



OPERATION, SPARE PARTS AND SERVICE MANUAL

OP04

MODEL:

SERIAL N.:





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1 INTRODUCTION

Congratulations on your choice of an EI Attachment Backhoe to compliment your operation. This equipment has been designed and manufactured to feed the needs of a discerning digging, excavating or trenching industry.

This Operator's Manual is designed to provide owners/operators with the information necessary for the safe handling and correct servicing the Optimal OP-00, -02, -03,-3.2 and -04 EI Attachments Backhoes.

Safe, efficient and trouble free operation of your Backhoe requires that you and anyone else who will be operating or maintaining the machine, read and understand the Safety, Operation, Maintenance and Trouble Shooting information contained within the Operator's Manual.



Use this QR code to download the pdf of the OP and Mant. Manual.

Use the Table of Contents or index as a guide to locate required information.

Keep this manual handy for frequent reference and to pass on to new operators or owners. Call your EI Attachments dealer or the Authorized Shopfloor, if you need assistance, information or additional QR copy of this original manual.



IDENTIFICATION

Make a note of the Backhoe Model and Serial Number here below.

This information should be given to your Dealer any time you have a query or require further information concerning your machine.

Model

Serial Number

NOTES.....
.....
.....
.....

YOUR OPTIMAL DISTRIBUTOR

ADDRESS

TELEPHONE



2 SAFETY

2.1. SAFETY ALERT SYMBOL

The Safety Alert symbol means **ATTENTION ! BECOME ALERT ! YOUR SAFETY AND THE OTHERS IS INVOLVED !**



The Safety Alert symbol identifies important safety messages on the Euroimplementos Backhoe Attachment and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

WHY IS SAFETY IMPORTANT TO YOU ?

3 Big Reasons

Accidents Disable and kill
Accidents Cost
Accidents Can Be Avoided

SIGNAL WORDS:

Note the use of the signal words DANGER, WARNING and CAUTION with the safety messages. The appropriate signal word for each message has been selected using the following guide-lines:

DANGER: - Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations which, for functional purposes, can't be guarded.

WARNING: - Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION: - Indicates a potentially hazardous situation that, if not avoided, could result in minor or moderate injury. It may also be used to alert against unsafe practices.



2.2. TO THE OWNER:

YOU are responsible for that SAFE operation and maintenance of your EUROIMPLEMENTOS Backhoe attachment.

YOU must ensure that you and anyone else who is going to use, maintain or work around the backhoe be familiar with the using and maintenance procedures and related SAFETY information contained in this manual. This manual will take you step by step through your working day and alerts you to all good safety practices that should be used while using backhoe.

Remember, **YOU** are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that EVERYONE using this equipment is familiar with the recommended using and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practises.

- Backhoe attachment Owners must give operating instructions to operators or employees before allowing them to operate the machine, and at least annually thereafter.
- The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow them. Most accidents can be avoided.
- A person who hasn't read and understood all using and safety instructions is not qualified to use machine. An untrained operator exposes himself and bystanders to possible serious injury or death.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- Think SAFETY ! Work SAFELY !

2.3. GENERAL SAFETY:

1. Read and understand the Operator's Manual and all safety signs before operating, mintaining, adjusting or servicing the Backhoe.
2. Have a first-aid kit available for use should the need arise and know how to use it.
3. Have a fire extinguisher available for use should the need arise and know how to use it.
4. Don't allow riders.
5. Wear appropriate protective gear.



This list includes but isn't limited to:

- a. A helmet.
 - b. Protective shoes with slip resistant soles.
 - c. Protective glasses, goggles or face shield
 - d. Heavy gloves
 - e. So on.
6. Install and secure all guards before starting.
 7. Wear suitable ear protection for prolonged exposure to excessive noise.
 8. Lower boom and bucket, place all controls in neutral, stop engine, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or maintaining.
 9. Clear the area of people, especially small children, before using the unit.



10. Review safety related items annually.

2.4. BEFORE OPERATING:

Improper use of the backhoe can cause serious injury or death. The following safety precautions, and those given on the tractor / SSL mount installation instructions, should be thoroughly understood before attempting to operate this machine.

SAFE HANDLING OF SKID STEER LOADER REQUIRES TRAINED OPERATORS

SAFE HANDLING OF THE BACKHOE ATTACHMENT REQUIRES QUALIFIED OPERATORS

Qualified Operators understand the instructions they are given, and know the laws and regulations currently in force.


They check out the rules and regulations in force where they are working.

These may include safety requirements specially for workers.

They know the conditions they are working in.

They know the limitations of their machines as determined by the type of job to be done and jobsite conditions.

It is very important user/operator follows RIGOROUSLY Safety Regulations of the skid steer loader or the carrying machine . If he has not been trained, or if he does not know its operation and/or limitations correctly, its use is completely forbidden. In case of backhoe operation without knowledge about limitations and operation of the skid steer loader or the carrying machine, the responsibility for what may occur is absolutely yours, or to the bakhoe /skid steer loader owner's.

<p>WARNING:</p> 	<ul style="list-style-type: none"> - Never start using the backhoe before reading and study carefully the Operator's Manual. - When using the excavator (Tractor / SSL) on a slope keep it close to the ground and always facing up-hill. - Never allow anyone to remain in the area in which the excavator (Tractor / SSL) is working. - Always keep the excavator level when working on a gradient. - When gradients exist, the excavator should always work facing up-hill. Extreme care should be taken if the machine has to be turned to face down-hill. - Before proceeding through dangerous areas, all possible obstacles should be carefully analysed.
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Prior the operation, inspect the backhoe for system leaks and damaged, missing or malfunctioning components in an effort to avoid the possibility of a dangerous failure involving structural members or hydraulic system components.

Be certain any repairs necessary are completed prior to backhoe operation. Set the parking brake, place the gear shift in neutral, turn off the tractor /SSL and remove the key.

Never operate or transport unit with covers or shields removed.

Never leave the tractor/SSL running unattended.

Never take passengers on the tractor/SSL or Backhoe. There is no safe place for a passenger.

Use the handholds and step plates when getting on/off the SSL/tractor. Failure to do so could cause a fall.

2.5. EQUIPMENT SAFETY GUIDELINES:

1. Safety of the operator and bystanders is one of the main concerns in designing and developing equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury or death, study the following precautions and insist those working with you. Or for you, follow them.
2. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use and ensure that you have a good view to work.
3. Replace any no readable safety signs or decals or the ones missing. Locations of decals is indicated in this manual.
4. Never use alcoholic beverages or drugs which can hinder alertness or coordination while using the equipment. Consult your doctor about using his machine while taking prescription medications.
5. Under no circumstances should young children be allowed to work with this equipment. Don't allow persons to use or assemble this unit they have read this manual and have developed a thorough understanding of the safety precautions and of how it works. Review the safety instructions with all users annually.
6. This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible, properly trained and physically able person familiar with machinery and trained in this equipment's operations. If the elderly are assisting with work, their physical limitations need to be recognized and accommodated.
7. Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question – DON'T TRY IT.
8. Do not modify the equipment in any way. Unauthorized modification may result in serious injury or death and may impair the function and life of the equipment.



9. In addition to the design and configuration of this implement, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to Safety Messages and operation instructions in each of the appropriate sections of the engine and machine manuals. Pay close attention to the Safety Signs affixed to the excavator/Tractor/SSL and the machine.

2.6. DURING OPERATION SAFETY :

Never operate the backhoe by standing up on, or reside the machine. Operate only from the ssl/tractor seat inside the cabin.

Check your work area. Avoid hitting overhead electrical wires, underneath cables, pipes, gas lines, and so on.

Be sure operating area is clear of others during machine operations.

Never lift, hoist, or carry humans in the bucket or on any portion of the backhoe or backhoe attachments. Failure to heed, may result in serious injury or death.

Do not adjust general hydraulic incoming pressure valve on the hydraulic distributor. This valve is factory set and should be adjusted only by a qualified service person. Incorrect valve setting could result in equipment damage and/or personal injury.

Use your backhoe only for digging. Do not use it to pull things, as a battery ram or attach ropes, chains, etc, to the unit.

Use only attachments designed to be set to your backhoe.

Lower stabilizers and bucket when removing backhoe. This will increase stability to the unit.

Do not dig close to stabilizers, the ground could collapse from under the backhoe.

Do not lift loads in excess for the backhoe capacity.

Take care when you are installing a bucket larger than 400mm (digging bucket 600 mm or cleaning buckets), when you retract the boom with the turn cylinders, the bucket can hit the distributor stand or parts of the backhoe frame. Turn very slowly to realise that the operation is safe. This can occurs also when the transportation of the backhoe is carried out.

Always lower the backhoe bucket and stabilizers to ground. Shut off engine, remove key and apply the parking brake before leaving the unit unattended.

2.7. TRANSPORTING SAFETY:

- If you are going to move the backhoe coupled to a SSL/CTL:
 - Be sure that the boom is completely retracted and take know exactly the dimensions of it when driving the hosting machine where the backhoe is coupled.
 - Don't lift the arms of the SSL/CTL. Your machine could have the automatic compensation movement and the arms could be deformed or broken. This is not a proper operation. If you find some obstacle in your driving direction, before lifting the arms, unhook the arms to lift the SSL/CTL. Then hook them again.
 - If the quick couplers hydraulic connectors are coupled to the hosting machine auxiliary line and accidentally the levers of the distributor are moved, the backhoe can move and crash with something or someone. Ensure that none and nothing is into the driving direction/area.

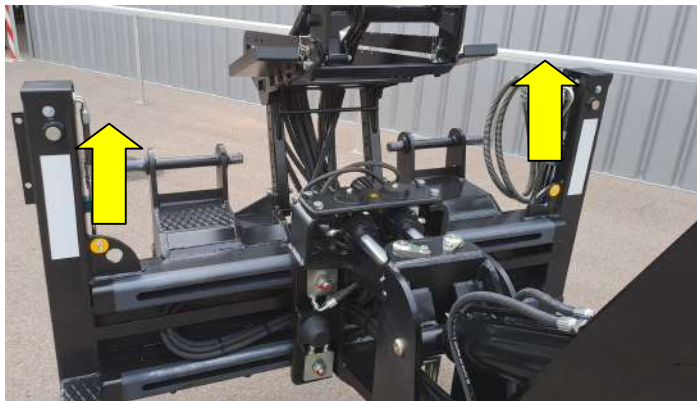


- If you are going to move the backhoe on a truck:
 - Install the backhoe onto 3 feet.



2 Stabilizer + bucket on the ground.

- Ensure the frame coupling is in contact with the floor of the truck.
- Use the lifting points to fix the backhoe with hooks and straps or chains, avoiding no movements of the backhoe when driving or when a sudden braking occurs.



When you transport backhoe with skid steer loader, do it carefully with maximum speed of 4 km/hr. Higher speed could destabilize the machine at the moment to move it from one site to another and endanger the operator's safety.

Pay special attention to:

- When transportation finishes, reallocate the boom lock to the working backhoe palce.
- Allow for height of backhoe when transporting backhoe so as not to catch unit on low overhangs or wires.
- Don't drive close to ditches, excavations,etc cave could result. Drive slow over rough terrain.
- Before proceeding through dangerous areas, all possible obstacles should be carefully analysed. Never use the machine in dangerous areas such as near trenches, steep slopes, etc. Check the site before starting moving.



- Take care if you have the backhoe connected to the SSL/CTL and you move the machine's arms, the backhoe can hit the cabin and it could damage some parts of the SSL/CTL, also that could cause damage or an accident.

2.8. STORAGE SAFETY :

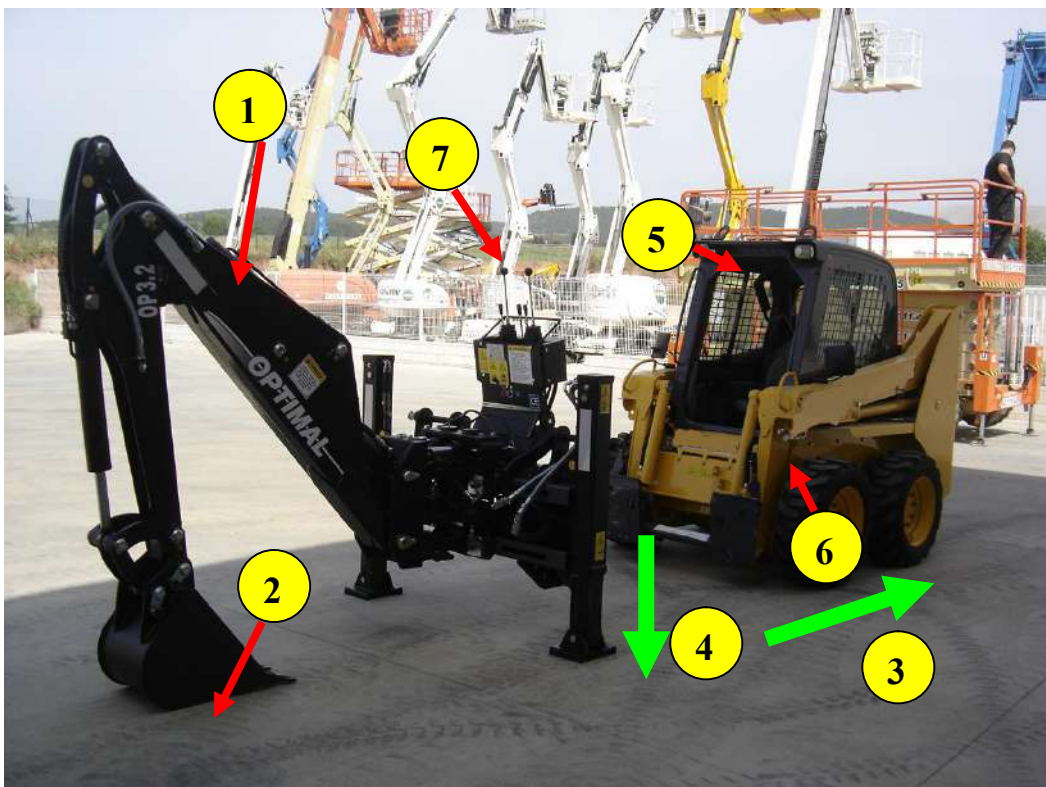
Before storage, be certain all hydraulic cylinders are fully collapsed so that the rod will not be exposed to the elements or damaged.

Be sure that your backhoe is standing on a flat surface.

Be sure that people or bystanders could not reach the attachment controls. Un match levers from distributor is recommended.

For a perfect storage follow instructions as follows:

- ❶ Center booms to the backhoe.
- ❷ Place Bucket flat.
- ❸ Uncoupling Backhoe from excavator/SSL.
- ❹ Bring the backhoe stabilizers "UP", till chasis contacts to the ground.
- ❺ Relieve pressure in the hydraulic system.
- ❻ Uncoupling Hydraulic Hoses to the excavator/Tractor or SSL.
- ❼ Relieve levers from the distributor and keep them from bystanders.





2.9. PERFORMING MAINTENANCE SAFETY:

Carefully review, understand and follow the “maintenance” section in this owners manual before attempting to service backhoe. Observe proper maintenance schedules and repairs to keep unit in safe working order.

Lower the bucket or attachment to the ground, shut off SSL or Tractor engine, and relieve pressure in the hydraulic system before adjusting, lubricating, or servicing the backhoe.

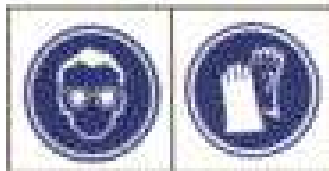
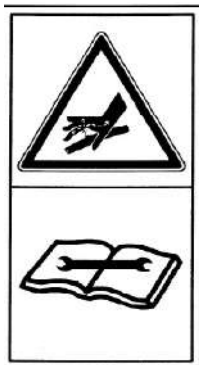
Hydraulic oil losses under pressure can penetrate the skin. Never use a part of your body to check for hydraulic leaks. Use cardboard when checking for leaks. Relieve hydraulic pressure before disconnecting any hydraulic line. Failure to heed may result in serious injury or death.

Before disconnecting hydraulic lines, lower the backhoe and attachments. Lock out the hydraulic supply and relieve all hydraulic pressure.

Replace any damages or painted-over decals.

2.10. HYDRAULIC SAFETY:

1. Make sure that all the components in the hydraulic system are kept in good condition and are clean.
2. Before applying pressure to the system, make sure all components are tight, and that lines, hoses and couplings are not damaged.
3. Don't attempt any makeshift repairs to the hydraulic lines, fittings or hoses by using tapes, clamps or cements. The hydraulic systems operates under extremely high pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.
4. 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.
5. 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.
6. Relieve pressure on hydraulic system before maintaining or working on system.





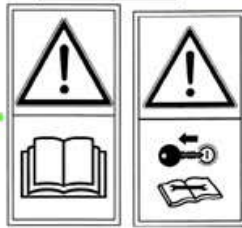
2.11. SAFETY TRAINING

1. Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator or bystander.
2. In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation. Transport, maintenance and storage of this equipment.
3. It has been said, "The best safety feature is an informed, careful operator". We ask you to be that kind of an operator. It is the operator's responsibility to read and understand ALL SAFETY and USING INSTRUCTIONS in the manual and to follow them. Accidents can be avoided.
4. Working with unfamiliar equipment can lead to careless injuries. If this machine is used by any person other than yourself, or is loaned or rented, it is the machine owner's responsibility to make certain that the operator, prior to using:
 - a. Reads and understand the operator's manuals.
 - b. Is instructed in safe and proper use.
5. Know your controls and how to stop power unit engine and machine quickly in an emergency. Read this manual and the one provided with your engine.
6. Train all new personnel and review instructions frequently with existing workers. Be certain only a properly trained and physically able person will use the machinery. A person who hasn't read and understood all using and safety instructions is not qualified to use the machine. An untrained operator exposes himself and bystanders to possible serious injury or death. If the elderly are assisting with the work, their physical limitations need to be recognized and accommodated.

3. SAFETY DECALS

- Keep safety decals clean and legible at all times.
- Replace safety decals that are missing, damaged, painted-over or illegible.
- Replaced parts that displayed a safety decal should also display the current sign.
- Safety decals are available from your authorized Distributor or Dealer or the Factory.
- **How to install safety Decals:**
 - Installation area must be clean and dry.
 - Determine exact position before you remove the backing paper.
 - Align the decal over the specified Area and press decal to surface.
 - Small air pockets can be pierced with a pin.

• Safety Decals Location onto the Backhoe:



Backhoe model:
ex: **OP04**

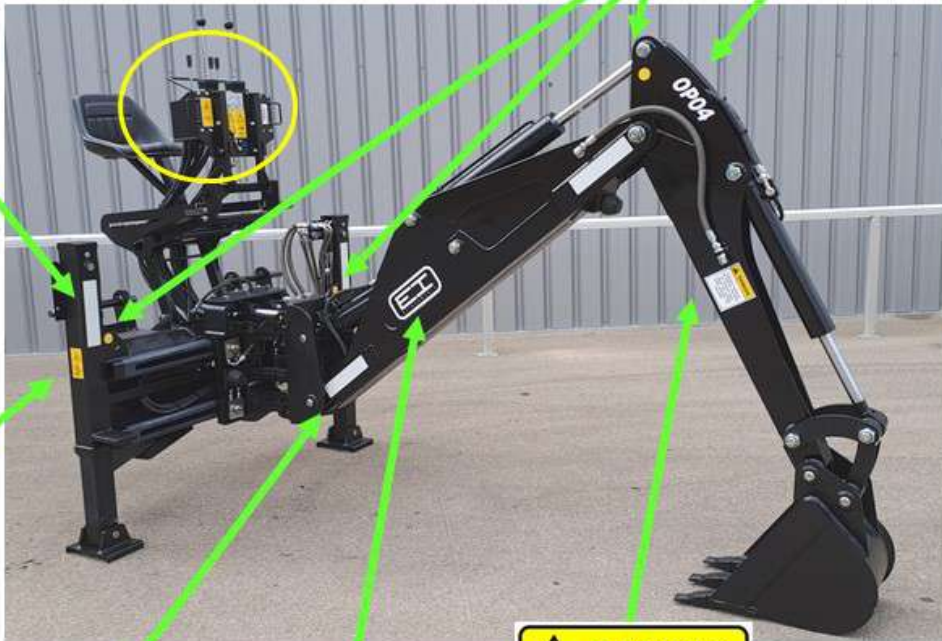


In both
sides

Reflectant

In both
sides

In both
sides



Reflectant

In both
sides



In both
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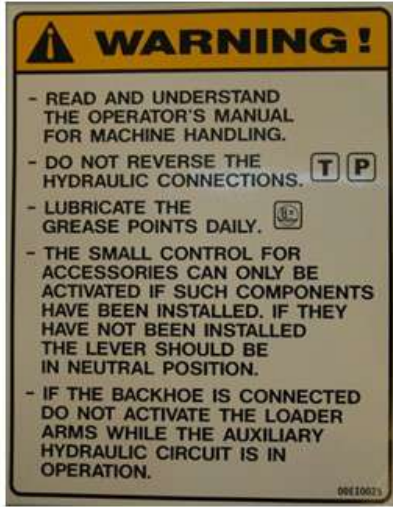
In both
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DECAL PART NUMBERS TO ORDER:



00E10250



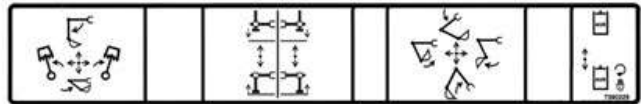
00E10025



00E10002

Reflectant

00E10005



00E1-7390229



00E10241



00E10242



00E10067

OP04

00E10244



00E10075



00E10110



00E10116



00E10115



4. OPERATION

WARNING:



Never allow to operate the backhoe until it have been carefully reviewed and operator have understood this owner manual.

THIS MANUAL MUST BE READ, UNDERSTOOD AND MUST BE FOLLOWED ESTRICLY BY THE OPERATOR.

- Befote starting using the backhoe read and understand the whole manual. First of all, read also the manual of the machine to which the attachment is connected. An unqualified operator can cause serious accidents, injuries or death to him or to other people.
- Operator must locate, read and understand the Safety Decals joined to the backhoe, in order to understand the safety risks when the operator uses the backhoe.
- Also, the operator must read and understand the operator's manual of the machine where the backhoe will be attached before using it.
- If further information is needed, contact to your nearer dealer or distribution/service point.

Incorrect operating of this attachment can cause injuries or death.

Before operating the attachment follow the next steps:

- 1.- Read the operating manual.
- 2.- Read all the safety indications that are on the attachment.
- 3.- Make sure there is nobody standing in the operating area of the machine and attachment.

Before operating the attachment on the operation site, learn to handle it in safe way on a clear area.

Fulfilling the relevant dispositions and laws is of your responsibility, as well as following the manufacturer instructions about operation and maintenance of this attachment.

Contact your agent it you need more operating manuals/QR code to download them.



4.1. WHAT A NEW OPERATOR OR OWNER MUST KNOW:

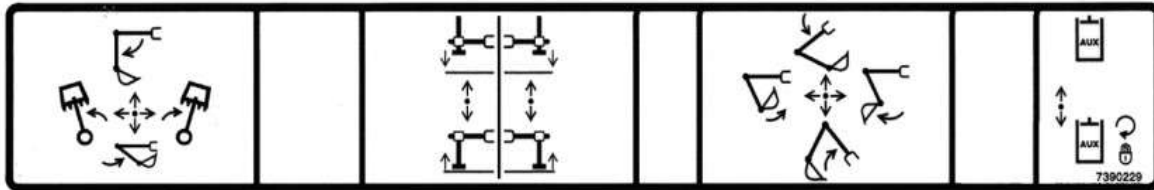
GENERAL OPERATING INFORMATION

OPERATOR ORIENTATION – The directions left, right, front and rear as mentioned throughout this manual, are determined when sitting in the operator’s seat and facing toward the boom.

Your Backhoe is operated by five different control levers. Two are used for stabilizers operation, the other two for swing, boom, dipper and bucket functions operation. One more is used for an auxiliary hydraulic line to attach a hammer, finger or other attachments that needs hydraulic supply. Read the safety precautions of this manual before attempting to use the backhoe. Remember, right and left when referred to on this page are determined by the operator’s position seated at the backhoe controls facing the bucket.



