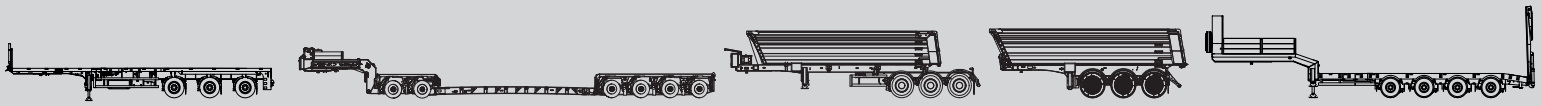
ROJO TRAILER



GP LINE



GPND

USER GUIDE

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1.- SAFETY

This symbol will always go along the instructions to prevent material damages, personal injuries or avoid risky situations for persons.

Not following these instructions will lead to harms which ROJO won´t be responsible for.

DRIVING WITH STEERING SYSTEM

When driving on public roads, battery disconnecting switch (fig. 4.6 - 1) placed on front left hand side, has to be ALWAYS disconnected.

- Turning features from a steered lowbed are different from a non steered lowbed.
- Keep in mind that driving with a steered lowbed will trace a different path compared to a non steered lowbed.

MAINTENANCE TASKS TO BE DONE ON VEHICLE

- This vehicle is a critical safety system. Please proceed carefully with maintenance procedures. A careless work may cause damages and/or accidents.
- Block lowbed wheels properly when working under the unit.
- Use solid wheel chocks under the lowbed doing works that require removing wheels.
- When removing heavy parts, fasten them on a safe way.
- Avoid unnecessary contact will oils and lubricants. Apply lotion on areas that are not protected.
- Leave a safety distance with the moving elements of the system when activating hydraulic components.
- Check that manual steering is disconnected and is kept like this when working over moving elements of the system.
- Surface of cylinder pin can be damaged easily. Damages will lead to leaks.
- To check hydraulic components, use the right tools for high pressures generated inside the hydraulic system.
- Use only original ROJO spares in maintenance and repairing works.

ENVIRONMENT

– Don´t throw away used oil, lubricants or hydraulic fluid on drains, culverts or the ground. These practices are not only forbidden but also will seriously contaminate the environment.

– Used oils, lubricants and hydraulic fluids must be treated by companies authorised for its recycling. All these used fluids must be stored separately.

– Used batteries must be treated by companies authorised for its recycling.

READY-MADE ELECTRIC WIRING



It is forbidden to manipulate or cut any prefabricated electric wire to change its length. This can cause damages or interfere in the right functioning of the system.

2.- TECHNICAL DATA

ELECTRIC SYSTEM

Voltage:	24 V
Electro pump:	2,2 Kw.
Electro pump fuse:	200 A
Power source cable from tractor truck battery to electro pump:	50 mm2

REMOTE CONTROL

Battery type: 3 non rechargeable batteries of 1,5 V: AAA
Module RF: Frequency 433,92 MHz

LUBRICANT GREASE FOR THE STEERING RODS

Vehicle leaves factory with high quality lithium soap KP2K-30 (FIN 51 825).
For a new greasing, please use the following greases or with a similar quality.

ARAL	Aralub HLP 2	from -30ºC to +130ºC
BP	Energrease LS-EP 2	from -20ºC to +120ºC
DEA	Gilssandro EP 2	from -30ºC to +140ºC
ELF	EPEX ELF 2	from -30ºC to +130ºC
ESSO	BEACON EP 2	from -25ºC to +130ºC
KLUBER	Centoplex GLP 402	de -20ºC a +130ºC
MOBIL	Mobilux EP 2	de -20ºC a +120ºC
SHELL	Alvania EP 2	de -20ºC a +120ºC

LUBRICANT GREASE FOR AXLE BEARINGS, LEVERS AND BRAKE CAMSHAFT

Vehicle leaves factory with Rhenus grease, type Rhenus Norplex LKR 2 NLGI Class 2.
For a new greasing, please use same grease or with a similar quality

HYDRAULIC SYSTEM

Capacity of hydraulic tank: 7 litres.

HYDRAULIC OIL

Vehicle is fitted at the factory with oil Shell TELLUS S2 V32 (Mediterranean Area) or TELLUS S2 V15 (Nord Area). This is a mineral hydraulic oil with low content in zinc and a high viscosity to which it has been added additives against wearing, oxidation, rust and foam. This oil can adapt perfectly to extreme and changing conditions.

