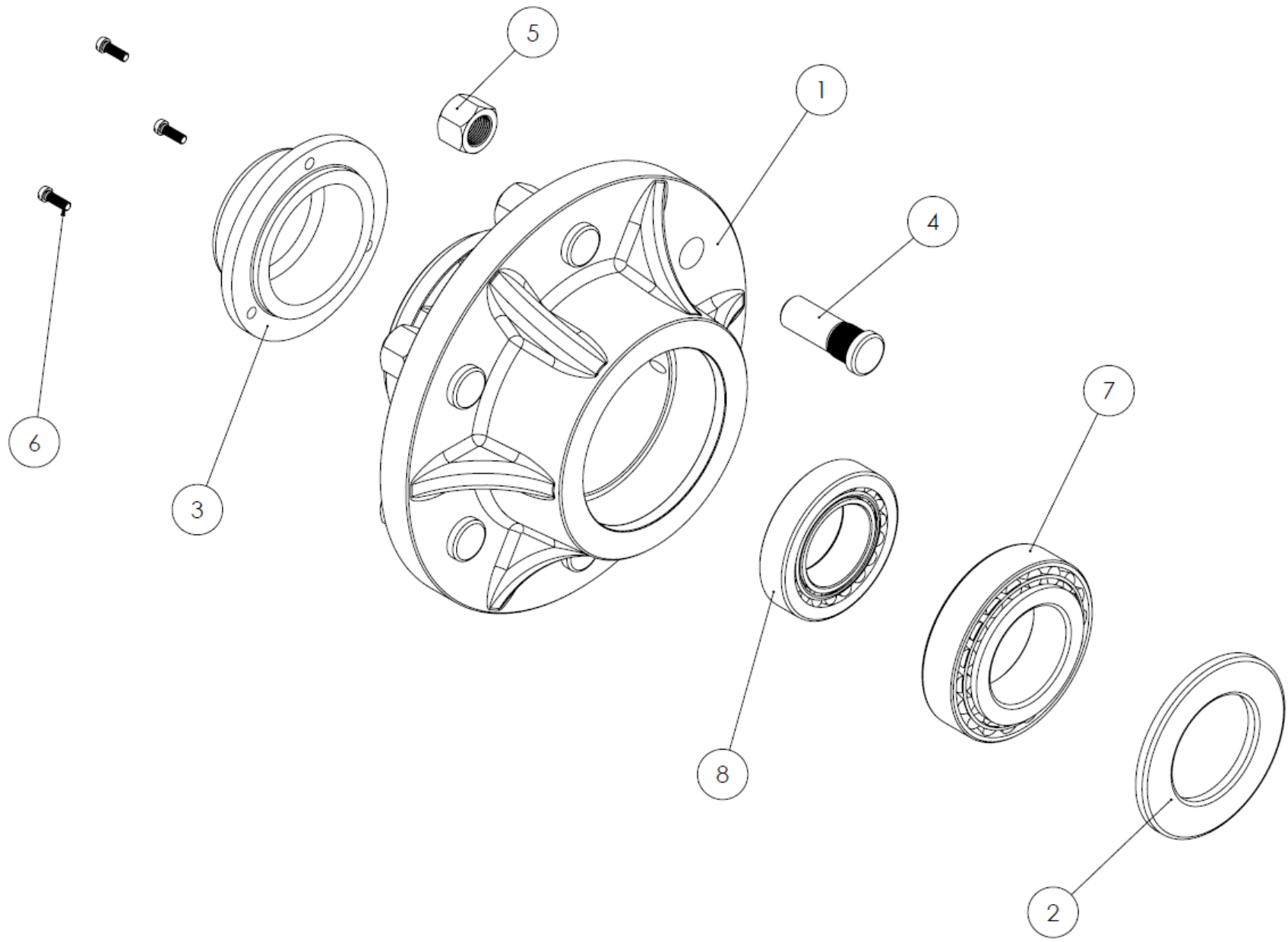


TENSION GROUP		
NO	PART CODE	NAME & DESCRIPTION
1	2.MXK.402.01.000.0	ADJUSTABLE UP TENSION FRAME
2	2.PM.121.00.014.0	TENSION NUT
3	7.2.5.PM.0058	ADJUSTABLE UP TENSION SCREW
4	2.PM.121.01.000.0	ADJUSTABLE DRAW TENSION FRAME