The information contained below will help to the operator or Owner to become familiar with the operation :

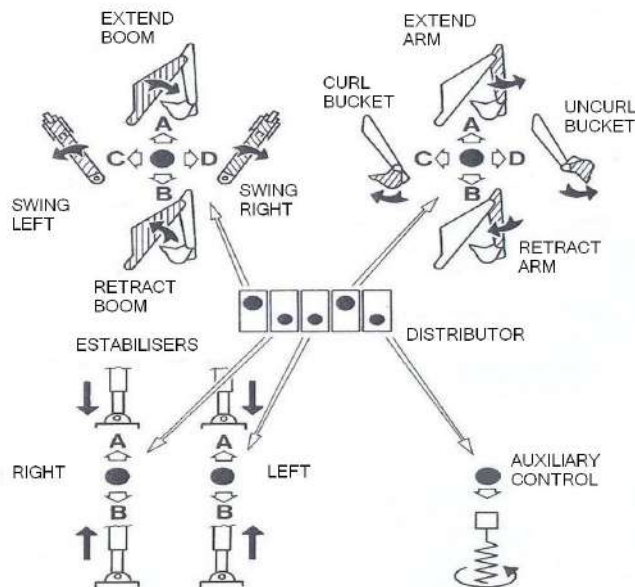


BOOM /SWING CONTROL LEVER

LEFT / RIGHT STABILIZER

DIPPER / BUCKET CONTROL LEVER

EXTRA SERVICE LINE CONTROL LEVER





4.1.1. BACKHOE STABILIZER LEVERS

- Moving the stabilizer lever (left or right) "FORWARD", it will bring the backhoe stabilizer "DOWN".
- Moving the stabilizer lever (left or right) "REARWARD", it will bring the backhoe stabilizer "UP".

Both stabilizers are required to TO BE DOWN for proper stability of the backhoe when in operation.

4.1.2. BOOM/SWING LEVER (LEFT HAND LEVER)


- Pushing de boom/swing lever "FORWARD" will "LOWER" the boom dipstick and bucket, Pulling the lever "REARWARD" will "LIFT" the boom dipstick and bucket.
- Pushing de boom/swing lever to the "LEFT" will swing the boom and bucket to the "LEFT". Pushing the lever to the "RIGHR" will swing the boom and bucket to the "RIGHT".

4.1.3. DIPPED BUCKET LEVER (RIGHT HAND LEVER)

- Pushing the dipper/bucket lever "FORWARD" will move the dipper "OUT" or away from the operator. Pulling the dipper/bucket lever "REARWARD" will move (crowd) the dipper "IN" or "TOWARD" the operator.
- Pushing the dipper/bucket lever to the "LEFT" will "fill" OR CURL THE BUCKET (move INWARD) . Pushing the lever to the "RIGHT" will "Dump" the bucket (move OUTWARD).

When operating the backhoe, smoothness of technique should be strived for at all times. Smoothness will come with experience and practice at feathering the controls. Establish a flowing digging cycle to increase operator efficiency and save unnecessary wear on the machine.

Observe the following points to obtain the best results and to fully utilize the digging force of the backhoe.

<p>WARNING:</p> 	<p>Operate the backhoe only when seated at the controls. Any other method could result in serious personal injuries or death.</p> <p>Never attempt to drive the SSL/Tractor when seated at the backhoe controls.</p> <p>Check the prospective digging area for hidden utility lines before operating the backhoe or when in doubt of their location, contact the local utility companies.</p> <p>When operating the backhoe down and proceed with caution. If you feel the backhoe bucket made contact with anything out of the ordinary, stop digging at once. If a utility line has benn damaged, contact the utility at once.</p>
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REMEMBER

1. Move slowly !
2. Always use care and common sense !
3. Be careful for your own sake and for that of others !
4. Euroimplementos (EI attachments) includes all reasonable means for accident prevention except a safe and careful operator.



4.2. PRE-OPERATION : BEFORE YOU START DIGGING:

The operator should inspect the job site before any excavating is started and take notice of any potential hazards in the area. He should have a complete understanding of the tasks he is expected to perform.

Once you have become familiar with the job site and understand the job requirements, it is time to set up for the actual digging.

Be sure the Backhoe is in perfect conditions to develop job required.

Be sure the Operator is in good training and health conditions to develop job required.

4.3. OPERATION INSTRUCTIONS: FIELD OPERATION:

1. Movement of Backhoe: Right/Left boom position.

The backhoe may be moved sideways to the left or to the right of the excavator. To do so, follow the instructions:

1. Disconnect the backhoe mounting system on the chasis.

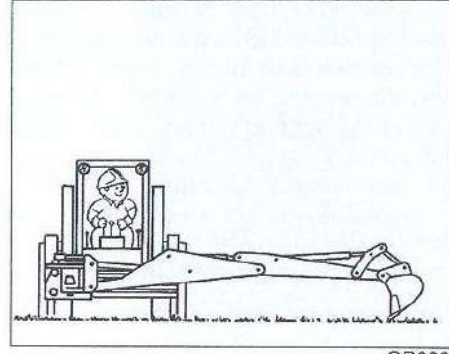
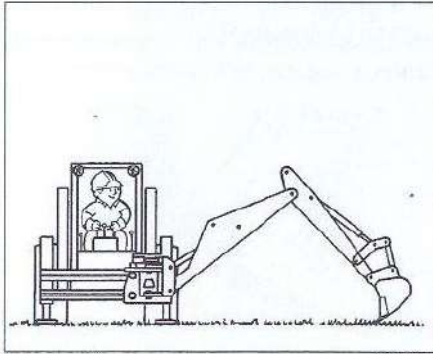
NOTE: This may be done hydraulically or mechanically.



2. Sitting in the operator's seat, with your seat-belt fastened, apply the handbrake, and turn on the engine.
3. Lower the stabilizers until they are resting on the ground. Swing the backhoe 90° to your left.
4. When the backhoe is in the required position, release the controls and stop the engine.



5. Connect the hydraulic or mechanical backhoe mounting system on the chassis.
6. Lightly break the soil with the bucket and operate the controls of the boom and arm to swing the backhoe to the left of the excavator. Position it as shown in the diagram.
7. Repeat the procedures to swing the backhoe to the centre or to the opposite side of the excavator.



2. Digging Operation

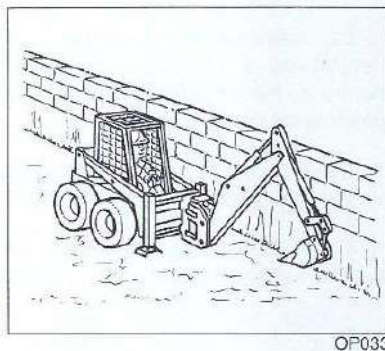
WARNING !



The excavator should be stable and level at all times during excavation. Stabilizers should always be used when working with the backhoe. Never excavate beneath the stabilizers. Never allow anyone into the immediate area in which the excavator is working. Never swing the bucket over anyone's head.

To correctly position to the backhoe before beginning work:

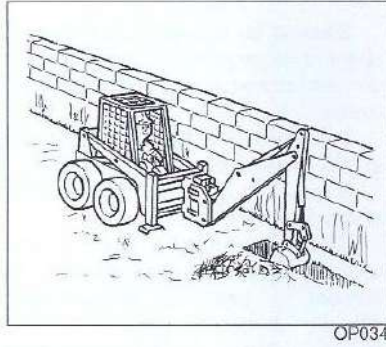
- In excavation is to take place alongside a structure,



- Position the backhoe on the appropriate side of its chassis.
- Lower the stabilizers to the ground.
- Position the excavator and backhoe ready for work and begin digging.



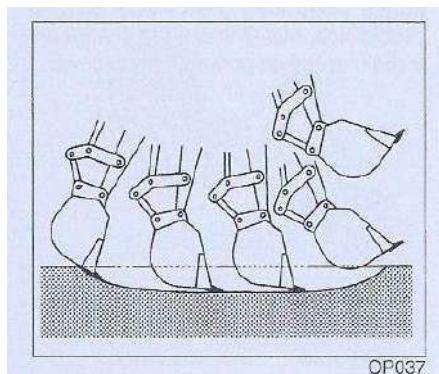
- When excavation is not alongside structures,



- The backhoe may be placed in the centre, to the left, to the right or in another other position relative to the excavator.
- Lower the stabilizers.
- Position the excavator and backhoe ready for work and begin digging.

3. Excavation using Boom

Use this method when the soil is unbroken.

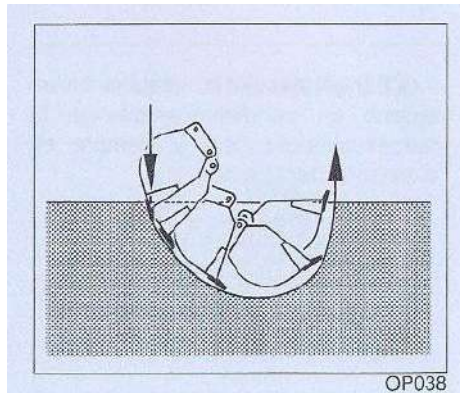


- Place the bucket at approximately at the same angle as shown in the diagram. Position the arm in the vertical position so that the bucket cuts about 50 cm into the ground.
- With the boom position set as a result, move only the arm to fill the bucket.
NOTE: The bucket should be positioned in such a way only the teeth are in contact with the bottom of the trench.
- Continue excavating using the same procedure removing 75-150 mm each time. If the arm does not move, curl the bucket or raise the boom slightly, and continue digging.



4. Excavation using Bucket

Use this method when a vertical wall is required at one end of the trench.

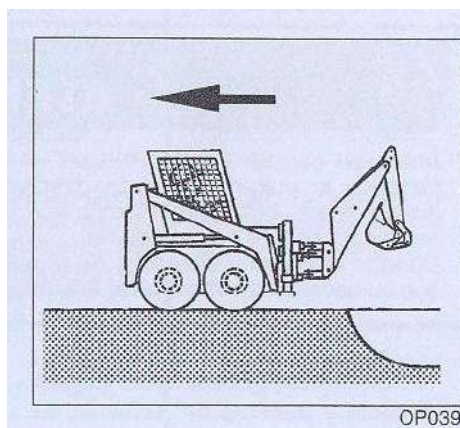


- Position the bucket in such a way that the teeth are almost vertical.
- Use the boom to exert pressure on the bucket, pushing it against the ground.
- Use the boom to dig the bucket into the soil while at the same time filling the bucket with soil.

5. Repositioning Excavator

When the required length has been reached, reposition the excavator as follows:

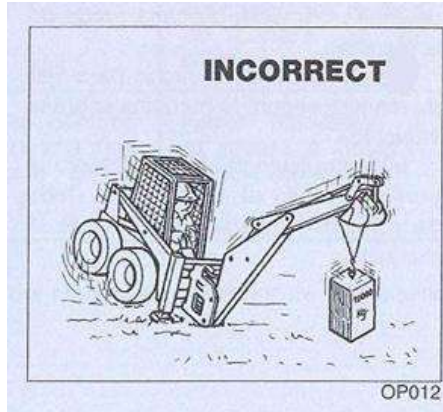
- Raise the arm and bucket above the ground.
- Retract the arm to the centre of the machine.
- Lift the stabilizers off the ground.
- Turn the engine on to "idle".
- Drive the excavator backwards in as straight a line as possible relative to the trench. Do not go too far back, because this could cause the depth of the trench to vary.
- Lower the stabilizers onto the ground.
- Repeat the working procedures described above.





6. Raising and Lowering Objects

Only it is possible to use the backhoe for lifting and moving objects if it is used the authorized attachment (tumb, grapples,etc) and it is possible to use auger for working different to dig operation. When the backhoe is used to do that, make sure the weight of the objects does not exceed the maximum load permitted for the attachment.



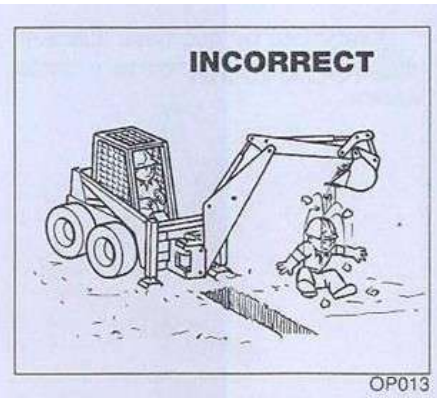
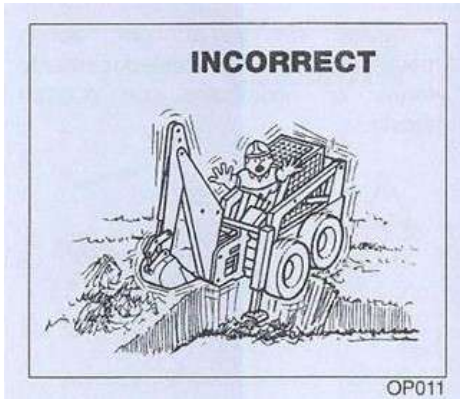
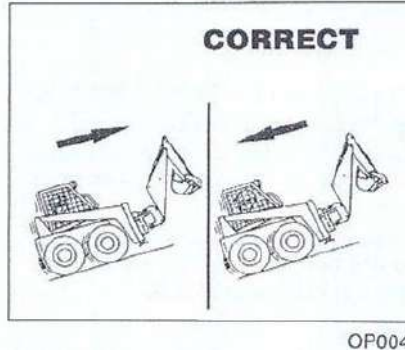
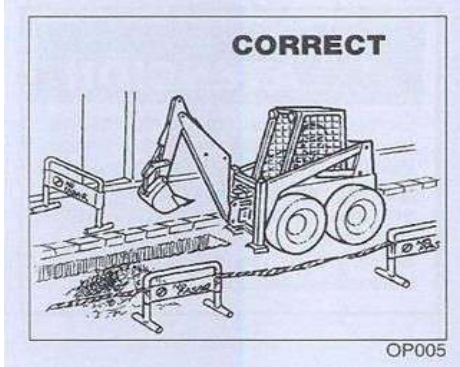
ATTENTION !

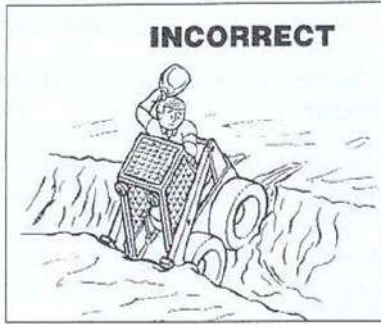


If you lift a very long object using the backhoe, lift it close to the excavator and as close to the ground as possible to prevent the machine front tilting. Always lower the object to the ground before leaving the machine.

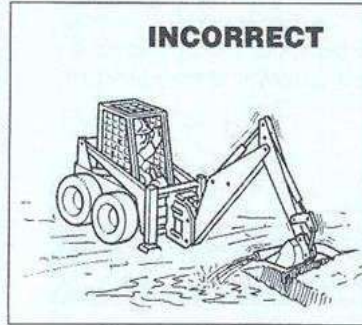


COMPILATION OF CORRECT / INCORRECT USE OF BACKHOE:

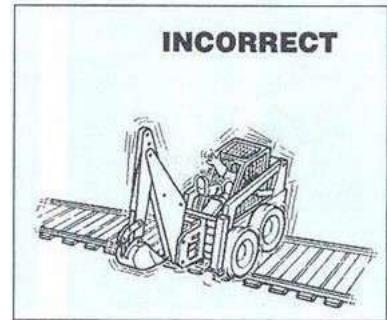




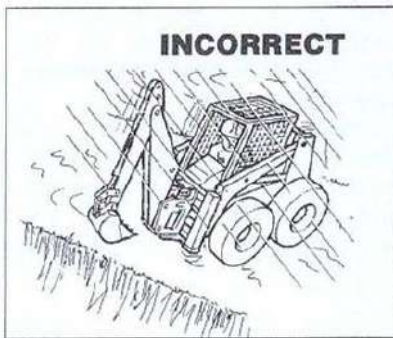
OP010



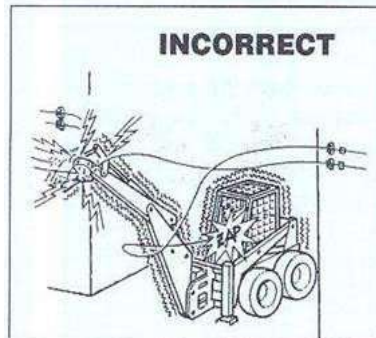
OP009



OP006



OP036



OP008

4.4. TRANSPORTING:

- Preparing the backhoe for transporting between work sites:

- 1.- Before transporting the backhoe, raise the boom, dipper, and bucket to transporting position. Turn the turn body to 90°, close to the backhoe frame.
- 2.- Drive slowly with all the possible precautions.

ATTENTION !

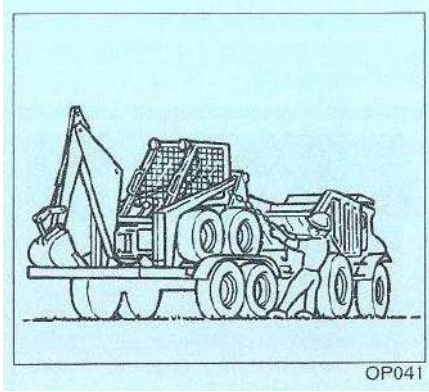
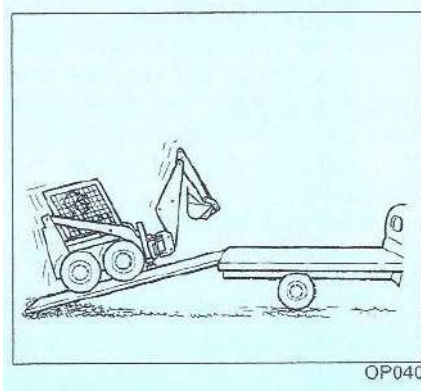


When transporting the SSL and Backhoe, before placing the machine in a lorry or trailer, check that there is no ice, oil or grease on the ramp or the surface on which the machine is going to travel. Check that the ramp is able to withstand the weight of the machinery.

Take care when loading and unloading the excavator that it doesn't tip sideways.

- Placing SSL and Backhoe on a lorry:

- 1.- Place blocks behind the front and back wheels of the vehicle transporting the excavator.
- 2.- Carefully drive the excavator forward and slowly position the machine on the trailer.
- 3.- Lower the bucket to the level of the floor of the vehicle, apply the handbrake, turn off the engine and remove the ignition key.
- 4.- Place blocks behind the front and back wheels of the excavator.
- 5.- Use chains or straps to secure the excavator on the vehicle.
- 6.- Check the distance from the ground to the top of the excavator to determine the total height of the machine.



CAUTION !



When transporting the Backhoe on a road or highway at night or during the day, use accessory lights and devices for adequate warning to the operators of the other vehicles. In this regard, check local government regulations.

Always drive slowly over uneven terrain to avoid tipping the backhoe.

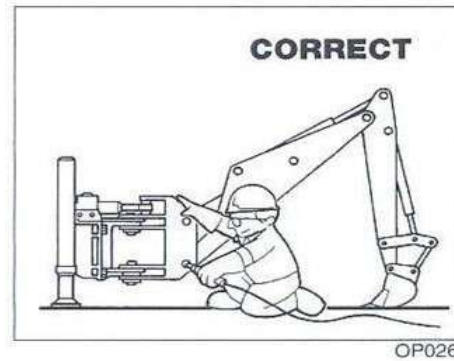
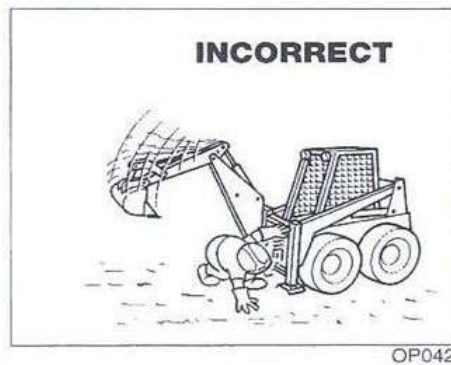


5. BACKHOE INSPECTION, SERVICE AND MAINTENANCE:

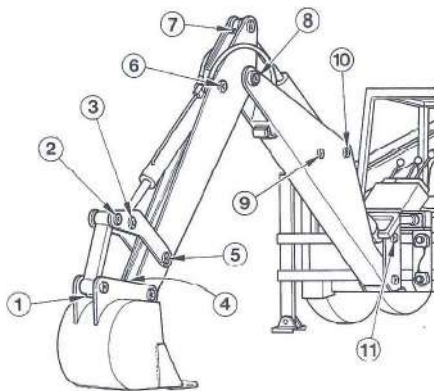
5.1. PREVENTIVE MAINTENANCE.

1. Before lubricating or servicing machinery, position the excavator on flat land, apply the hand-brake, lower the bucket until it is resting on the ground, turn off the engine and place blocks behind each of the front and back wheels.

Lower the bucket to the ground, shut off tractor engine, and relieve the pressure in the hydraulic system before adjusting, lubricating, or servicing the loader.

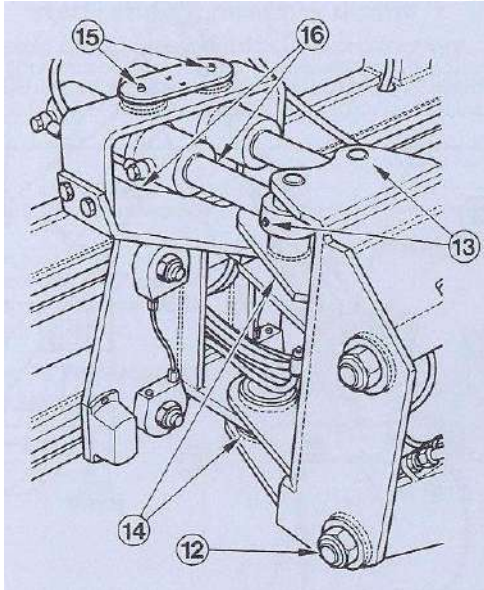


2. Inspect all pins and grease fittings before each use. Lubricate with heavy duty grease (top grade lubricating oil) as indicated in this manual. Lubrication must be carried out **every 8 hours**, as mentioned on decals joined near lubrication points onto backhoe. Apply sufficient grease to the grease fittings until visible in bolts, joints, pins, etc.



GREASE FITTINGS :


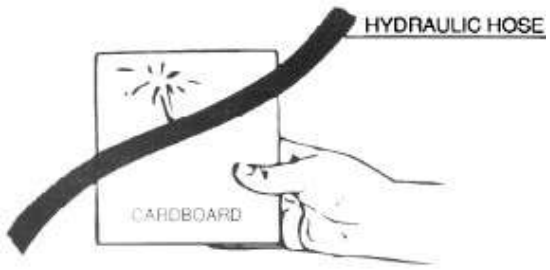
- 1- Bolt to Bucket.
- 2- Connect. Rod-joint bolt.
- 3- Bucket Cylinder bolt.
- 4- Bolt arm to bucket.
- 5- Bolt arm to connect rod-joint.
- 6- Bolt arm to bucket cylinder.
- 7- Bolt arm to arm cylinder.
- 8- Bolt boom to arm cylinder.
- 9- Bolt boom to boom cylinder.
- 10- Bolt boom to arm cylinder.
- 11- Bolt to cylinder boom to turn support.



12- Bolt to Boom to turn support..
13- Bolts to turn support to turn support cylinder.
14- Bolts to turn support to tilting support.
15- Upper bolts turn cylinders to turn support.
16- Lower bolts turn cylinders to turn support.

Grease type recommended is P70. Recommended OIL is SAE HM68.

3. Periodically check all bolts for looseness and re-torque if necessary, following torque specifications.
4. Before storage, be certain all hydraulic cylinders are fully collapsed so that the rod will not be exposed to the elements or damaged.
5. Be certain hydraulic system remains sealed at all times to prevent contamination.
6. Check and maintain an adequate fluid level in the tractor/excavator/SSL reservoir prior to use.
7. Inspect all hydraulic system hoses and fittings. Replace prior to further operation if damaged.