ISO	11158 - HV category
GB	111181-1-94 - HV category
DIN	51 524 / 3 - HVLP category
DENISON	HF-0 (HF-1 y HF-2)
EATON (VICKERS)	M-2950-S / I-286-S
CINCINNATI-MILACRON	P68, P69, P70
AFNOR	NF E 48-603
ASTM	6158-05 - HV category

Only use oils that meet the following features:

		Mediterranean Area	Nord Area
METHODS	CHARACTERISTICS	ISO 32	ISO 15
ISO 12185	Density 15 ºC, kg/dm3	0.872	0.872
D 445	Viscosity at 40 ºC, mm2/ s	32	15
D 445	Viscosity at 100 ºC, mm2/ s	6,1	3.8
ISO 2909	Viscosity content	143	142
ISO 3016	Flow point, ºC	-39	-42
ISO 2592	Flash point, ºC	210	170

Ask your hydraulic oil supplier about which of their products accomplishes the mentioned specifications.

SHELL	Tellus S2 V 32	Tellus S2 V 15	Fitted at factory
ELF	Hydrelf 32		Compatible hydraulic oils
TOTAL	Equivis ZS 32	Equivis ZS 15	
TEXACO	Rando HDZ 32	Rando HDZ 15	
BP	Energol SHF 32	Energol SHF 15	
ESSO	Univis N32	Univis N15	
AGIP	Arnica 32	Arnica 15	

It is not permitted to mix different types of oils or refill the system biodegradable oil without written authorization ROJO.

3.- ADAPTATION TO TRACTOR TRUCK

ROJO steered lowbed electro pump needs power supply (+24volts) from tractor truck battery. That is why is needed to install an electric plug NATO VG 96 917 on tractor truck.

PLUG INSTALLATION

NATO VG 96 917 Plug, has 2 pins for connection as shown in this drawing. (fig. 3.1)

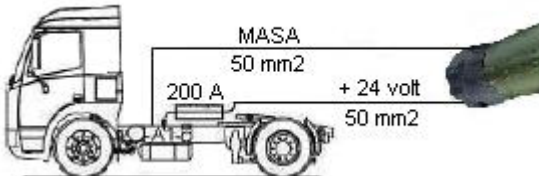


Fig. 3.1 Installation scheme

- Connect pin (+) to battery +24 volts with a 50 mm2 cable and a 200ª fuse on the output exit.
- Connect pin (-) to mass with 50 mm2 cable.

To determine wire length, please remind that when coupling the lowbed, it will be connected to its relative plug on front side of the lowbed, together with the rest of electric and air connections (fig. 3.2).



Fig. 3.2 NATO VG 96 917 lowbed connector

Assembling of wiring system and length of the wires must allow the free turning of the lowbed avoiding that it get hooked with other components or tighten up when turning.

It is recommended to place a switch to isolate the connector when it is not connected to its plug on the lowbed.

4.- OPERATING

ROJO GPED lowbed is equipped with a button pad (fig. 4.2) and a white button (fig. 4.1) located on the left side of the neck and which perform the following functions:

BUTTON PANEL (fig. 4.2):
- MANUAL STEERING
- MANUAL ALIGNMENT

WHITE BUTTON (fig. 4.1):
- PRESSURIZE / DEPRESSURIZE



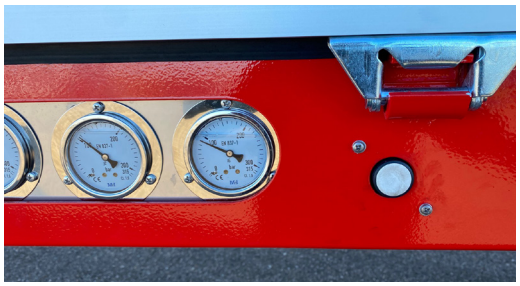


Fig. 4.1 White button



Fig. 4.2 Steering button pad

Optionally, it is equipped with a remote control (fig. 4.3) that will make it easier to operate these functions from the rear side of the vehicle.



Fig. 4.3 Remote control

Both equipments are protected by a battery disconnector (fig. 4.4) placed on the front left-hand side over the neck area.