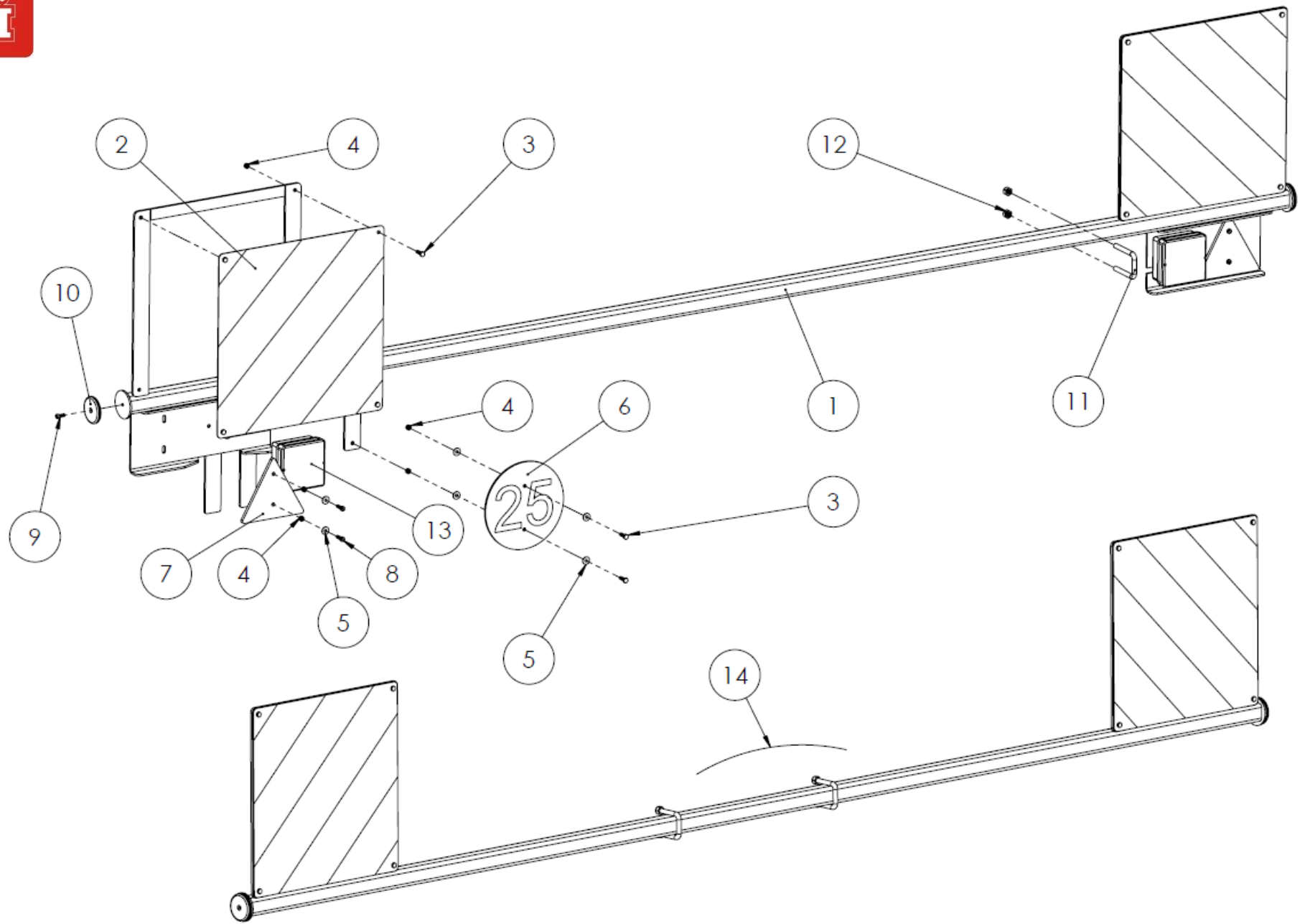
TOWABLE AXLE GROUP - 2.PM.135.00.000.0

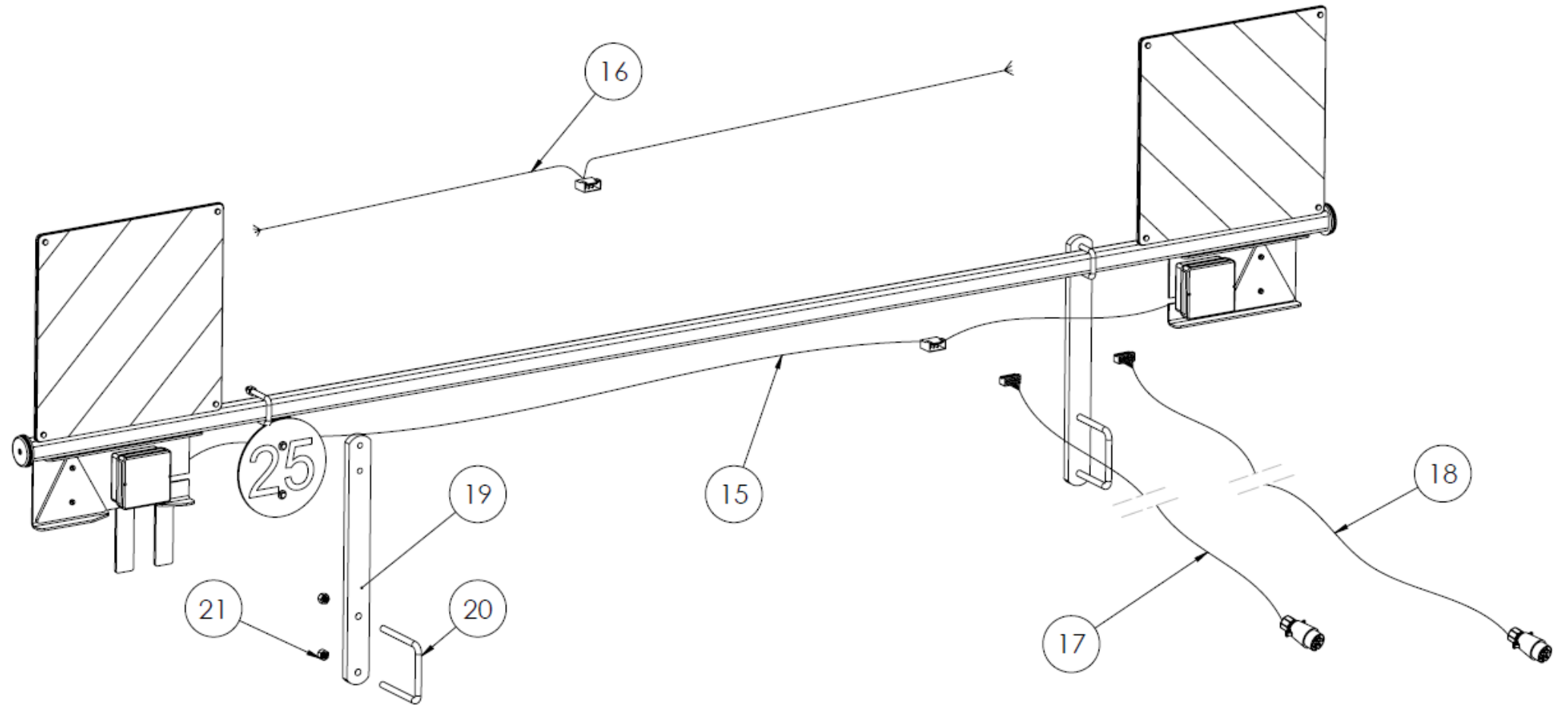
NO	PART CODE	NAME & DESCRIPTION
1	2.APL.135.02.000.0	AXLE FRAME GROUP
2	2.PM.135.05.000.0	TRAFFIC FRAME JOIN BAR RIGHT
3	2.PM.135.06.000.0	TRAFFIC FRAME JOIN BAR LEFT
4	7.4.18.1147	BOLT M14x55 DIN 931
5	7.4.23.1038	NUT M14 DIN 985
6	2.PM.135.04.000.0	BACK CYLINDER LOCKER LEFT
7	2.PM.135.03.000.0	BACK CYLINDER LOCKER RIGHT
8	7.2.2.1002	RUBBER BLOCK M10
9	7.4.23.1036	NUT M10 DIN 985
10	7.2.5.PM.0063	AXLE FRAME CYLINDER JOIN PIN
11	7.4.18.1126	BOLT M12x70 DIN 931
12	7.4.23.1037	NUT M12 DIN 985
13	7.2.5.PM.0062	AXLE JOIN PIN
14	7.4.18.1129	BOLT M12x90 DIN 931
15	7.4.38.1005	GREASE NIPPLE 5/16" DIN 71412 H1
16	2.APL.185.00.011.0	HUB ASSEMBLY 10-12
17	7.4.23.1084	NUT SLOTTED M39x2
18	7.4.19.1070	SPLIT PIN Ø6x70 DIN 94