<p>WARNING !</p> 	<p>Escaping hydraulic oil under pressure can penetrate the skin. Never use body to check for hydraulic leaks. Use cardboards when checking for leaks.</p>  <p>Relieve hydraulic pressure before disconnecting any hydraulic line. Failure to heed may result in serious injury or death.</p>
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5.2. TROUBLESHOOTINGS:

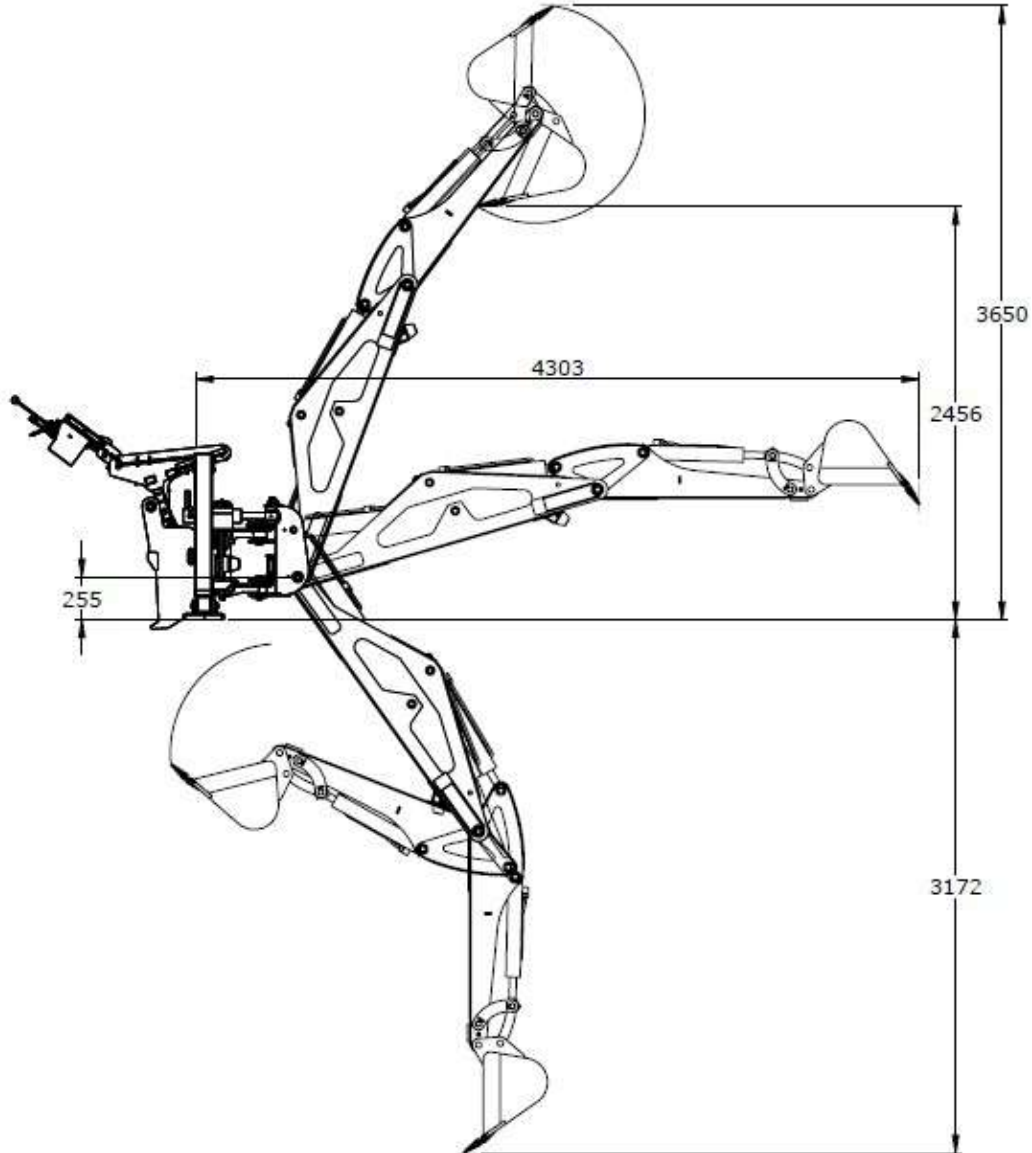
PROBLEM	CAUSE	CORRECTION
The hydraulic system does not work.	The auxiliary hydraulic control is not connected.	Place the auxiliary control in the correct connection position.
	The rapid plug-in mounting system is not correctly connected.	Cross over the connection lines.
	The hydraulic oil level is low.	** Add oil to the correct level.
The hydraulic system is not functioning correctly	The level of hydraulic oil is low.	** Add oil to the correct level.
	There is air in the hydraulic system.	Operate all cylinders several times (except for the one controlling backhoe displacement) in both directions and in as extended a position as possible. Maintain extended position several seconds before retracting.
Force of pressure not absorbed at full extension in displacement cylinders.	Air in the cylinder caused by a leak or faulty repair in the displacement cylinder.	Make the necessary repairs. Bleed the cylinders.

** See the Section on Specifications in the unloader's Operator's Manual relative to the use of the correct type of oil.

6. BACKHOE SPECIFICATIONS:

6.1. MECHANICAL SPECIFICATIONS

OP04 – IN/OUT UNIVERSAL BACKHOE DIMMENSIONS:



Main characteristics:

- WEIGHT: FROM 750 KG TO 830 KG.
(*) WEIGHT VARY IN ACCORDANCE WITH THE TYPE OF THE ATTACHMENT MOUNTING SYSTEM.
- THE FLOW ADMITED IS FROM 65 TO 95 LPM.
- MAXIMUM PRESSURE LIMITED TO 165 BAR.



ALL MODELS BUCKETS CHARACTERISTICS:

BUCKETS						
WIDTH mm	MODEL	OP00	OP02	OP03	OP3.2.	OP04
200	Standar	YES	YES	YES	NO	NO
250	Standar	YES	YES	YES	YES	YES
300	Standar	YES	YES	YES	YES	YES
350	Standar	YES	YES	YES	YES	YES
400	Standar	YES	YES	YES	YES	YES
500	Standar	NO	YES	YES	YES	YES
600	Standar	NO	YES	YES	YES	YES
800	Cleaning	NO	YES	YES	YES	YES
1000	Cleaning	NO	YES	YES	YES	YES



6.2. TORQUE SPECIFICATIONS

1. Tightening Bolts and Nuts

Check all loader bolts and nuts for tightness every 50 working hours. The movement of the loader over rough terrain may cause bolts to come under pressure and over a long period of time some slight stretching of the bolt may occur. The slack created may need to be taken up by tightening.

Use the following torques when special torques are not given. These values apply to fasteners as received from suppliers, dry, or when lubricated with normal engine oil. They don't apply if special graphited or moly disulphide greases or other extreme pressure lubricants are used. This applies to both UFN and UNC threads. Remember to always use grade five or better when replacing bolts.

Please refer below for recommended torque settings.

SAE Grade No.		2				5				8*			
Bolt head identification marks as per grade. NOTE: Manufacturing Marks will Vary													
Bolt Size		Pounds Feet		Newton-Meters		Pounds Feet		Newton-Meters		Pounds Feet		Newton-Meters	
Inches	Millimeters	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1/4	6.35	5	6	6.8	8.13	9	11	12.2	14.9	12	15	16.3	30.3
5/16	7.94	10	12	13.6	16.3	17	20.5	23.1	27.8	24	29	32.5	39.3
3/8	9.53	20	23	27.1	31.2	35	42	47.5	57.0	45	54	61.0	73.2
7/16	11.11	30	25	40.7	47.4	54	64	73.2	86.8	70	84	94.5	113.5
1/2	12.70	45	52	61.0	70.5	80	96	108.5	130.2	110	132	149.2	179.0
5/8	14.29	65	75	88.1	101.6	110	132	149.2	175.0	160	192	217.0	260.4
3/4	15.88	95	105	128.7	142.3	150	180	203.4	244.1	220	264	298.3	358.0
7/8	19.05	150	185	203.3	250.7	270	324	366.1	439.3	380	456	515.3	618.3
1	22.23	160	200	216.8	271.0	400	480	542.4	650.3	600	720	813.6	976.3
1-1/8	25.40	250	300	338.8	406.5	580	696	786.5	943.8	900	1080	1220.4	1464.5
1-1/2	28.58	-	-	-	-	800	880	1084.8	1193.3	1280	1440	1735.7	1952.6
1-3/8	31.75	-	-	-	-	1120	1240	1516.7	1681.4	1620	2000	2467.5	2712.0
1-3/4	34.93	-	-	-	-	1460	1680	1979.8	2278.1	2380	2720	3227.3	3688.3
1-7/8	38.10	-	-	-	-	1940	2200	2630.6	2983.2	3160	3560	4285.0	4827.4

* Thick Nuts must be used with Grade 8 bolts

METRIC BOLT TORQUE SPECIFICATIONS

Size of Screw	Grade No.	Coarse Thread			Fine Thread		
		Pitch (mm)	Pounds Feet	Newton-Meters	Pitch (mm)	Pounds Feet	Newton-Meters
M6	5.6	1.0	3.6-5.8	4.9-7.9	-	-	-
	8.8		5.8-9.4	7.9-12.7		-	-
	10.9		7.2-10	9.8-13.6		-	-
M8	5.6	1.25	7.2-14	9.8-15	1.0	12-17	16.3-23
	8.8		17-22	23-29.8		19-27	25.7-36.6
	10.9		20-26	27.1-35.2		22-31	29.8-42
M10	5.6	1.5	20-25	27.1-33.9	1.25	20-29	27.1-39.3
	8.8		34-40	46.1-64.2		35-47	47.4-63.7
	10.9		38-46	51.5-62.3		40-52	54.2-70.5
M12	5.6	1.75	28-34	37.5-46.1	1.25	31-41	42-55.6
	8.8		51-59	69.1-79.9		56-68	75.9-92.1
	10.9		57-66	77.2-89.4		62-75	84-101.6
M14	5.6	2.0	49-56	66.4-75.9	1.5	52-64	70.5-96.7
	8.8		81-93	109.8-126		90-106	122-143.6
	10.9		96-109	130.1-147.7		107-124	145-168
M16	5.6	2.0	67-77	90.8-104.3	1.5	69-83	93.5-112.5
	8.8		116-130	157.2-176.2		120-138	162.6-187
	10.9		129-145	174.8-196.5		140-158	189.7-214.1
M18	5.6	2.0	88-100	119.2-136	1.5	100-117	136-158.5
	8.8		150-168	203.3-227.6		177-199	239.8-269.6
	10.9		175-194	237.1-262.9		202-231	273.7-313
M20	5.6	2.5	108-130	146.3-176.2	1.5	132-150	178.9-203.3
	8.8		186-205	252-277.8		206-242	279.1-327.9
	10.9		213-249	288.6-337.4		246-289	333.3-391.6

CAUTION !



DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only and include a +/- 10% variance. Check tightness of fasteners periodically. **DO NOT** use air powered wrenches. Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.



2. Hydraulic Fitting Torque.

TORQUE SPECIFICATION CHART

Use the following torque values when tightening the nuts on the cylinder rod threads.

Thread Diameter	POUNDS - FEET	
	Minimum	Maximum
7/8 "	150	200
* 1 "	230	325
1-1/8 "	350	480
1-1/4 "	490	670
1-3/8 "	670	900

* 1" Thread Diameter WITH 1.25" Rod Diameter Min. 230 ft. lbs. Max. 250 ft. lbs.



7. IN/OUT ADJUSTMENT PROCEDURE:

The EI Attachments OP04 retro can be operated in 2 ways:

- 1) From inside the cabin of the SSL/CTL.
- 2) From outside the SSL/CTL cabin using an external seat.

To be used in one position or the other, it is necessary to make a few adjustments that take no more than 10 minutes.

7.0. INTRODUCTION :

- **VERY IMPORTANT**

USING BACKHOE WITH OUT CABIN OPERATED SYSTEM OR IN/OUT SYSTEM WITH OUTSIDE OPERATION SEAT, WHICH ARE BOTH OPERATED OUTSIDE FROM SKID STEER LOADER CAN ONLY BE USED IN COUNTRIES WHERE ITS LEGISLATION ALLOWS TO WORK OUTSIDE THE CAB.

- **TO OPERATE THE BACKHOE OUT FROM DE SSL WHEN OUTSIDE SEAT IS USED:**

When you buy a backhoe with outside operation seat, you must extreme caution in using and preparation before starting to work:

- Make sure the skid steer loader and backhoe are both properly coupled by the elements designed for this purpose.
 - Pins of the SSL for locking the bucket to the bucket coupler into the holes of the backhoe coupler.
 - Backhoe coupling arms in pins from ssl,...
- Make sure skid steer is perfectly braked.
- Backhoe stabilizers must be positioned on the ground in a flat and firm area.

When you are working with backhoe, never dig under your position or you could take the risk having a serious accident.

- **ATTENTION**

- NEVER USE BACKHOE WITH OUT CABIN OPERATED SYSTEM IF YOU HAVE AND OLD SKID STEER LOADER AND IT HAS BRAKING PROBLEMS. IN THIS CASE YOU WILL BE EXPOSED TO ACCIDENTS OR EVEN DEATH.
- IT IS COMPLETELY FORBIDDEN OPERATE ANY SKID STEER LOADER FUNCTION FROM BACKHOE OUTSIDE SEAT. YOU MUST OPERATE THE SKID STEER LOADER ONLY FROM SSL CAB.
- IT IS COMPLETELY FORBIDDEN WORK WITH BACKHOE IN AREAS WHERE IT CAN CAUSE OVERTURNING OF BACKHOE OR SSL AND ANY ACTION WITH BACKHOE WHICH MAY CAUSE OVERTURNIG OF SSL AND BACKOE.



7.1. CHANGE IN TO OUT OPERATING POSITION PROCEDURE:



1

STARTING FROM THE POSITION
IN THE OUT CABIN



2

REMOVE THE SEAT:

- REMOVE PIN FROM BOLT.
- REMOVE THE BOLT FROM THE BRACKET.
- REMOVE THE SEAT FROM ITS BRACKET.



3

REMOVE THE SEAT BRACKET WITH 2 HAND WRENCHES:

- REMOVE BOLT FROM THE SUPPORT.
- REMOVE THE SEAT FROM ITS SUPPORT.



4

REMOVE THE 2 FOOT SUPPORT BRACKETS:

- PULL OUT PINS X 2.
- REMOVE RIGHT AND LEFT FOOT SUPPORT.

5 REMOVE THE PIN FROM THE PINS WITH CHAIN ON EACH SIDE TO RELEASE THE VERTICAL POSITION OF THE DISTRIBUTOR HOLDER AND REMOVE THE 2 PINS.



6 LOOSEN THE HALF-THREAD SCREWS ON EACH SIDE WITHOUT REMOVING THEM COMPLETELY, ALLOWING CLEARANCE BETWEEN THEM AND THE SLIDE GUIDE:



7 TAKE THE DISTRIBUTOR HOLDER BY THE 2 SIDE HANDLES AND SLIDE IT ALONG THE SLIDING GUIDES: TO THE POSITION THAT IS NECESSARY FOR THE MODEL OF THE CARRIER MACHINE:



8 REPOSITION THE PINS WITH CHAIN IN THE VERTICAL POSITION OF THE DISTRIBUTOR HOLDER:





- 9 ONCE INSIDE THE SSL/CTL REMOVE THE CHAIN PIN FROM BOTH SIDES, REPOSITION THE TILTED DISTRIBUTOR HOLDER IN THE IN-CABIN OPERATING POSITION AND REPLACE THE CHAIN PIN AND PIN:



- 10 THE BACKHOE IS NOW READY TO WORK IN THE IN-CABIN POSITION:



To adjust the backhoe from the IN-CAB position to OUT-Cab position, carry out the operations in reverse sense from 10 to 1.



8. Adjusting the Backhoe to the SSL/CTL:

The Backhoe is called an UNIVERSAL BACKHOE. It is designed to be attached to different manufacturers and models of SSL and CTL. To do it possible, it is necessary to adjust the 3 points of adjustment on the backhoe frame:

1. HEIGHT ADJUSTMENT: SEAT SUPPORT HEIGHT HIGH,MID,LOW).
2. IN POSITION ADJUSTMENT: 3 ADJUSTMENT POSITIONS WHEN THE BACKHOE IS OPERATED IN IN-CAB (FROM INSIDE OF THE SSL/CTL).
3. DISTRIBUTOR POSITION: SOME MACHINES NEED ENLARGE THE LEVERS TO EASY ACCESS TO THE HANDS. (2 POSITIONS: SHORT AND LARGE).

Note:

This adjustments have been disegnid according to the host machine. Deppending on the operator's size it could be modified according his needs.

List of the SSL/CTL available:

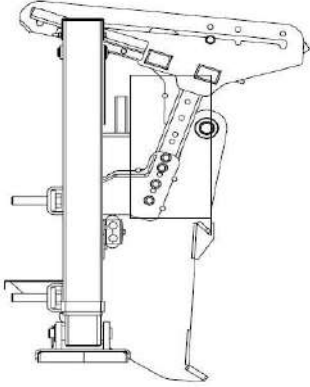
ADJUSTMENTS SUMMARY:

MACHINE	HEIGHT ADJUSTMENT			IN- POSITION			DISTRIBUTOR POSITION	
	HIGH	MID	LOW	1	2	3	SHORT	LONG
John Deere 325G		✓				✓		✓
John Deere 331G		✓				✓		✓
John Deere 333G		✓				✓		✓
Kubota SVL75		✓				✓		✓
Kubota SVL97		✓				✓	✓	
Takeuchi TL8		✓				✓	✓	
Takeuchi TL10	✓					✓	✓	
Takeuchi TL12	✓					✓	✓	
WN ST45		✓				✓		✓
WN SW32		✓				✓	✓	

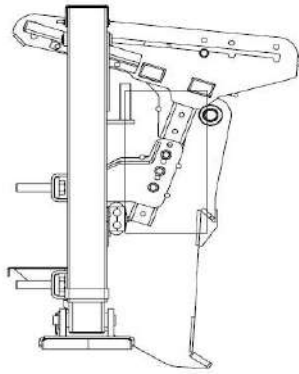
Details of the adjustments:

HEIGHT ADJUSTMENT

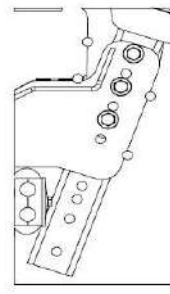
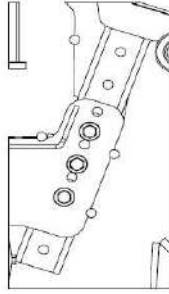
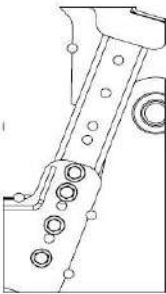
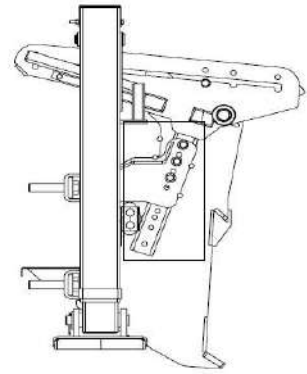
HIGH



MID

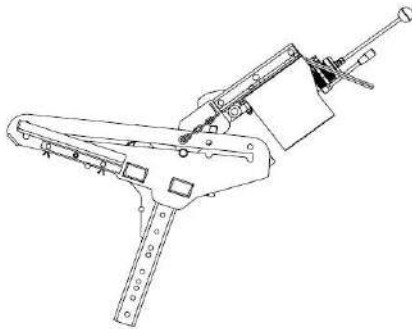


LOW

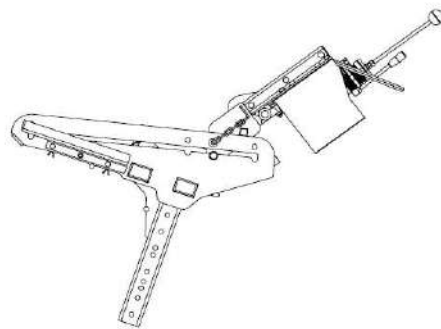


IN- POSITION

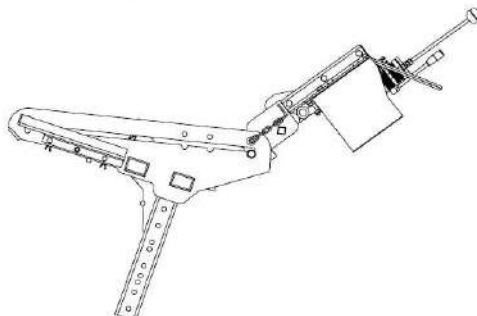
IN POSITION 1



IN POSITION 2



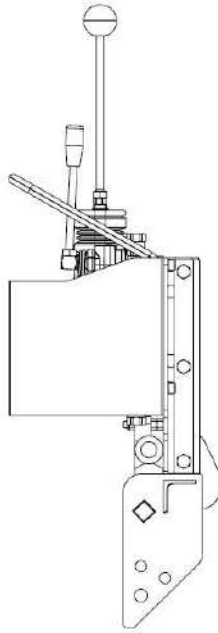
IN POSITION 3



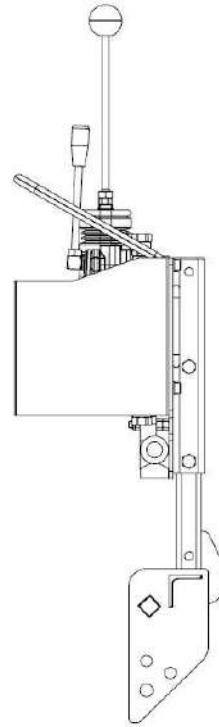


DISTRIBUTOR POSITION

DISTRIBUTOR POSITION: SHORT



DISTRIBUTOR POSITION: LONG





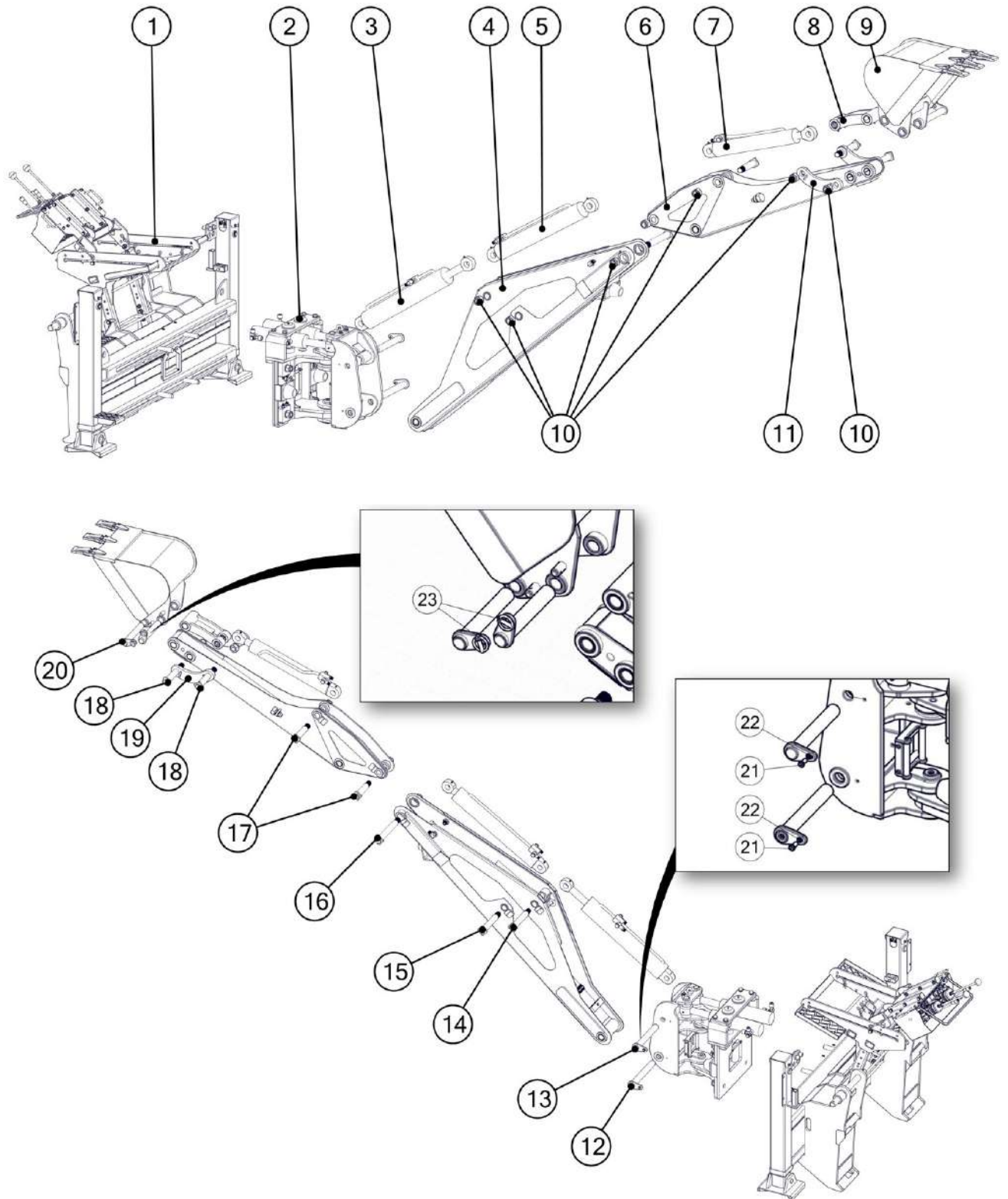
9. OP04 BACKHOE SPARE PARTS

MODEL: OP04

SERIAL N°:



9.1. OP04 BACKHOE GENERAL PARTS EXPLOSION:

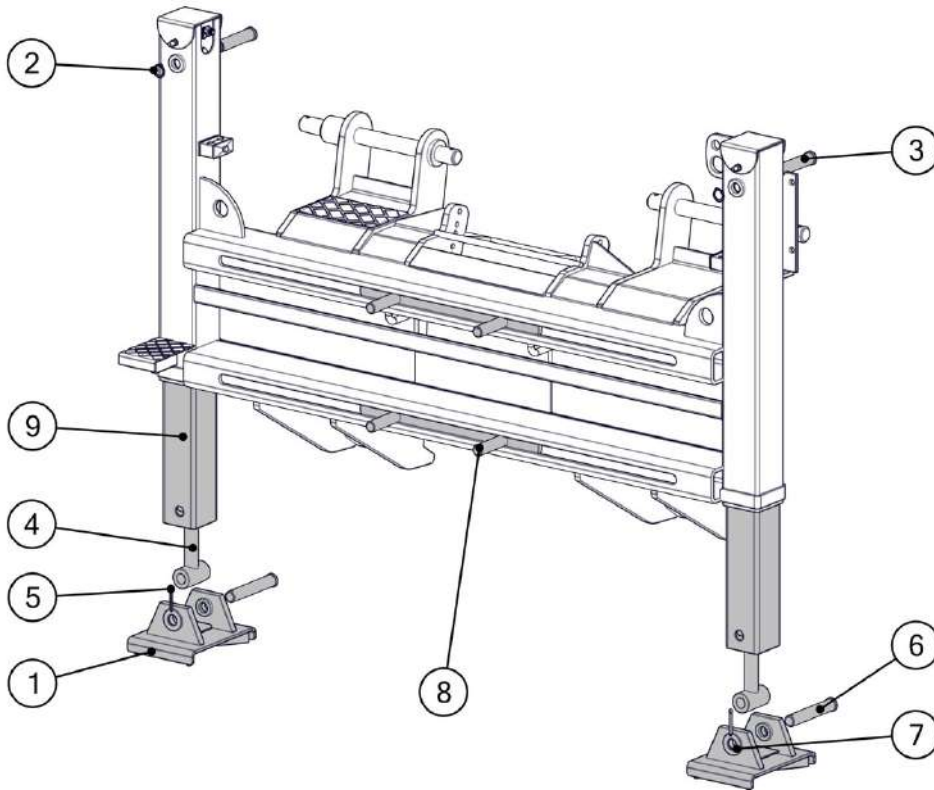




OP04 IN-OUT BACKHOE GENERAL PARTS EXPLOSION

N.	PART NUMBER	NAME	QTT.
1	20518C00	CHASSIS ASSEMBLY	1
2	ASSEMBLY	SWINGING-TILTING FLANGE	1
3	0333050	CYLINDER	1
4	ASSEMBLY	1st BOOM	1
5	0333001	CYLINDER	1
6	ASSEMBLY	2nd BOOM	1
7	1843001	CYLINDER	1
8	1850002	CONNECTING ROD	1
9	ASSEMBLY	BUCKET	1
10	M30D985T	NUT	6
11	1850006	PIVOT POINT UNIT	1
12	1121023	BOLT	1
13	3321001C	BOLT	1
14	3331012C	BOLT	1
15	3331010C	BOLT	1
16	3331011C	BOLT	1
17	3341003C	BOLT	2
18	3351001C	BOLT	2
19	1850007	PIVOT POINT UNIT	1
20	086100C	BOLT	2
21	M08X025E	SCREW	2
22	M08D127A	WASHER	2
23	PASANILL	PIN	2

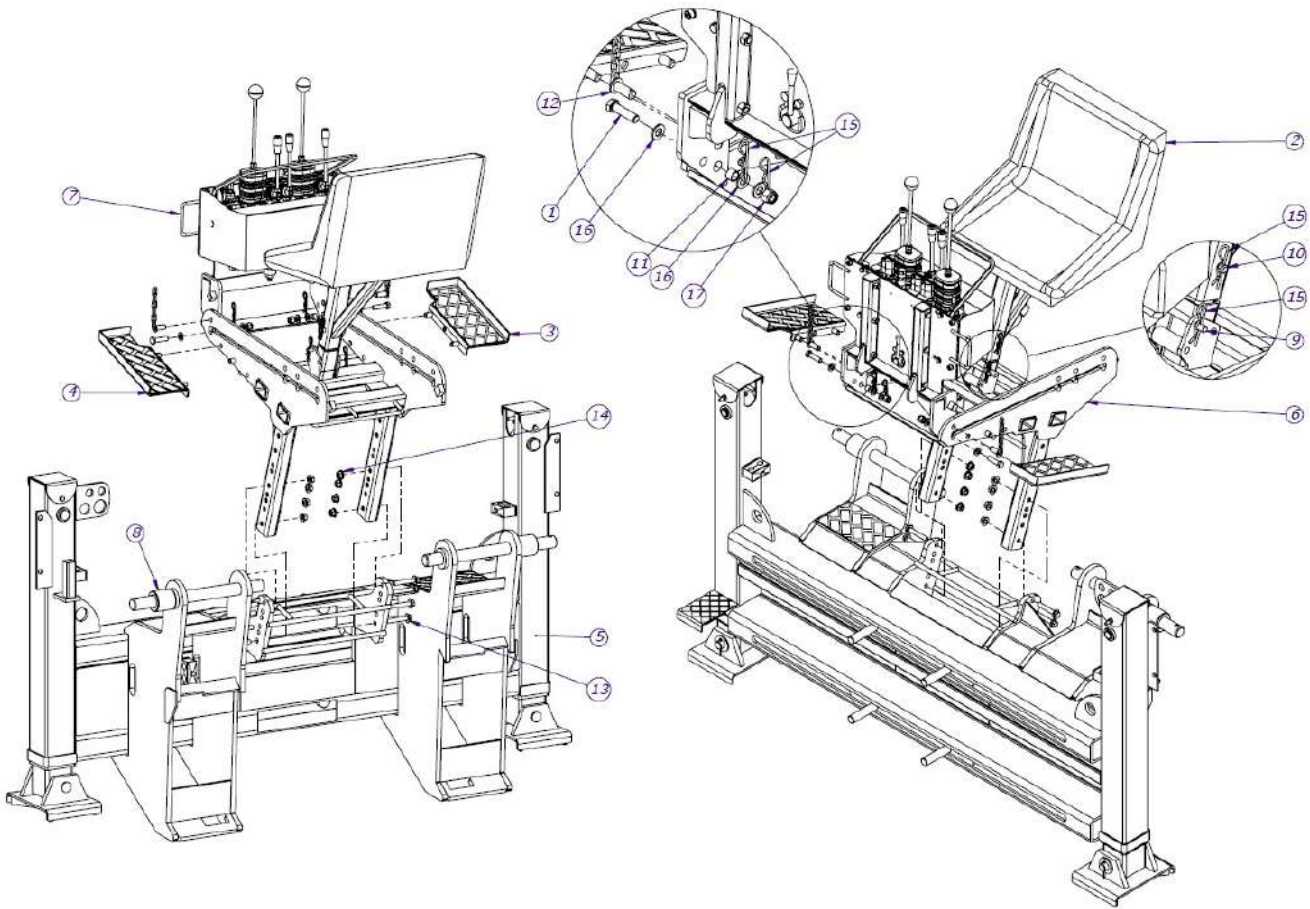
9.2. FRAME PARTS EXPLOSION :



FRAME PARTS EXPLOSION

N.	PART NUMBER	NAME	QTT.
1	0100010	BASE	2
2	SEEF35D471E	SEEGER	2
3	1101001	BOLT	2
4	1103001	CYLINDER	2
5	PASADOR 4X50	PIN	2
6	1101002	BOLT	2
7	M24D125A	WASHER	2
8	1100M02	STOP	2
9	0100008	MOBILE STABILIZER	2

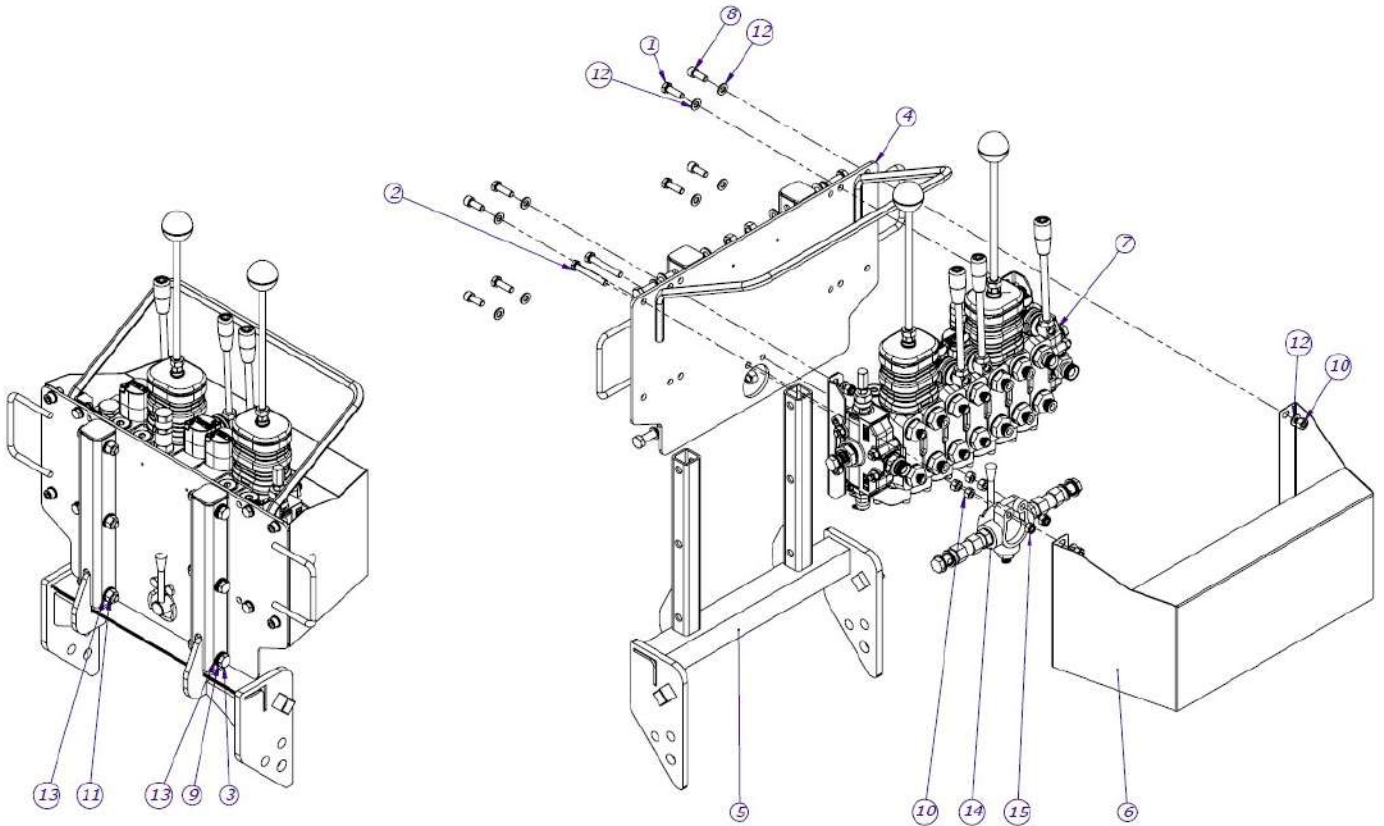
9.3. MAIN FRAME PARTS EXPLOSION



MAIN FRAME PARTS EXPLOSION

N.	PART NUMBER	NAME	QTT.
1	M12X045E	SCREW	2
2	20481C05	SEAT WIT SUPPORT	1
3	20481C09S	FOOT SUPPORT	1
4	20481C09	FOOT SUPPORT	1
5	20518C01		1
6	20518C03	IN&OUT ASSEMBLY	1
7	20518C05	DISTRIBUTOR SUPPORT	1
8	2026227.2	SLEEVE	2
9	2035712	BOLT	1
10	2035716	BOLT	1
11	2035726	SLEEVE	2
12	2035730	BOLT	2
13	M12X070E	SCREW	8
14	M12D6923T	NUT	8
15	RPASADOR	PIN	8
16	M12D125A	WASHER	6
17	M12D985T	NUT	2

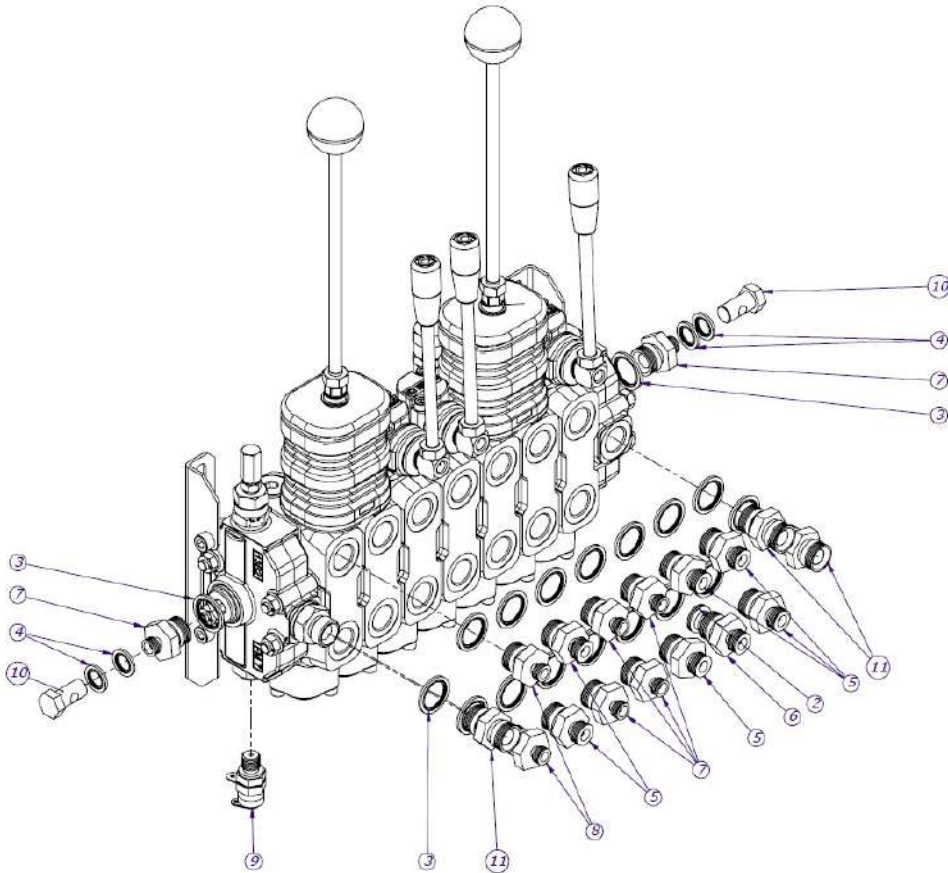
9.4. DISTRIBUTOR ASSY PARTS EXPLOSION:



DISTRIBUTOR VALVES ASSY PARTS EXPLOSION

N.	PART NUMBER	NAME	QTT.
1	M08X025E	SCREW	4
2	M08X055E	SCREW	2
3	M10X060E	SCREW	6
4	20518C06	UPPER DISTRIBUTOR SUPPORT ASSEMBLY	1
5	20518C07	LOWER DISTRIBUTOR SUPPORT ASSEMBLY	1
6	20518P46	COVER	1
7	0175001V27	DISTRIBUTOR	1
8	M08X020E	SCREW	4
9	M10D127A	WASHER	6
10	M08D934T	NUT	8
11	M10D934T	NUT	6
12	M08D125A	WASHER	16
13	M10D125A	WASHER	12
14	0173002	3 WAY VALVE	1
15	M08D985T	NUT	6

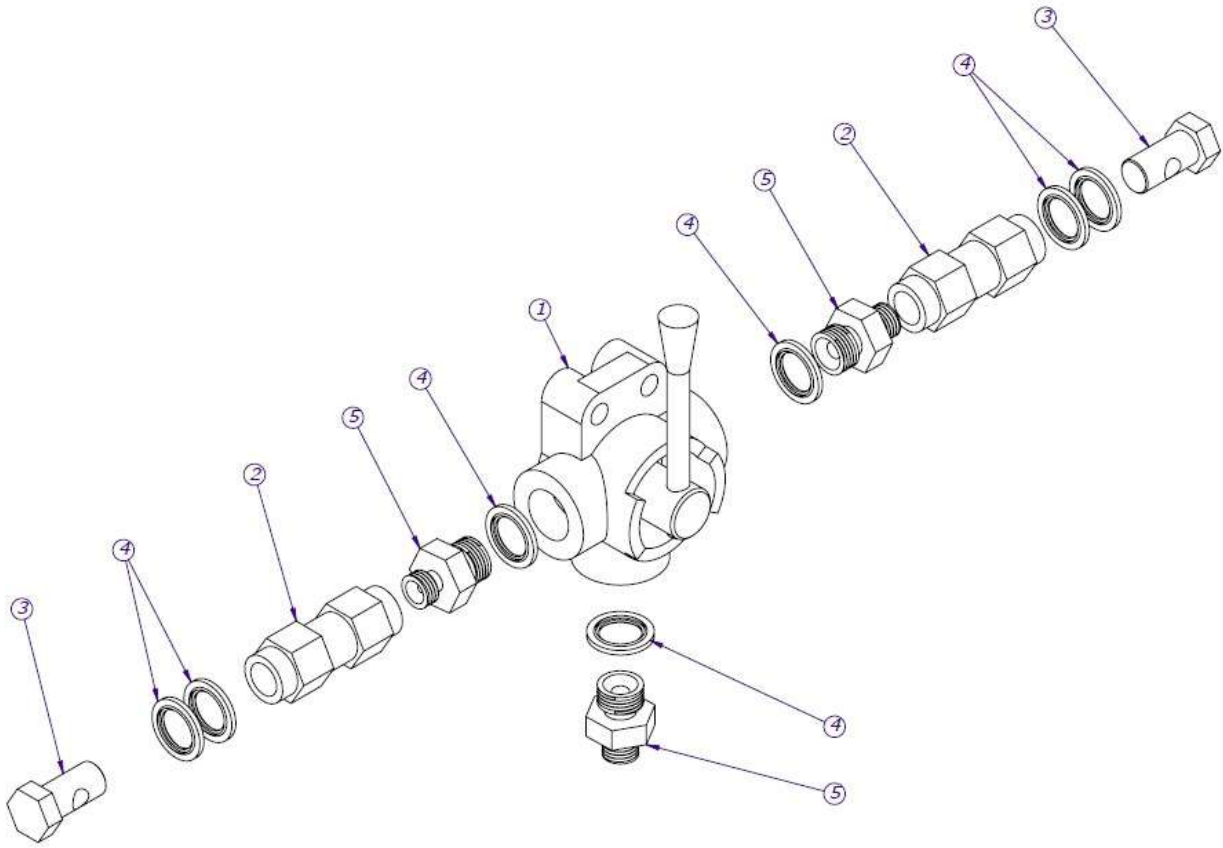
9.5 FITTINGS IN DISTRIBUTOR BODY:



DISTRIBUTOR VALVES ASSY PARTS EXPLOSION

N.	PART NUMBER	NAME	QTT.
1	M08X025E	SCREW	4
2	M08X055E	SCREW	2
3	M10X060E	SCREW	6
4	20518C06	UPPER DISTRIBUTOR SUPPORT ASSEMBLY	1
5	20518C07	LOWER DISTRIBUTOR SUPPORT ASSEMBLY	1
6	20518P46	COVER	1
7	0175001V27	DISTRIBUTOR	1
8	M08X020E	SCREW	4
9	M10D127A	WASHER	6
10	M08D934T	NUT	8
11	M10D934T	NUT	6
12	M08D125A	WASHER	16
13	M10D125A	WASHER	12
14	0173002	3 WAY VALVE	1
15	M08D985T	NUT	6

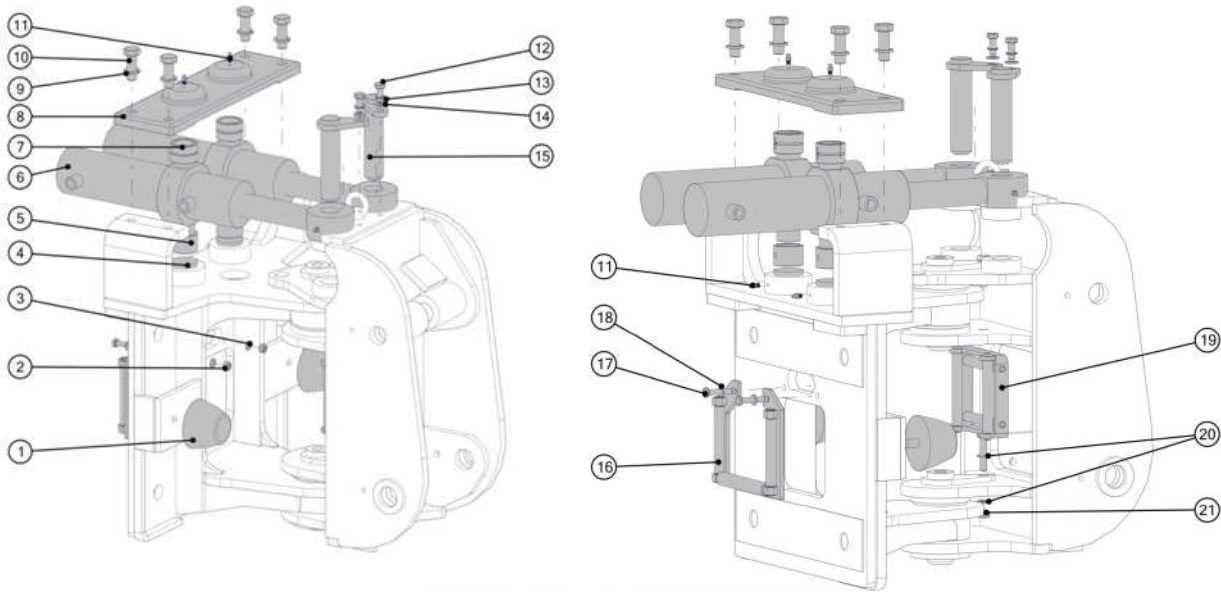
9.6. 3 WAYS VALVE FOR BLOCKING CYLINDERS/SIDE SHIFT:



3 WAYS VALVE PARTS EXPLOSION-BLOCKING CYL.

N.	PART NUMBER	NAME	QTT.
1	0173002	3 WAY VALVE	1
2	0173003	NO RETURN	2
3	3005004	HOLLOW SCREW	2
4	30470006	METAL JOINT	7
5	30190604	REDUCER	3

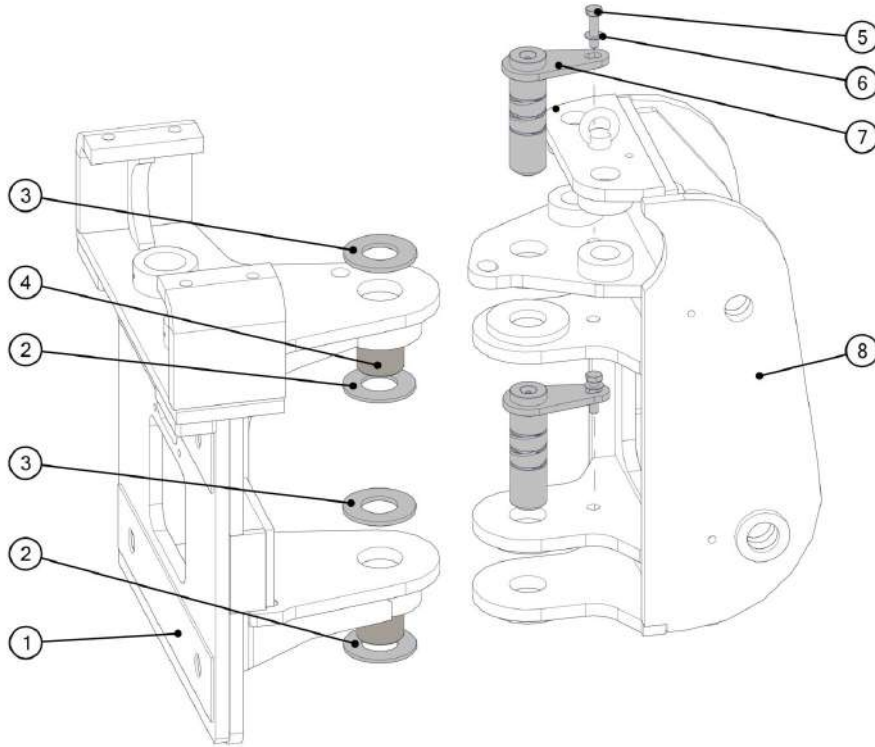
9.7. SIDE SHIFT ASSEMBLY: SWINGING- TILTING FLANGE.