HUB ASSEMBLY - 10-12

NO	PART CODE	NAME & DESCRIPTION
1	7.2.1.1044	HUB 10-12
2	7.4.16.1036	SEAL $\varnothing 65 \times \varnothing 110 \times 7$
3	7.2.2.1448	HUB CAP 10-12
4	7.4.18.2203	WHEEL BOLT 3/4"
5	7.4.23.1002	WHEEL NUT 3/4"
6	7.4.18.2224	BOLT M6x16 SLOTTED HEAD DIN1207
7	7.4.15.1029	BEARING 32212
8	7.4.15.1028	BEARING 32210





TRAFFIC PLATE GROUP

NO	PART CODE	NAME & DESCRIPTION
1	2.APL.112.01.000.0	TRAFFIC PLATE FRAME JOIN 3M
1-A	2.APL.116.01.000.0	TRAFFIC PLATE FRAME JOIN 3,5M
2	7.4.29.1001	TRAFFIC PLATE
3	7.4.18.1032	BOLT M6x20 DIN 933
4	7.4.23.1033	NUT M6 DIN 985
5	7.4.20.1004	WASHER M6 DIN 126
6	2.APL.112.00.005.0	25 Km SPEED PLATE
7	7.4.29.1003	REFLECTOR TRIANGLE
8	7.4.18.2225	BOLT M6x20 DIN 84
9	7.4.18.2224	BOLT M6x16 DIN 84
10	7.4.29.1002	REFLECTOR SIDE
11	7.4.18.2296	U BOLT M10 (45x75)
12	7.4.23.1036	NUT M10 DIN 985
13	7.4.27.1001	SIGNAL STOP LAMB
14	2.APL.111.01.000.0	TRAFFIC FRAME JOIN FRONT 3M
14-A	2.APL.115.01.000.0	TRAFFIC FRAME JOIN FRONT 3,5M
15	2.APL.112.02.000.0	CABLE SET BACK 3M 300 cm FEMALE
16	2.APL.112.03.000.0	CABLE SET BACK 3,5M 350 cm FEMALE
17	2.APL.111.02.000.0	CABLE SET FRONT 550 cm MALE
18	2.PM.400.02.000.0	CABLE SET 1050 cm MALE 4-5M TRAILED
19	2.MX.104.01.000.0	TRAFFIC JOIN FLAT BAR
20	7.4.18.2213	U BOLT M12x106
21	7.4.23.1037	NUT M12 DIN 985



For Better Farming

ILGI TARIM MAKINALARI SAN. TIC. LTD. ŐTI.
Izmir Karayolu Uzeri 4. Km. Söke/AYDIN-TURKEY
TEL.: +90 256 554 67 00 Fax: +90 256 554 60 07
info@ilgitarim www.ilgitarim.com