SWINGING-TILTING FLANGE

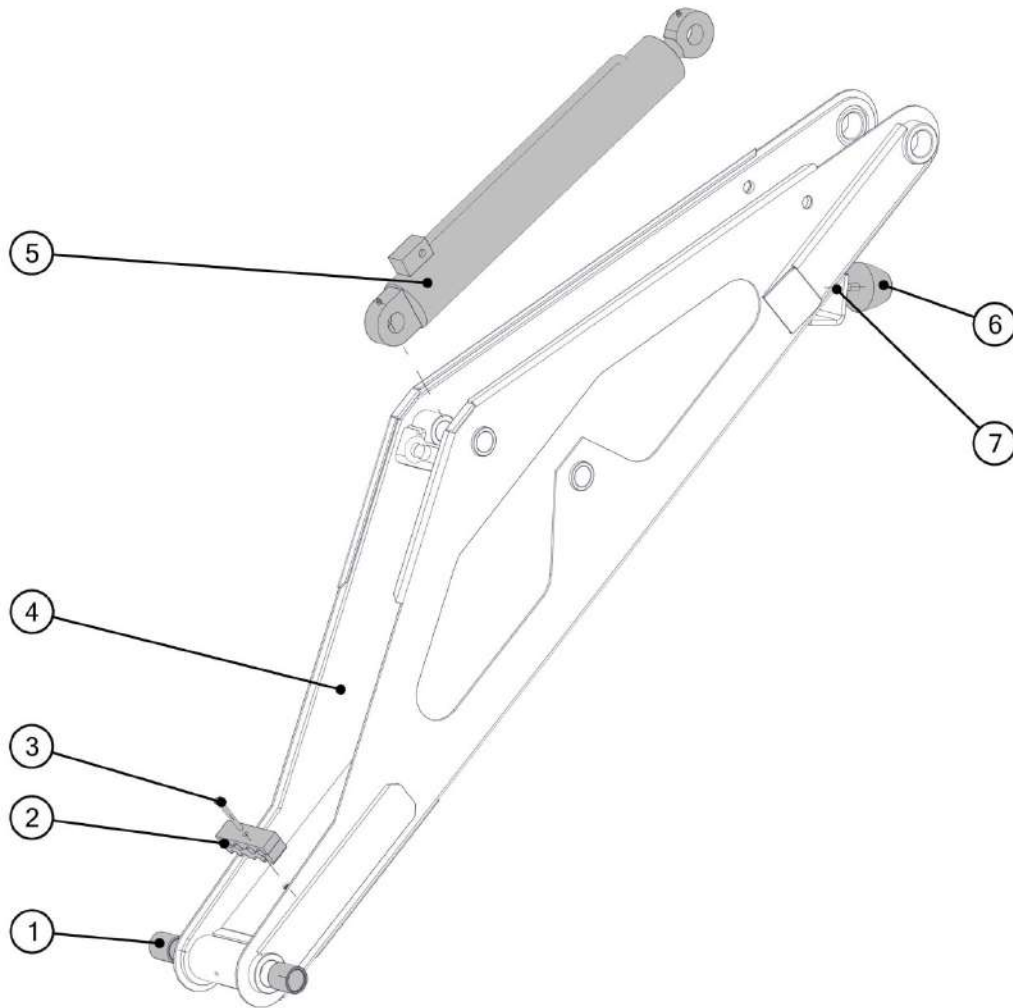
N.	PART NUMBER	NAME	QTT.
1	0119012	STOP	2
2	M8D985T	NUT	2
3	M8D125A	WASHER	2
4	0110036	DISC	2
5	0111008	SLEEVE	2
6	0113055	TILT CYLINDER	2
7	0111006	SLEEVE	2
8	1110006	PLATE TAPE	1
9	M16D127G	GROWER WASHER	4
10	M16X045E	SCREW	4
11	MT50306100	LUBRICATOR	4
12	M10X025E	SCREW	2
13	M10D127G	GROWER WASHER	2
14	M10D125A	WASHER	2
15	1121012	BOLT	2
16	0210013	RUB TUBE	1
17	M08X040E	SCREW	2
18	M8D125A	WASHER	2
19	0220013	RUB TUBE	1
20	M10D125A	WASHER	2
21	M10D985T	NUT	1

9.8. TILTING FLANGE WITH SWINGING ASSEMBLING:



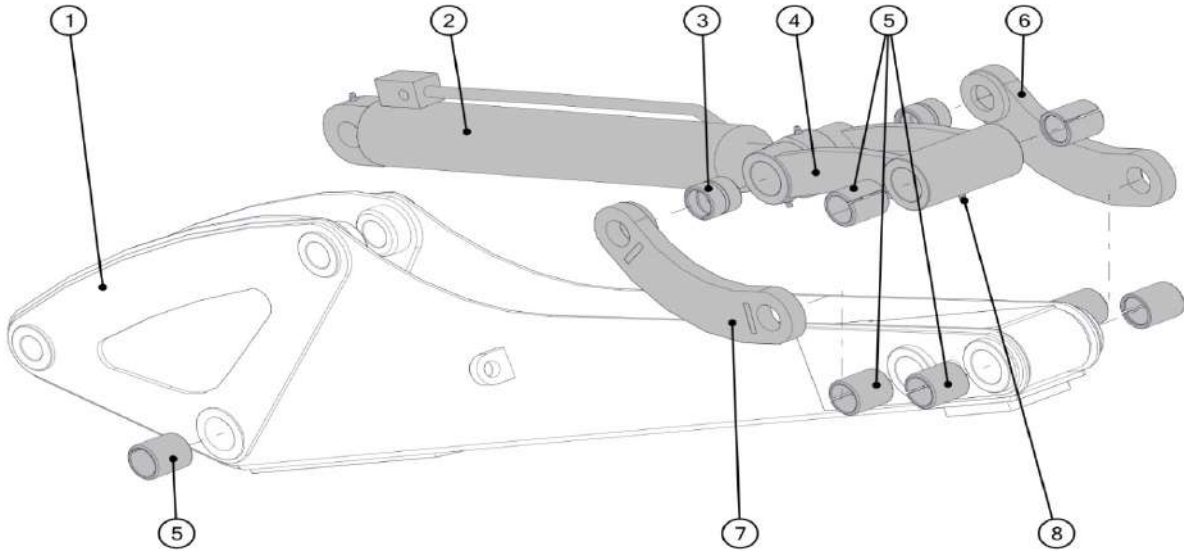
N.	PART NUMBER	NAME	QTT.
1	0210001	SUPPORT UNIT	1
2	0220020	ADJUSTMENT WASHER	2
3	0220019	ADJUSTMENT WASHER	2
4	0211001	SLEEVE	2
5	M12X035E	SCREW	2
6	M12X125	WASHER	2
7	0221003	BOLT	2
8	0320000M	SUPPORT UNIT	1

9.9. BOOM ASSY:



N.	PART NUMBER	NAME	QTT.
1	0131004	SLEEVE	2
2	1130038	CLAMP	1
3	M08X080E	SCREW	1
4	3330000	FIRST BOOM UNIT	1
5	0333001	CYLINDER	1
6	0119012	STOP	1
7	M12D985T	NUT	1

9.10. STICK, PIVOT POINT ASSY:



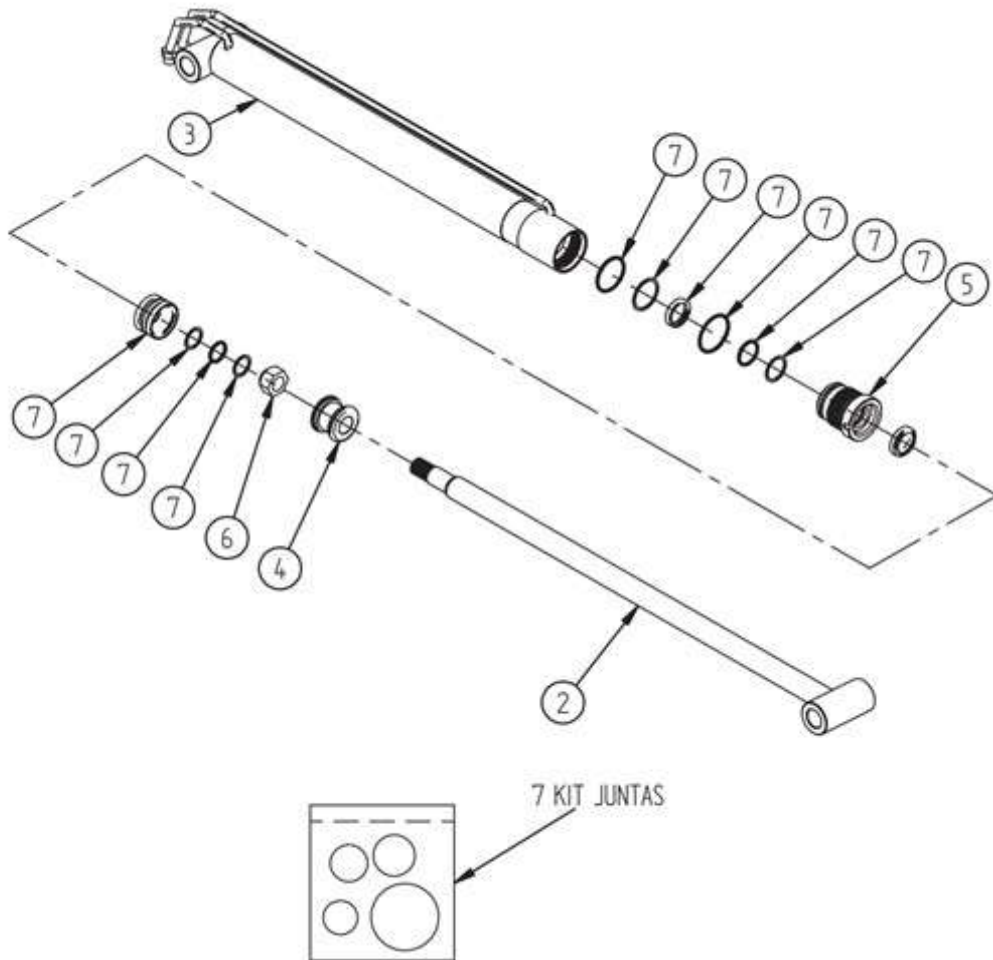
N.	PART NUMBER	NAME	QTT.
1	0340001	SECOND BOOM, STICK	1
2	1843001	CYLINDER	1
3	1851004	SLEEVE	2
4	1850002	CONNECTING ROD	1
5	1851002	SLEEVE	8
6	1850007	PIVOT POINT UNIT	1
7	1850006	PIVOT POINT UNIT	1
8	MT50306100	NIPPLE	3



9.11. STABILIZER CYLINDER PARTS EXPLOSION:

N.	PART NUMBER	NAME	QTT.
	0103001	CYLINDER UNIT	2
2	0103002	ROD	2
3	0103005	SLEEVE	2
4	0103003	PISTON	2
5	0103004	GUIDE	2
6	M22D958T	NUT	2
7	1103022	OIL SEAL REPAIR KIT	2

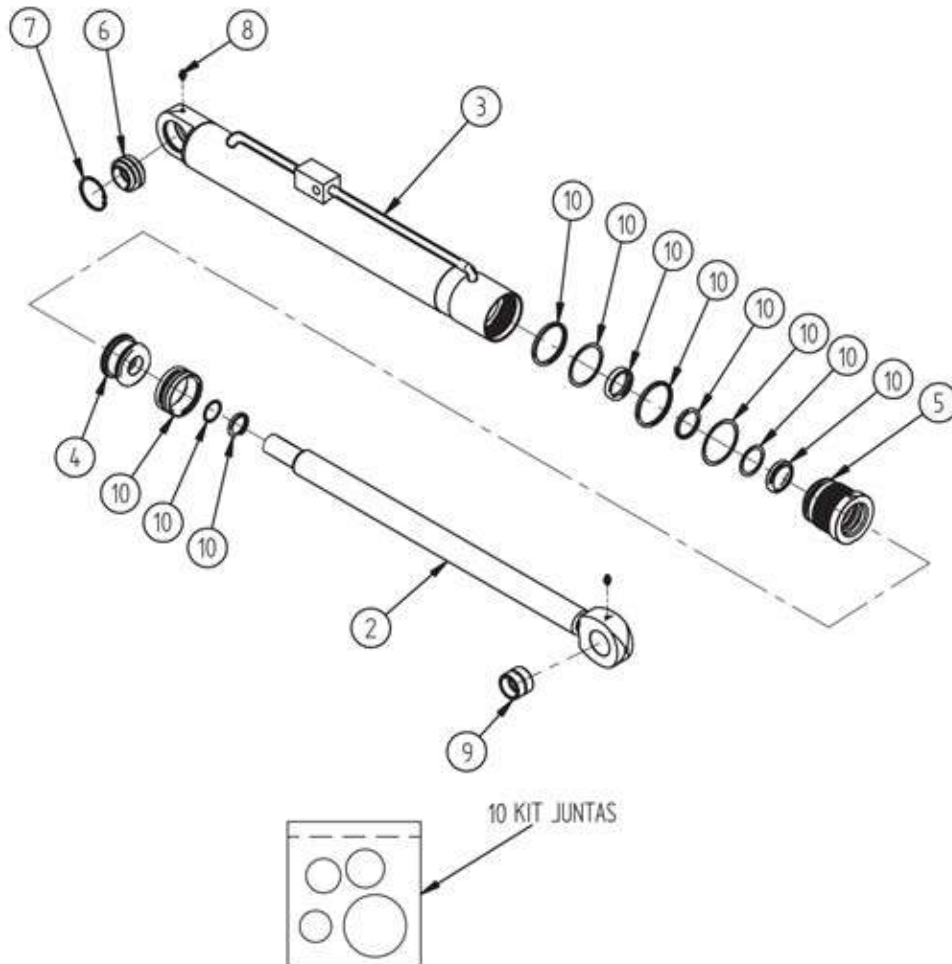
I





9.12. BOOM CYLINDER -1ST CYLINDER PARTS EXPLOSION:

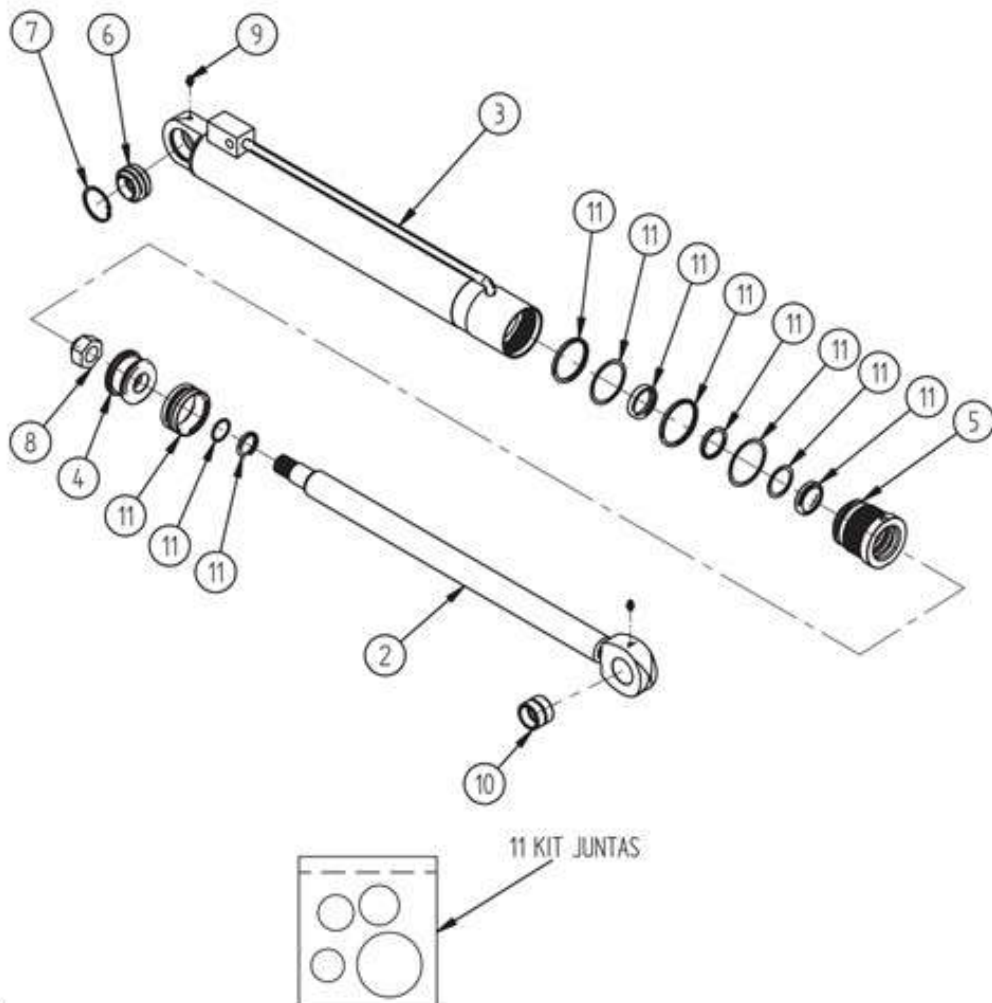
N.	PART NUMBER	NAME	QTT.
1	0333050	CYLINDER UNIT	1
2	033056	ROD	1
3	0333051	SLEEVE	1
4	0333052	PISTON	1
5	0333053	GUIDE	1
6	3343002	PIVOT BOLT	1
7	3343003	ELASTIC RING	1
8	MT50306100	LUBRICATOR	2
9	0333057	SLEEVE	1
10	0333055	OIL SEAL REPAIR KIT	1





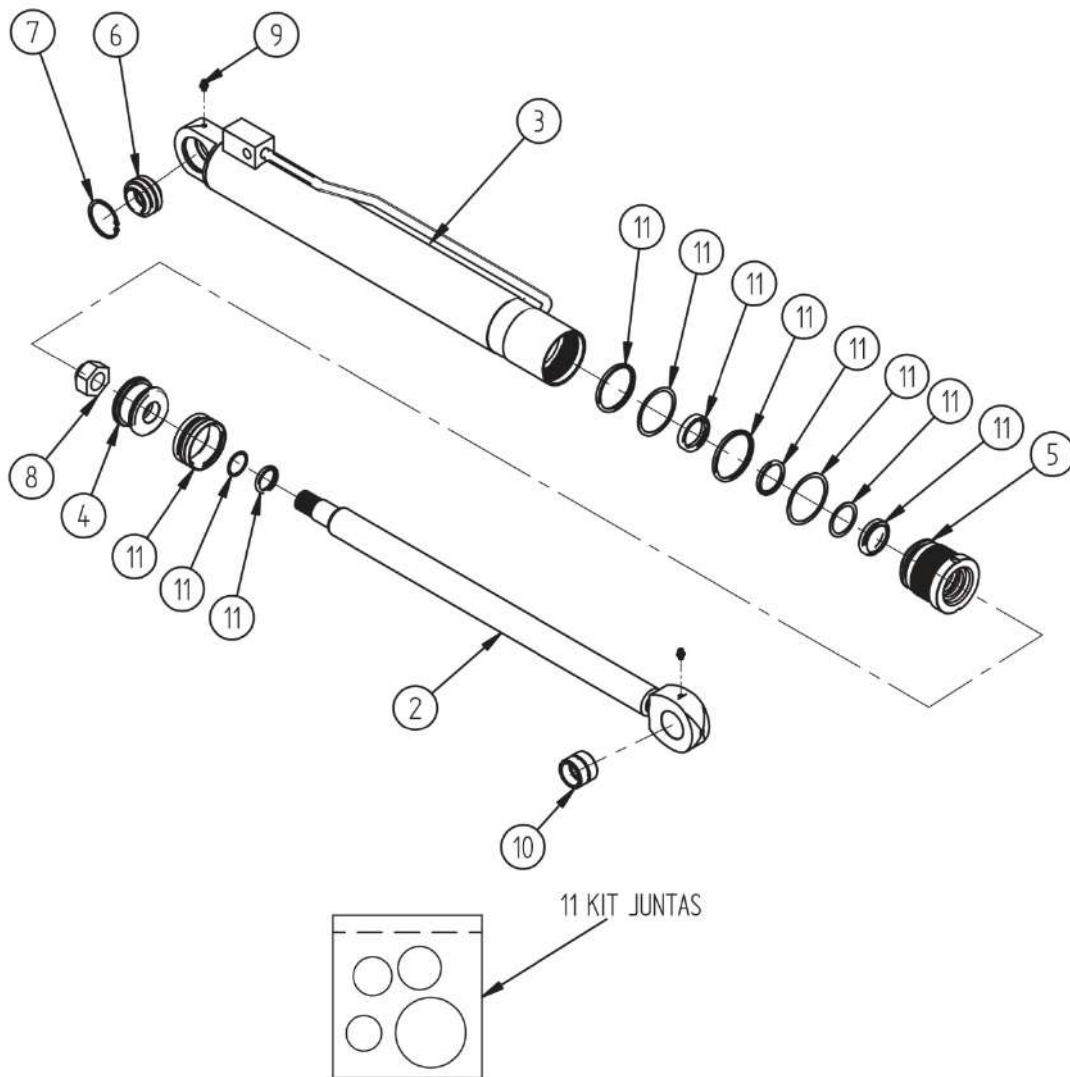
9.13. 2ND CYLINDER PARTS EXPLOSION:

N.	PART NUMBER	NAME	QTT.
1	0333001	CYLINDER UNIT	1
2	0333002	ROD	1
3	0333005	SLEEVE	1
4	0333003	PISTON	1
5	0333004	GUIDE	1
6	3343002	PIVOT BOLT	1
7	3343003	ELASTIC RING	1
8	0333026	NUT	1
9	MT50306100	LUBRICATOR	2
10	0333057	SLEEVE	1
11	0333040	OIL SEAL REPAIR KIT	1



9.14. BUCKET CYLINDER PARTS EXPLOSION:

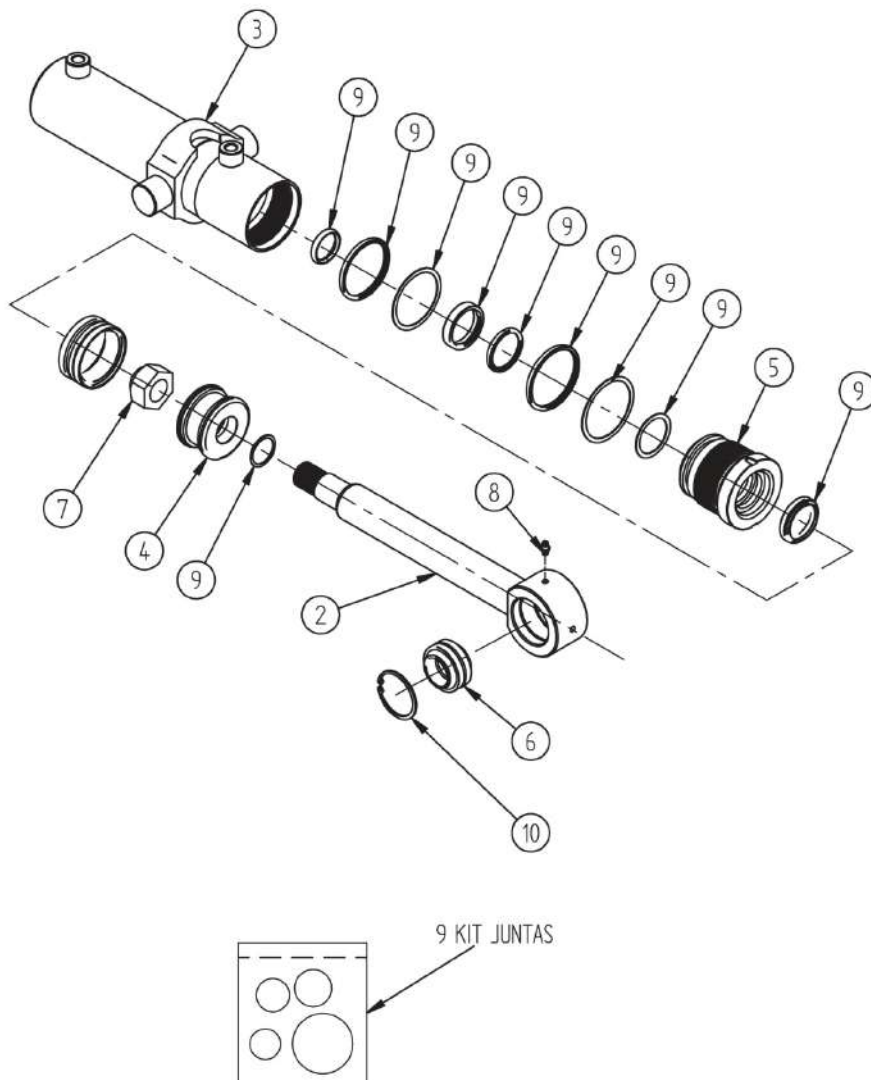
N.	PART NUMBER	NAME	QTT.
	1843001	CYLINDER UNIT	1
2	1843002	ROD	1
3	1843009	SLEEVE	1
4	0243002	PISTON	1
5	0243003	GUIDE	1
6	0133014	PIVOT BOLT	1
7	0133013	ELASTIC RING	1
8	M27D985T	NUT	1
9	MT50306100	LUBRICATOR	2
10	1843005	SLEEVE	1
11	2243009	OIL SEAL REPAIR KIT	1



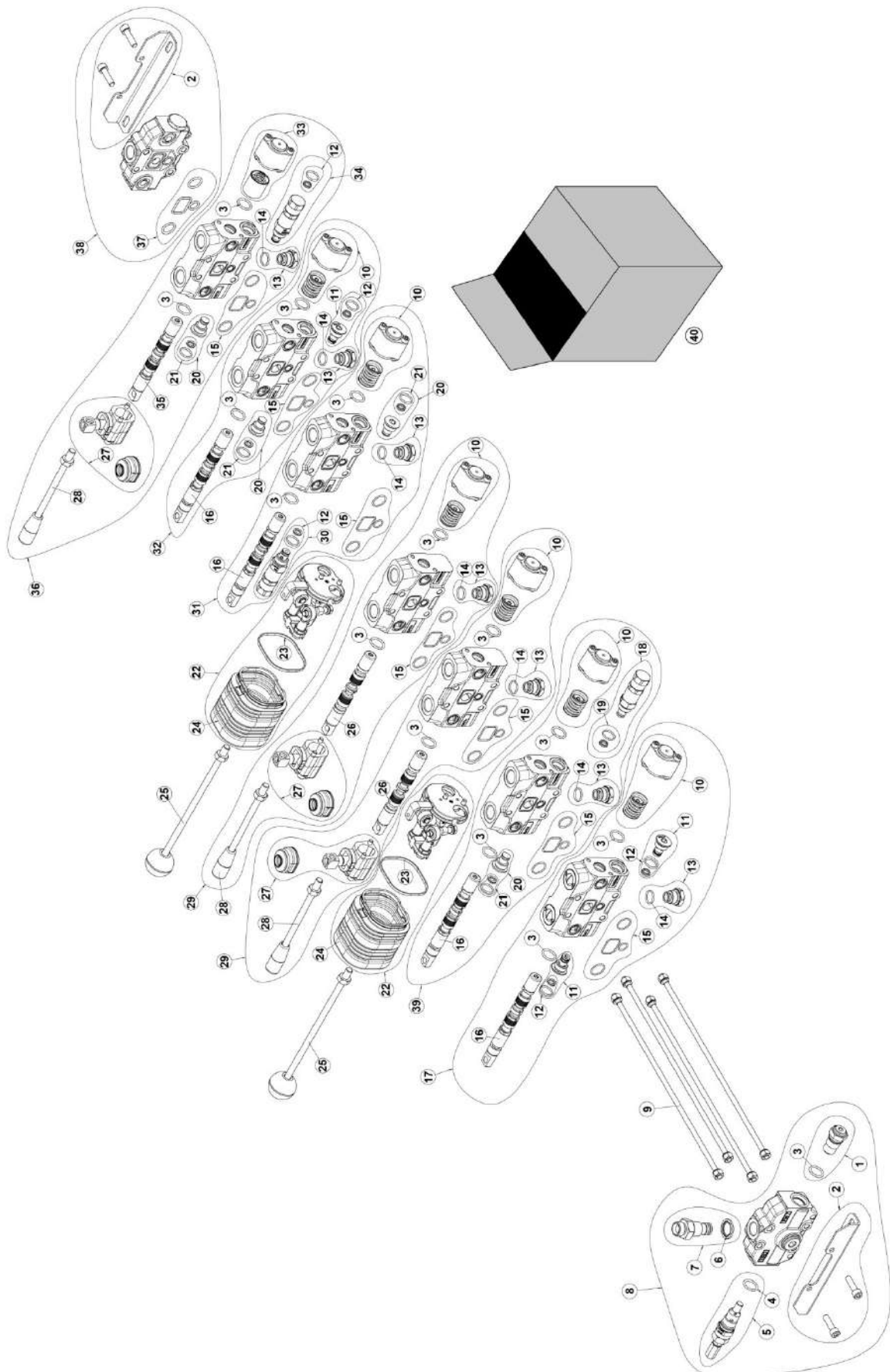


9.15. TURN CYLINDER:

N.	PART NUMBER	NAME	QTT.
1	0113055	CYLINDER UNIT	2
2	0113056	ROD	2
3	0113065	SLEEVE	2
4	0243002	PISTON	2
5	0243003	GUIDE	2
6	SRC-32	PIVOT BOLT	2
7	M27D958T	NUT	2
8	MT50306100	LUBRICATOR	2
9	2243009	OIL SEAL REPAIR KIT	2
10	0133013	SEEGER	2



9.16. DISTRIBUTOR VALVES PARTS EXPLOSION:





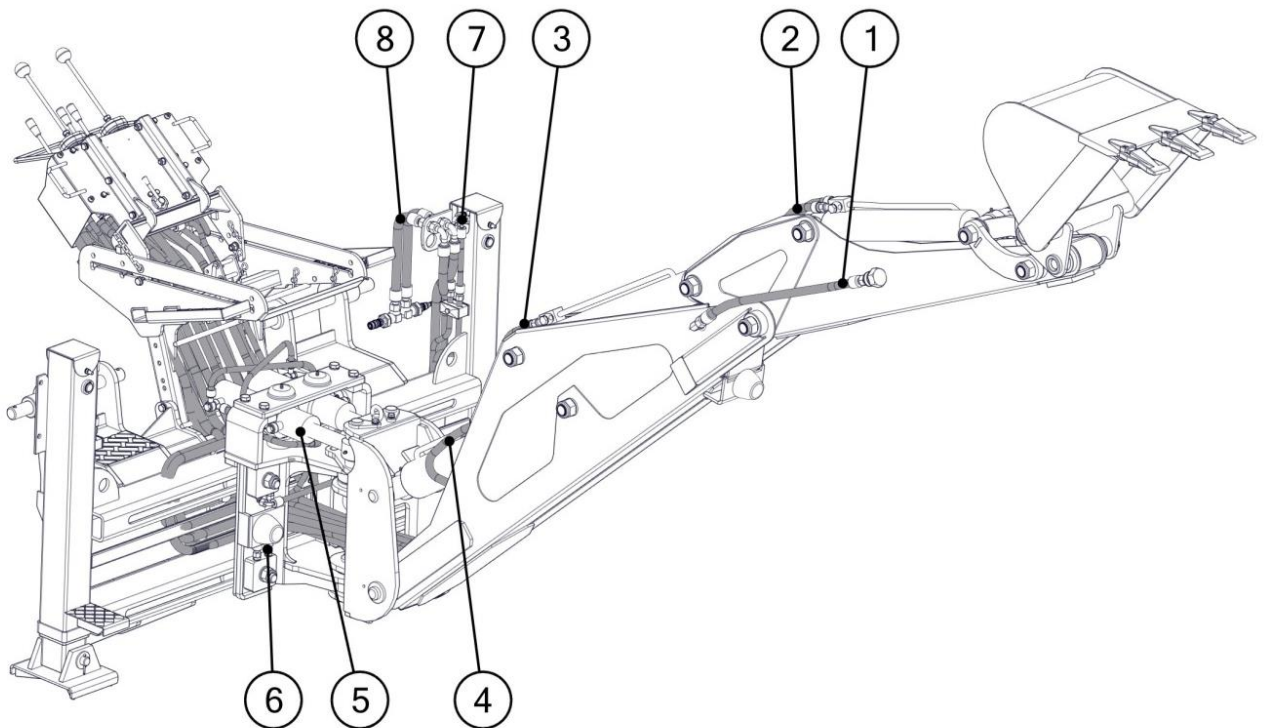
POS.	REF.	CANT. / QTY.	NAME
1	DO58844R10	10	CHECK VALVE
2	DO2930105002R10	10	SUPPORT BRACKET
3	DO526C05NN008R50	50	KIT O-RING
4	DO526C05NN008R50	50	KIT O-RING
5	DOWPD24M2016501R05	5	ELECTRICAL CONNECTOR
6	DO526C11NN007R50	50	KIT O-RING
7	DO588159R10	10	NIPPLE
8	DO6DA50BZ165009R	1	INLET
9	DO590375018R10	10	KIT TIE RODS M8x375
10	DO580650A20R10	10	SPOOL CONTROL
11	DOWUSACU34003R05	5	ANTI-CAVITATION VALVE
12	DO526C06NN004R50	50	KIT O-RING
13	DOWUS00S34001R10	10	CHECK VALVE
14	DO526A00NN039R50	50	O-RING
15	DO526A0765001R50	50	KIT O-RING
16	DO29266501041R05	5	JOYSTICK SPOOL
17	DO6DF65B00625R	1	DNC65 1/2" VCAB
18	DOWPC00S3421002R05	5	CHECK VALVE
19	DO526C06NN004R50	50	KIT O-RING
20	DO58877R10	10	PLUG
21	DO526C06NN004R50	50	KIT O-RING
22	DO55514028R05	5	JOYSTICK WITH LOCK-UNLOCK
23	DO33299006R20	20	CABLE
24	DO28601019R20	20	RUBBER BOOT FOR JOYSTICK
25	DO535125006R20	20	LEVER KIT
26	DO29266501035R05	5	SPOOL
27	DO57010223R10	10	LEVER HOLDER
28	DO535118002R20	20	LEVER KIT
29	DO6DE65B00619R	1	DNC65 O-RING
30	DOWLDC06G025001R05	5	CHECK VALVE
31	DO6DF65B00626R	1	DNC65 O-RING
32	DO6DF65B00627R	1	DNC65 O-RING
33	DO580650B01R10	10	SPOOL CONTROL
34	DOWPDLPS3413004R05	5	VL DNC65 130BAR – OR 012
35	DO29266501010R05	5	SPOOL
36	DO6DF65B00629R	5	DNC65 O-RING
37	DO526A0965003R50	50	CNF N°50
38	DO6DC65B043R	1	OUTLET
39	DO6DF65B00628R	1	DNC65 1/2" VLCB VNR
40	0113074HID	1	HYDRAULIC VALVES MOUNT KIT



10. HYDRAULIC INSTALLATION:

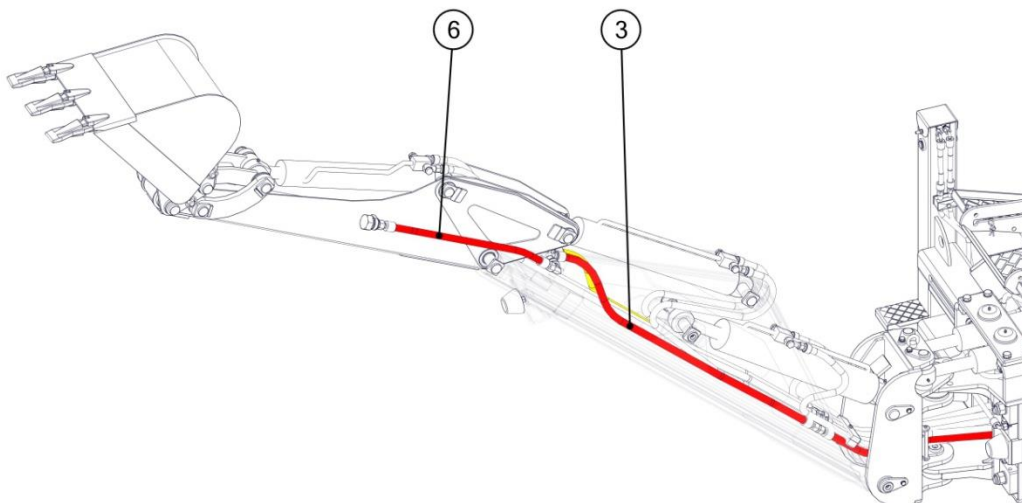
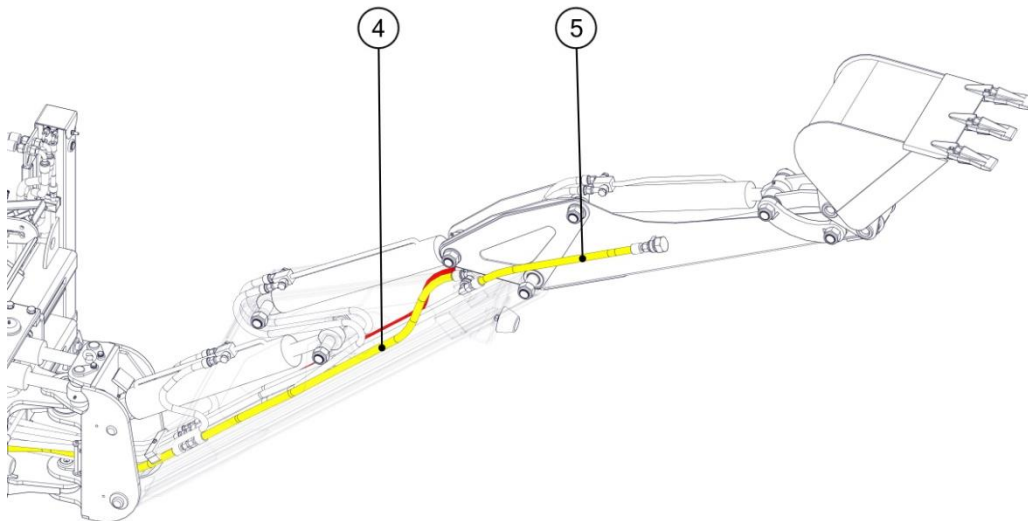
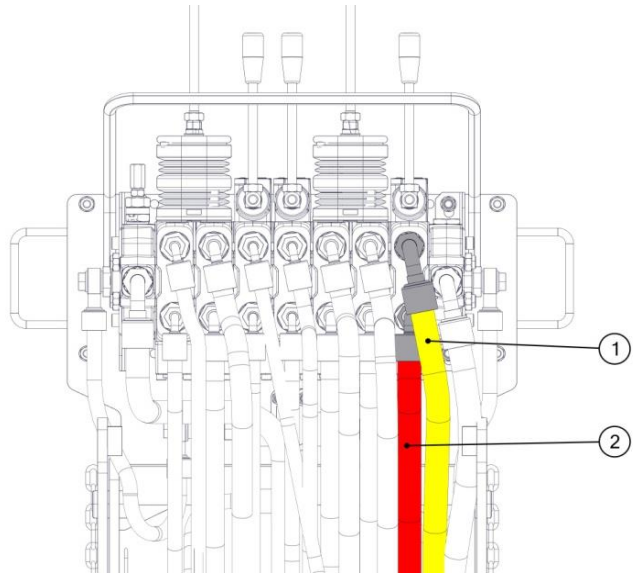
HYDRAULICS INDEX

N.	NAME
1	ATTACHMENT HOSES
2	BUCKET CYLINDER HOSES
3	STICK CYLINDER HOSES
4	BOOM CYLINDER HOSES
5	TILTING/TURN HOSES
6	SWINGING BLOCK HOSES
7	STABILIZERS HOSE
8	HOSE TO MACHINE CONNECTION
9	HYDRAULIC SCHEME



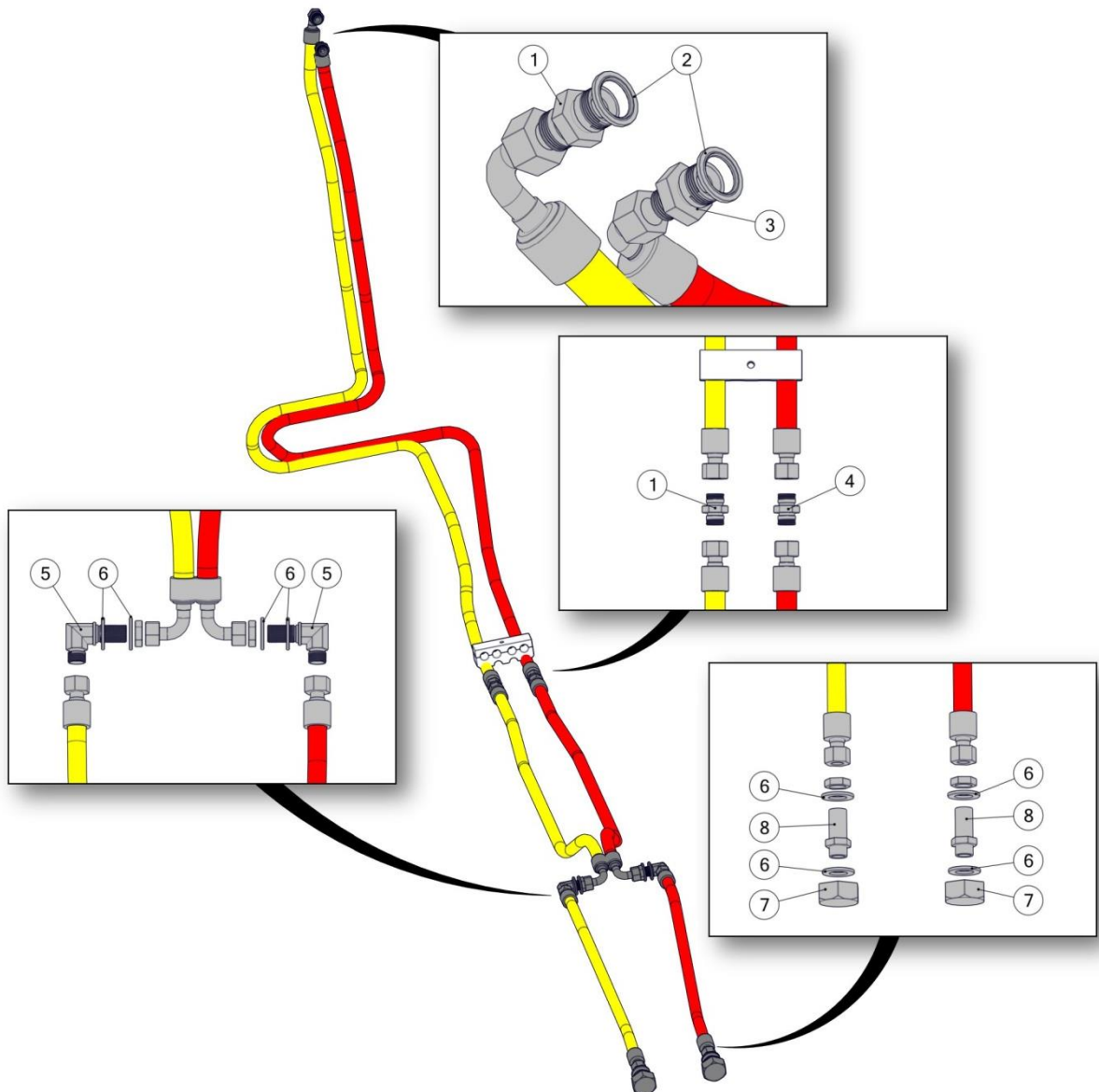
1. ATTACHMENT/AUX LINE HOSES

N.	PART NUMBER
1	20518L01
2	20518L02
3	20518L03
4	20518L04
5	20518L05
6	20518L06



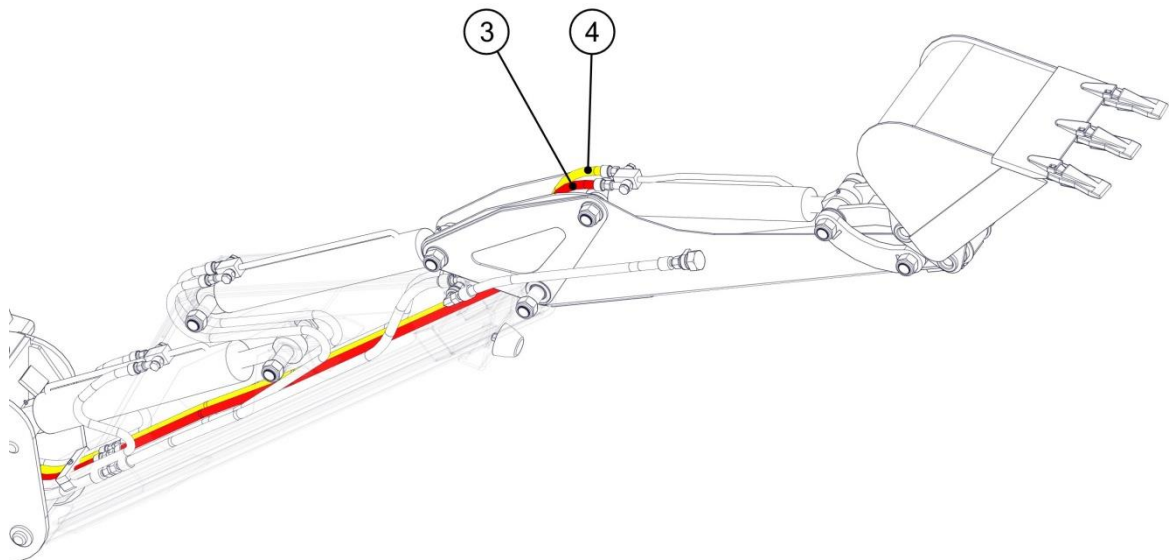
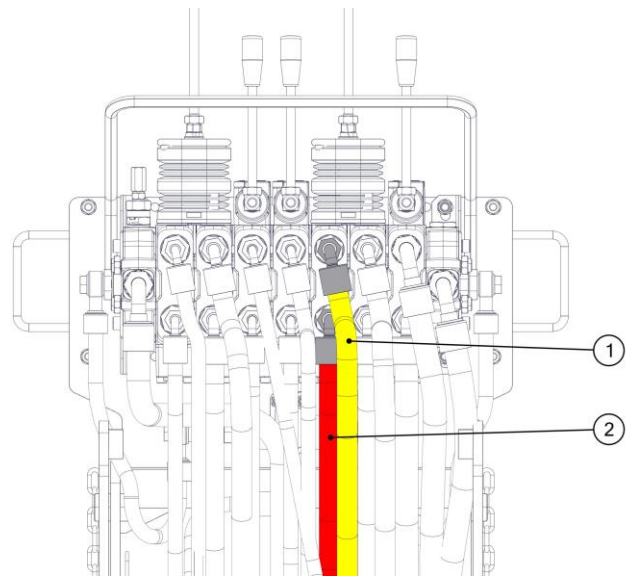
1. ATTACHMENT / AUX LINE HOSES

N.	PART NUMBER	NAME	QTT.
1	30170808	CONNECTION	2
2	30470008	METAL JOINT	2
3	30190806	REDUCER	1
4	30170606	CONNECTION	1
5	34130808	ELBOW	2
6	M22D125A	WASHER	8
7	304300808	NUT	2
8	34090808	UNION	2



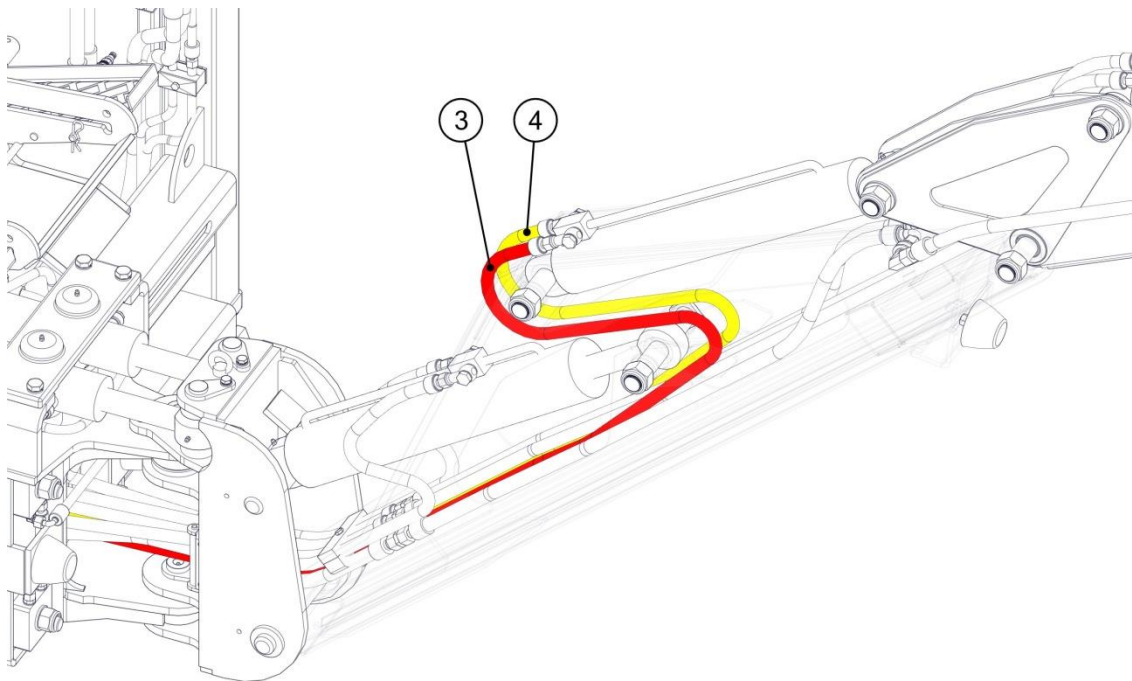
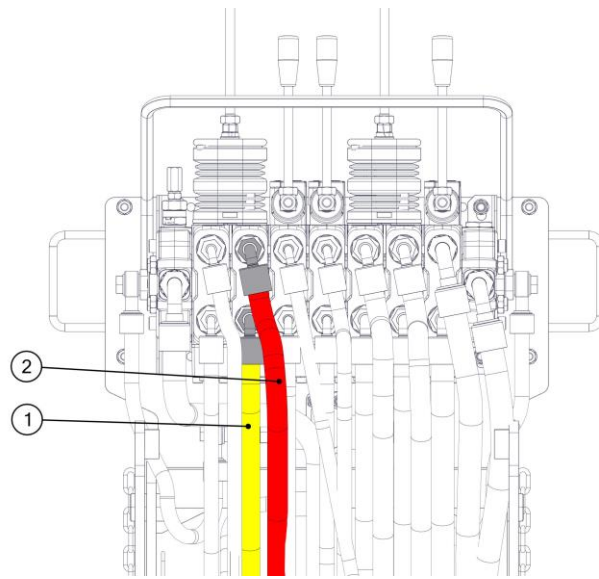
2. BUCKET CYLINDER HOSES

N.	PART NUMBER
1	20518L07
2	20518L08
3	20518L09
4	20518L10



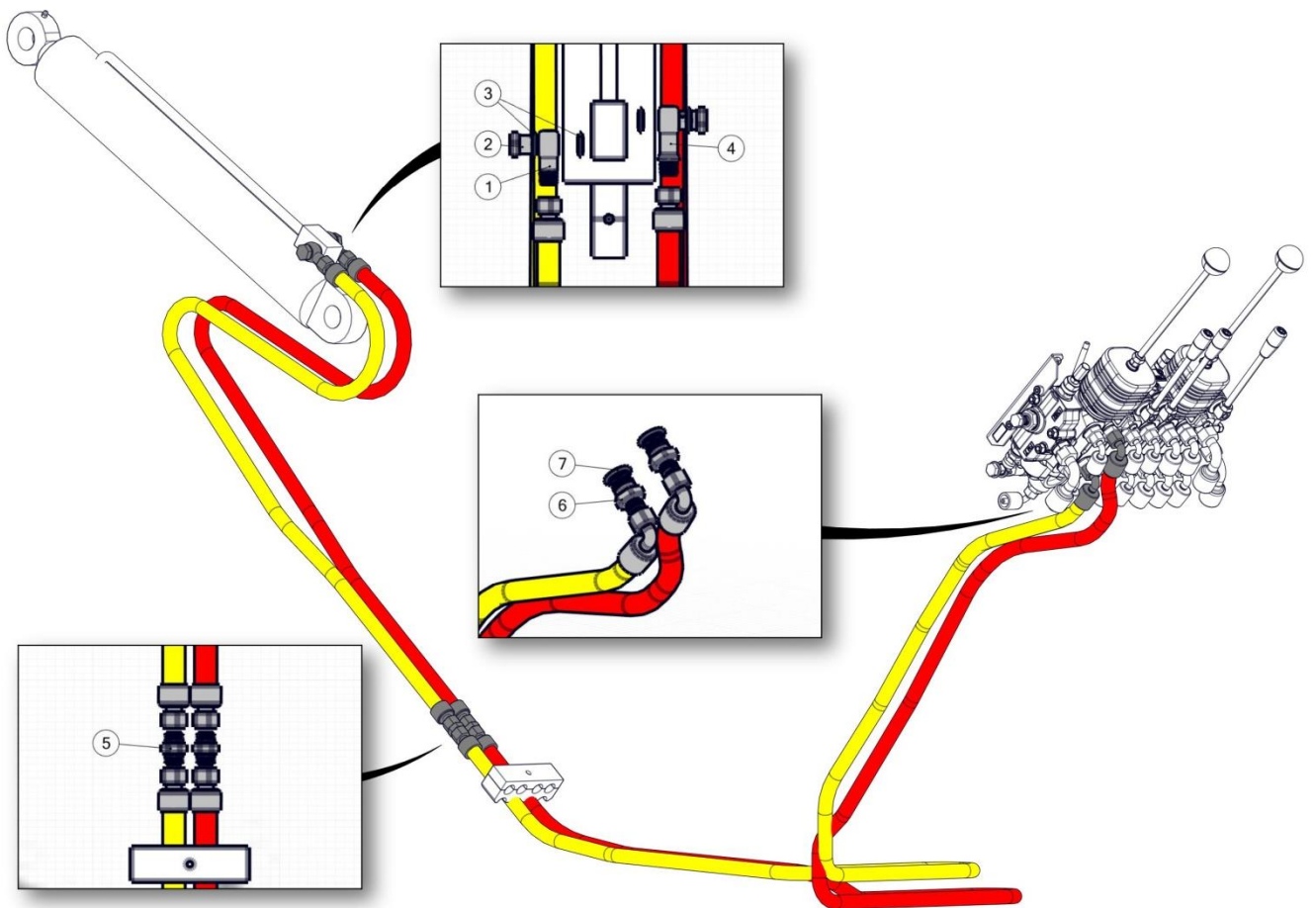
3. STICK CYLINDER HOSES

N.	PART NUMBER
1	20518L11
2	20518L12
3	20518L13
4	20518L14



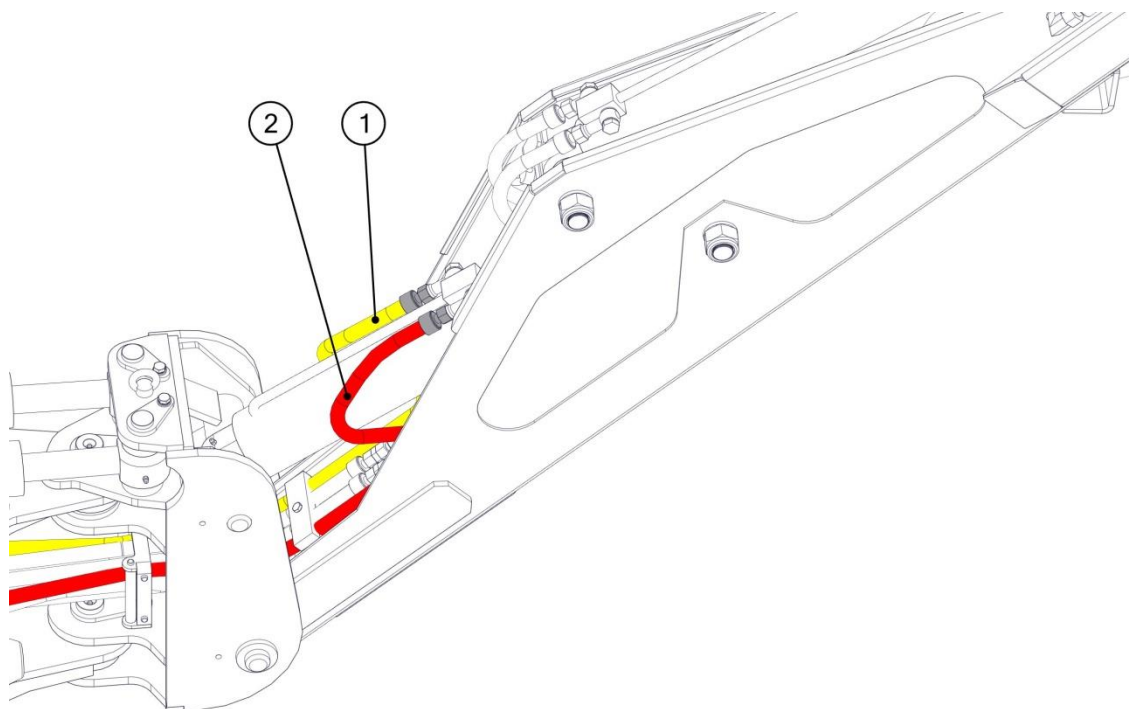
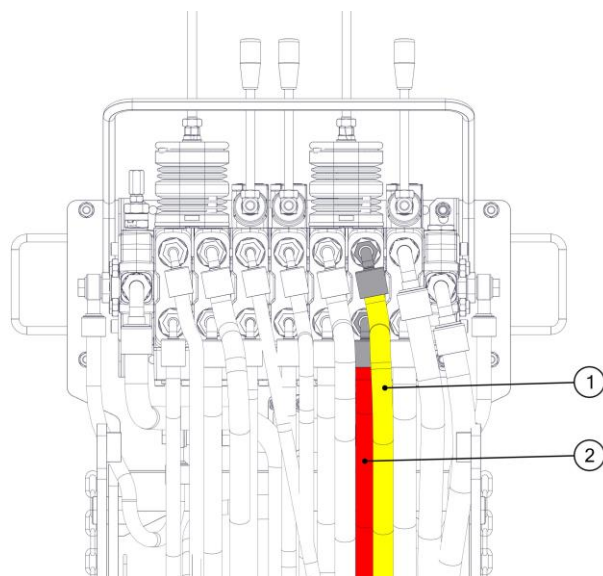
3. STICK CYLINDER HOSE

N.	PART NUMBER	NAME	QTT.
1	30030006	THREDDING SPHERICAL	1
2	30050006	HOLLOW SCREW	2
3	30470006	METAL JOINT	4
4	ESF 3/8	THREDDING SPHERICAL	1
5	30170606	UNION	2
6	30190806	REDUCTION	2
7	30470008	METAL JOINT	2



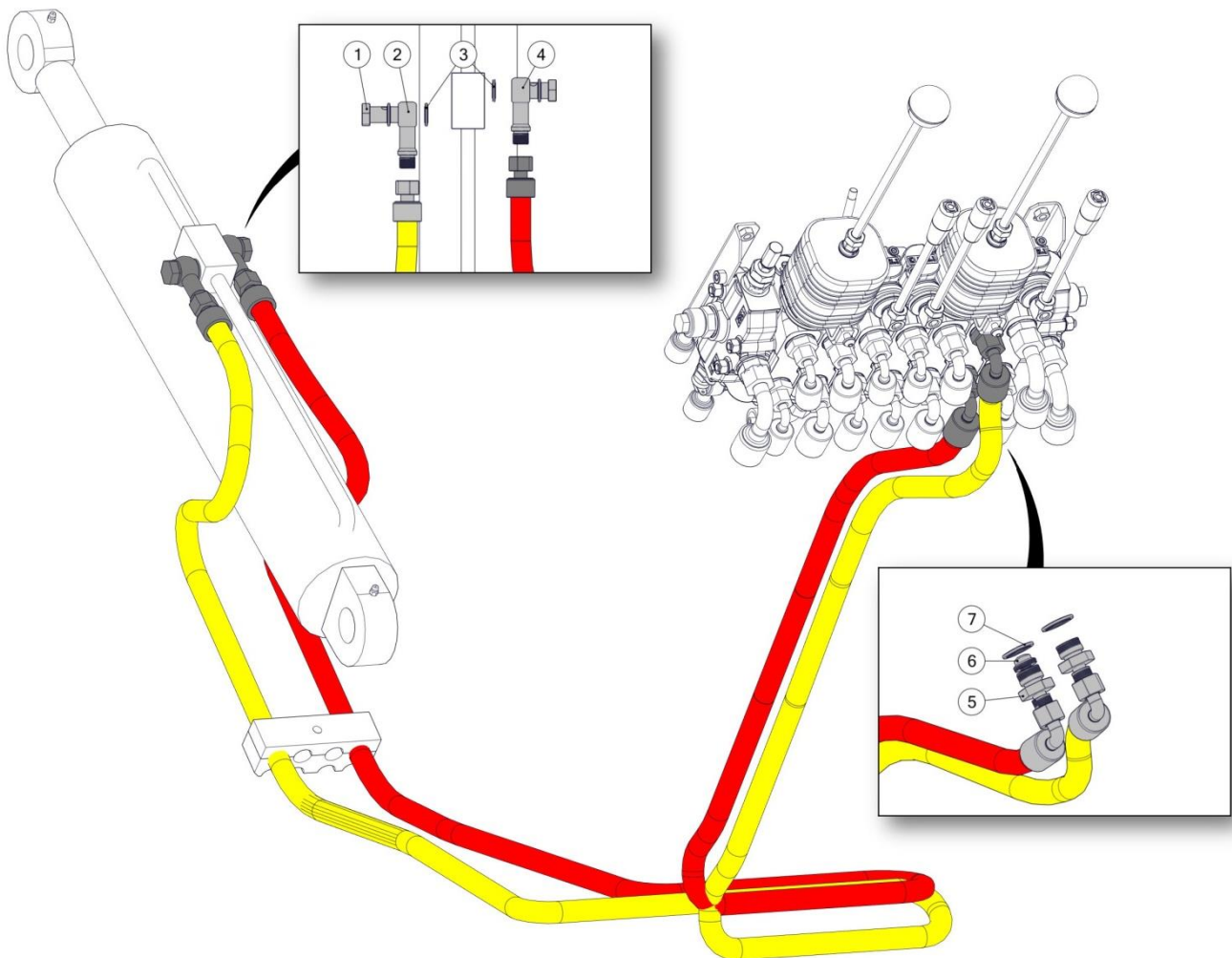
4. BOOM CYLINDER HOSE

N.	PART NUMBER
1	20518L15
2	20518L16



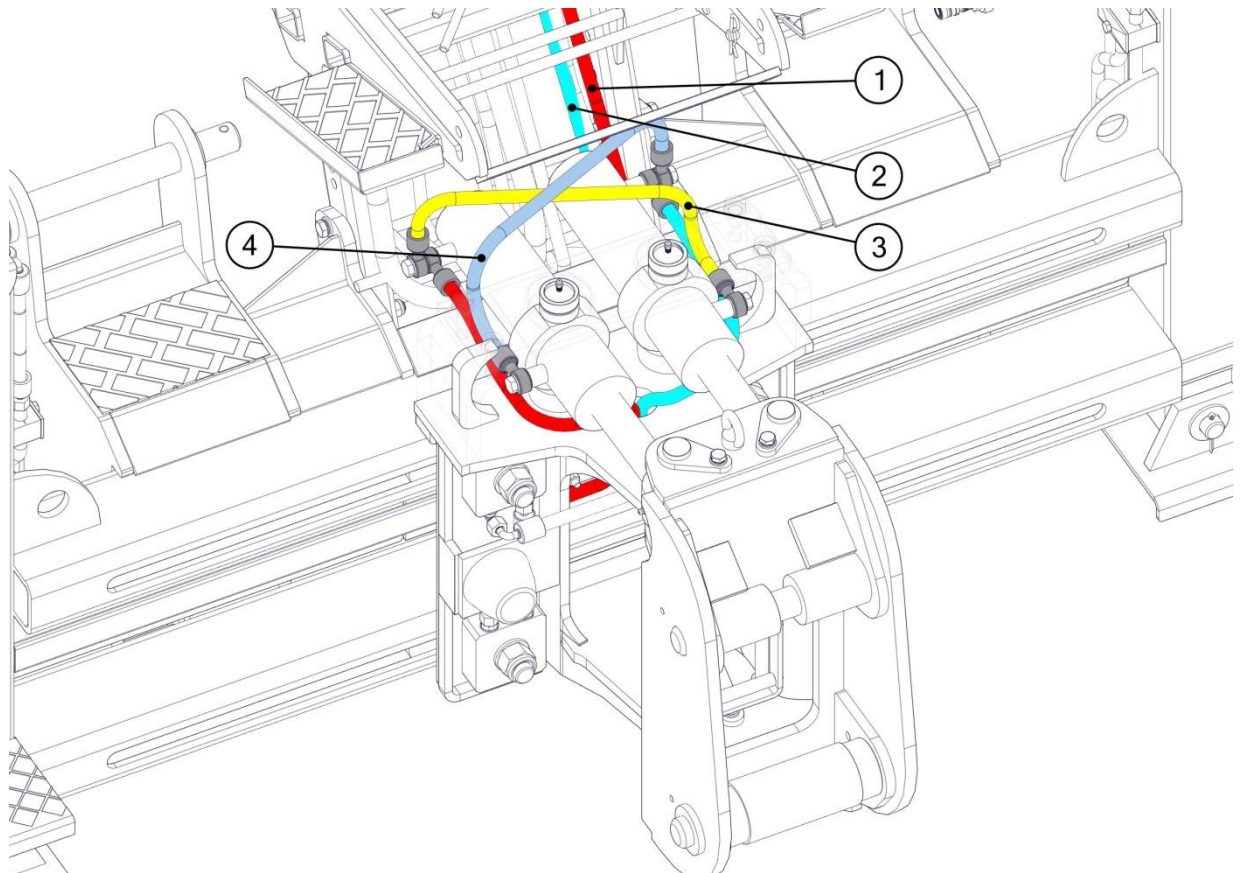
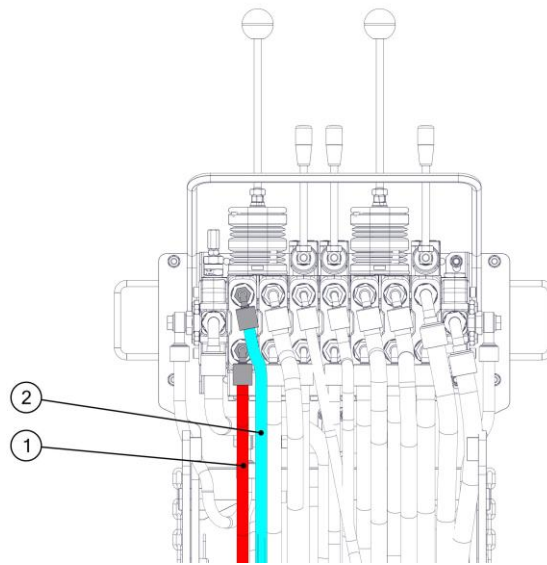
4. BOOM CYLINDER HOSES

N.	PART NUMBER	NAME	QTT.
1	30050006	HOLLOW SCREW	2
2	30030006	THREDDING SPHERICAL	
3	30470006	METAL JOINT	4
4	ESF 3/8	THREDDING SPHERICAL	1
5	30190806	REDUCTION	2
6	1170018	STRANGLING	1
7	30470008	METAL JOINT	2



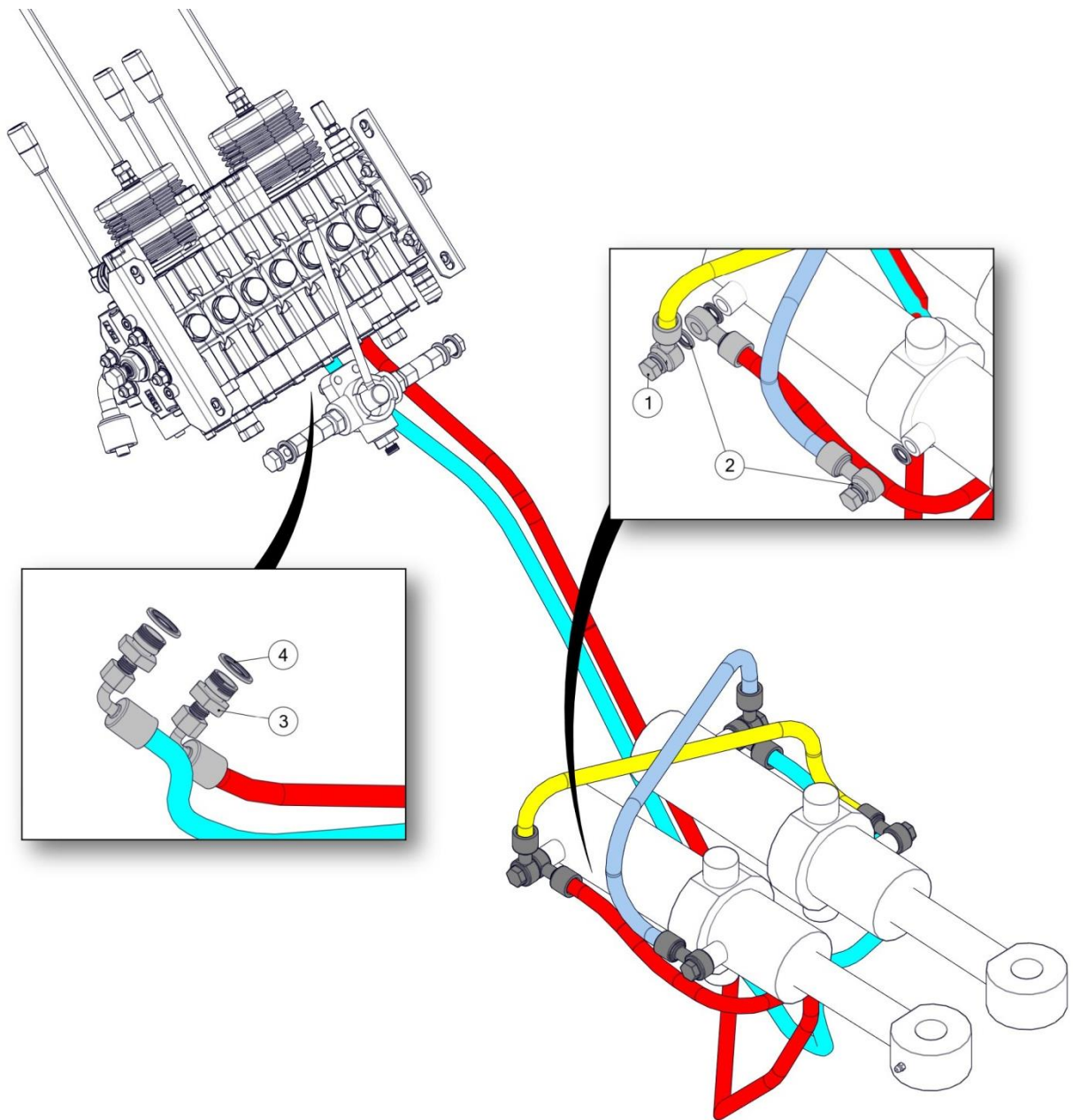
5. TILTING/TURN HOSE

N.	PART NUMBER
1	20518L17
2	20518L18
3	20518L19
4	20518L20



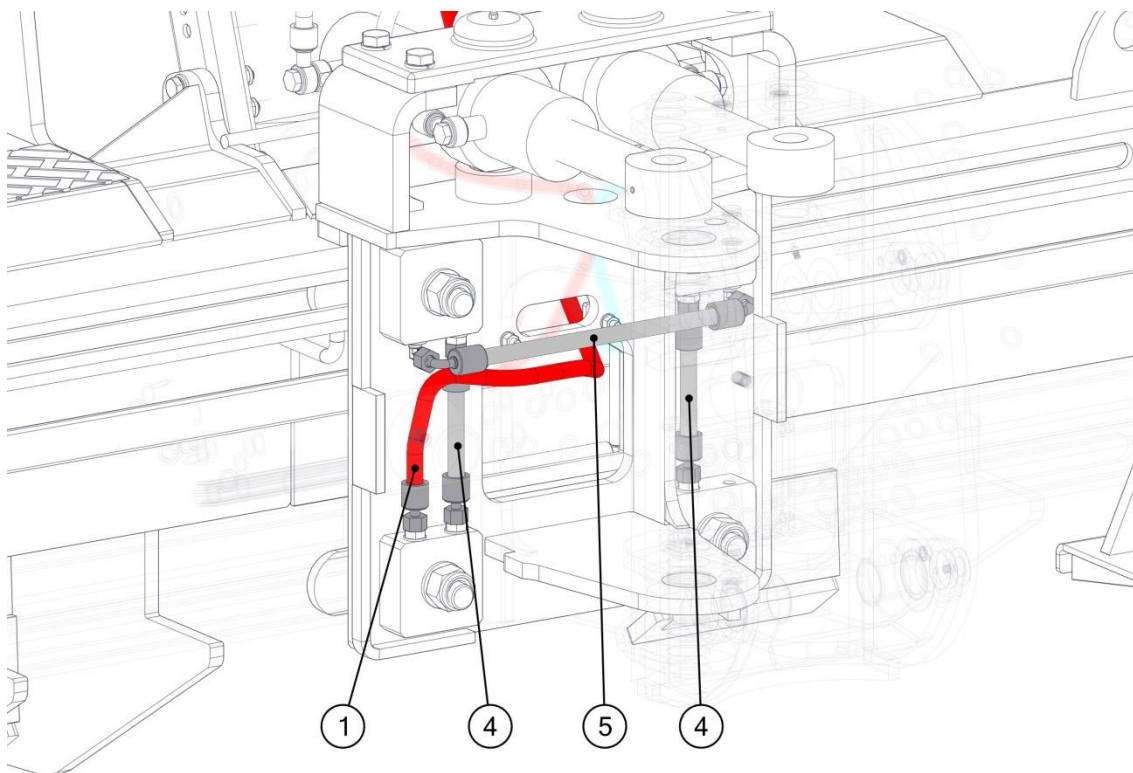
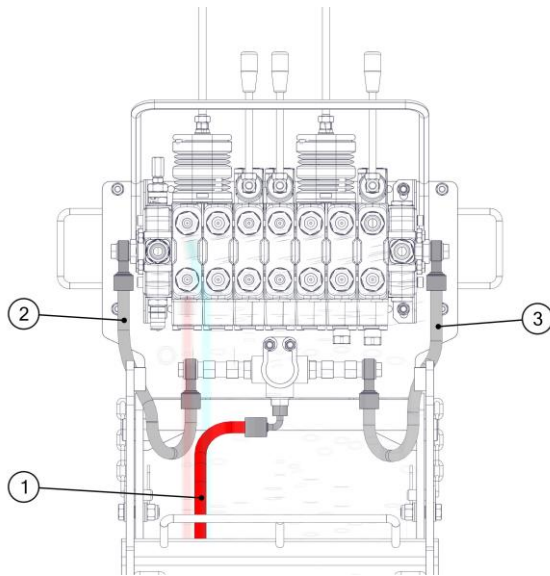
5. TILTING/ TURN HOSES

N.	PART NUMBER	NAME	QTT
1	30050004	HOLLOW SCREW	4
2	30470004	METAL JOINT	10
3	3040231	REDUCER	2
4	30470008	METAL JOINT	2



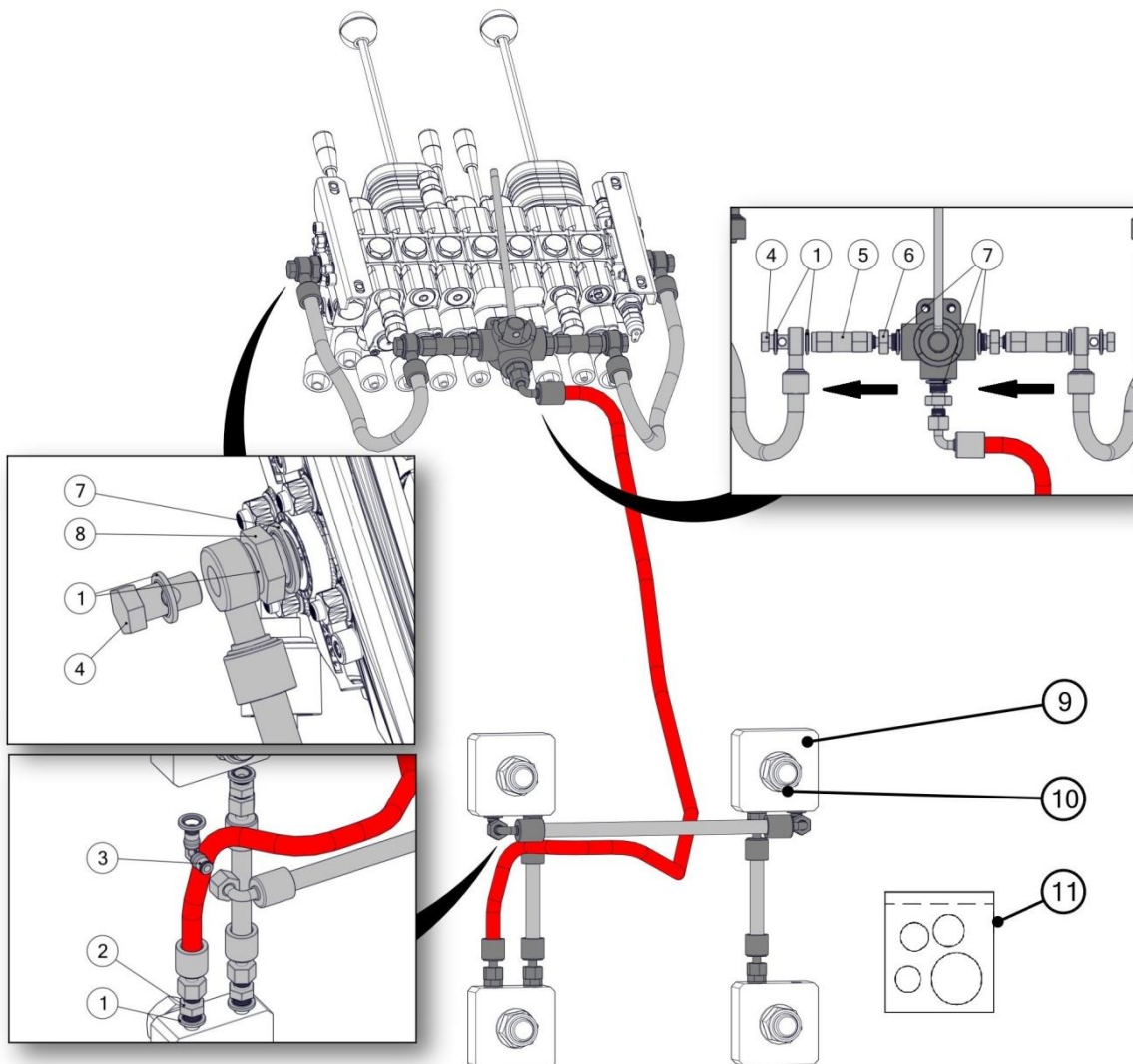
6. SWINGING BLOCK HOSES

N.	PART NUMBER
1	20518L21
2	20518L22
3	20518L23
4	20518L24
5	20518L25



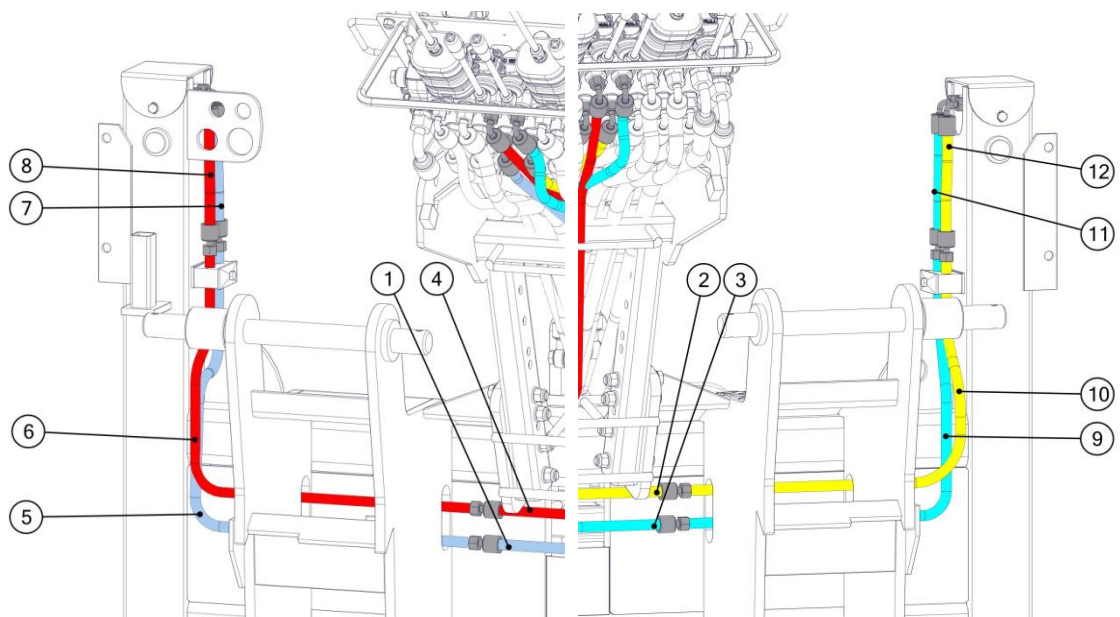
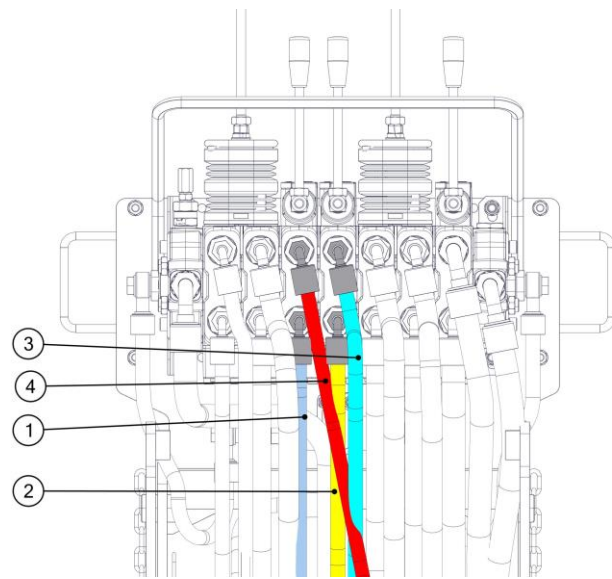
6. SWINGING SIDE SHIFT BLOCK HOSE

N.	PART NUMBER	NAME	QTT.
1	30470004	METAL JOINT	11
2	30170402	UNION	5
3	34010404	ELBOW	2
4	30050004	HOLLOW SCREW	4
5	0173003	NO RETURN	2
6	30190604	REDUCER	3
7	30470006	METAL JOINT	5
8	30310804	REDUCER	2
9	0113120	BLOCKING CYLINDER	4
10	M24/150D980T	NUT	2
11	0113054	OIL SEAL REPAIR KIT	1



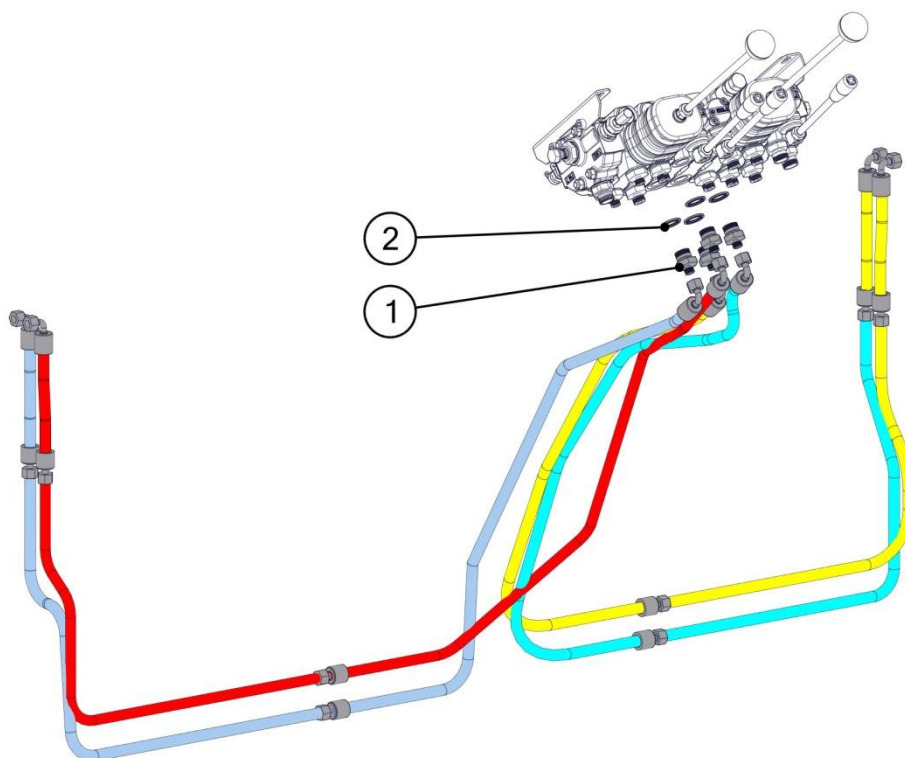
7. STABILIZERS HOSE

N.	PART NUMBER
1	20518L26
2	20518L27
3	20518L28
4	20518L29
5	0103088
6	0103091
7	20518L30
8	20518L31
9	0103089
10	0103090
11	20518L32
12	20518L33



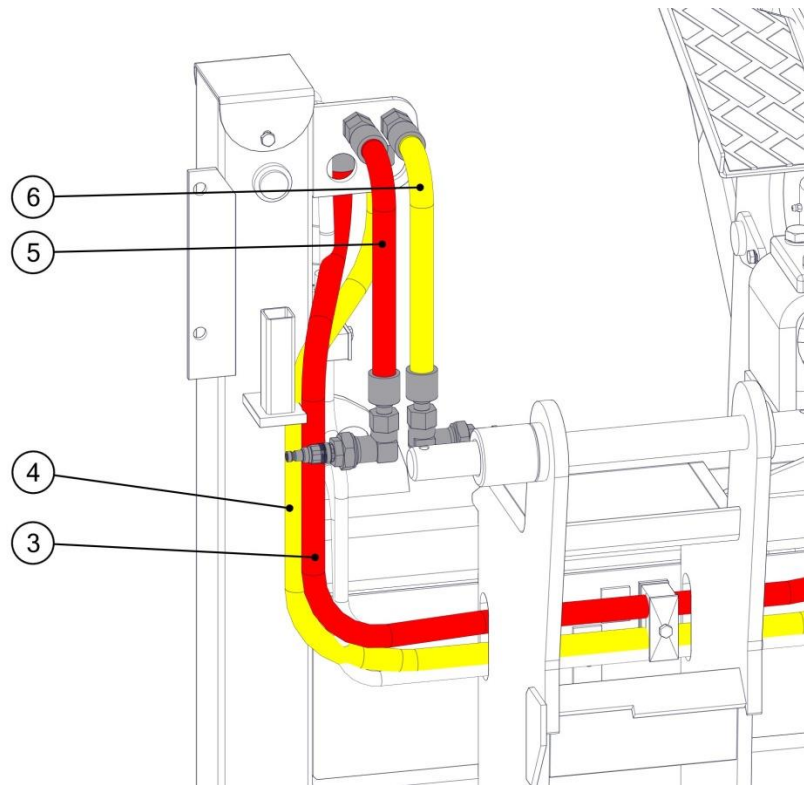
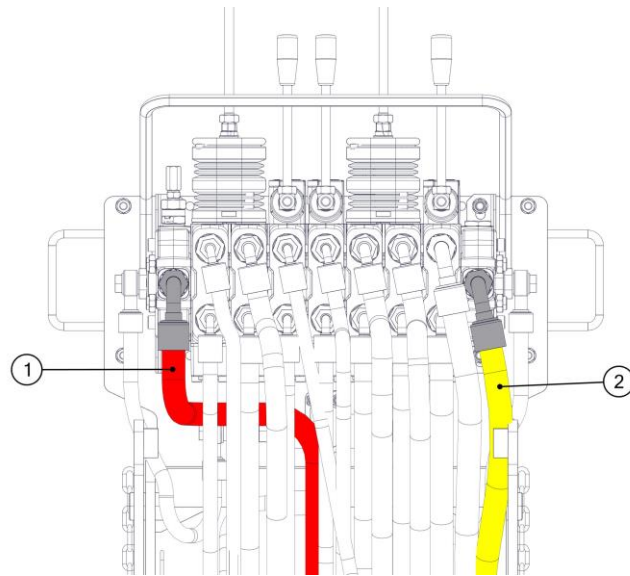
7. STABILIZERS HOSE

N.	PART NUMBER	NAME	QTT.
1	30190804	REDUCER	4
2	30470008	METAL JOINT	4



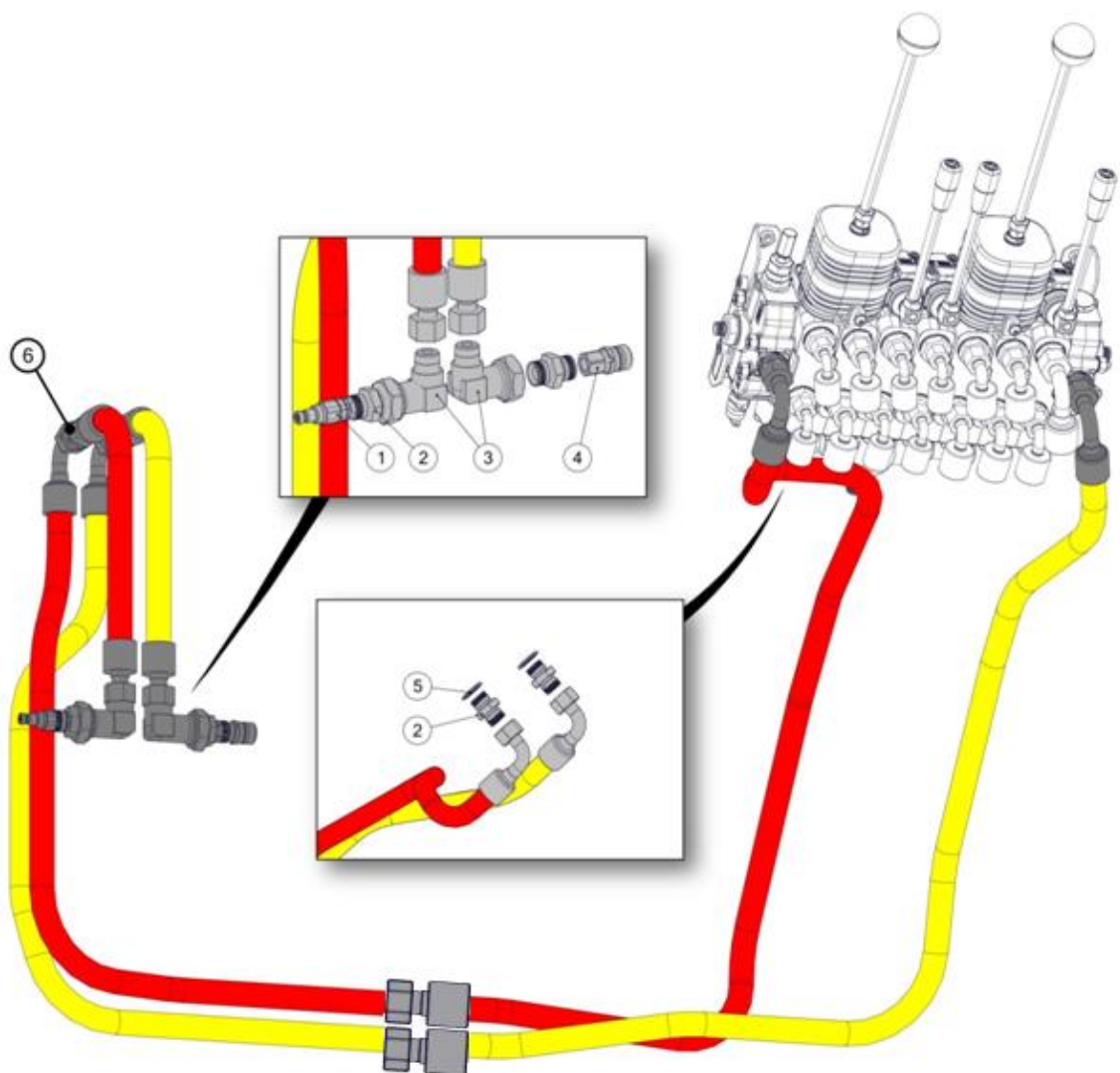
8. HOSE TO MACHINE CONNECTION

N.	PART NUMBER
1	20518L34
2	20518L35
3	0103092
4	0103093
5	20518L36
6	20518L37



8. HOSE TO MACHINE CONNECTION

N.	PART NUMBER	NAME	QTT.
1	FFL12GASM	CONNECTOR	1
2	30170808	UNION	4
3	34090808	ELBOW	2
4	2FFL12GASF	CONNECTOR	1
5	30470008	METAL JOINT	2
6	34090808	JOINT	2



9. HYDRAULIC SCHEME