Fig. 4.4 Disconnector for battery

In case the unit is fitted with an Oscillating Neck, it will include a second button pad (fig. 4.5), next to the steering button pad that controls neck height and which can operate the following functions:
- HEIGHT CONTROL FOR COUPLING TO TRACTOR TRUCK
- LEVEL LOADING PLATFORM



Fig. 4.5 Oscillating neck button pad (optional

4.1.- COUPLING/UNCOUPLING OF TRACTOR TRUCK

COUPLING OF TRACTOR TRUCK

- Put tractor truck closer in order to find the right alignment on the King Pin with the 5th Wheel.
If height on 5th Wheel matches with neck height, proceed to coupling under the standard procedure.
If height on 5th Wheel doesn´t matches with neck height, please level neck for a right coupling height, using landing legs before proceeding.

In case the lowbed has an Oscillating Neck, please level the neck hydraulically:

- Plug in connector NATO VG 96 917 that supplies the lowbed.

- Connect power supply activating the battery (fig. 4.4).
Next steps can be made either way from button pad over the (fig. 4.5) or with the remote control (fig. 4.3).

- Press button "⇓" to lower neck.
- Press button "⇑" to rise up neck.

- Disconnect power supply by deactivating battery disconnector (fig. 4.4).

Plug in all connections between tractor truck and lowbed.

TRACTOR TRUCK DECOUPLING

Unplug all connections between tractor truck and lowbed.

- Lower landing legs height till load is released from tractor truck.
- Proceed for coupling under the standard procedure.
- Move tractor truck away completely, on a straight line.

4.2.- DRIVING IN AUTOMATIC MODE

Vehicle will be driven in automatic mode by default. Rear wheels will turn following the path made by the tractor truck, using double hydraulic circuit and mechanical forwards with bars.

Battery disconnector (fig. 4.4) is placed on front left hand side over neck area, and has to be ALWAYS disconnected.

On front side of neck area, on left hand side, 4 manometers are placed (fig. 4.6) to monitor pressure on each hydraulic line. If any of them is under 10 bar pressure, pressurize circuit by pressing the white button located next to the pressure gauges

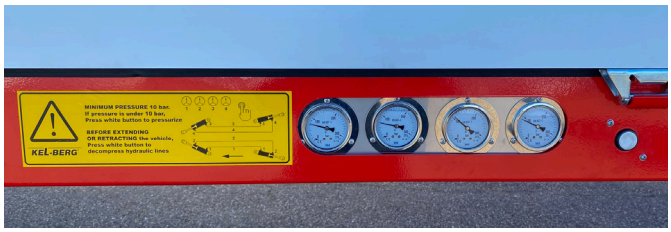
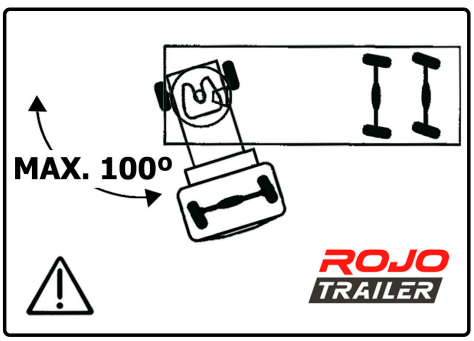


Fig. 4.6 Steering manometers

Do not exceed 100º of rotation of the tractor head



4.3.- DRIVING IN MANUAL

Manual steering cannot be operated if service brake or paking brake is activated.

Manual steering cannot be activated when vehicle exceeds 20 km/h.

- Connect power supply by activating battery disconnector (fig. 4.4)
Next functions can be done either from the button pad over neck area(fig. 4.2) or with the remote control (fig. 4.3).

- Press button ● to turn right.

- Press button ● to turn left.
To come back to automatic mode in vehicles without remote control:
- Align tractor truck with lowbed till light for front alignment is on. (fig. 4.7)

- Align rear axles by pressing button ● to turn right or button ● to turn left (as required) till light for rear alignment is on. (fig. 4.8)
To come back to automatic mode in vehicles with remote control:

- Press remote control buttons ● and ● simultaneously to activate auto alignment.
- Align truck with semitrailer driving at low speed for about 15 seconds until correct alignment.
If vehicle drives out of alignment repeat the operation.
- Disconnect power supply by deactivating battery disconnector (fig. 4.4).



Fig. 4.7 Light for front alignment



Fig. 4.8 Light for rear alignment

Check that when tractor and lowbed has been aligned, vehicle is moving properly following a straight-line.

4.4.- LOADING

Please make loading and unloading operations with caution. When loading, respect a right sharing of loads.

Load Center Point on the vehicle LC is marked on one of the sides of the main platform (fig. 4.9) by a stick. (fig. 4.10).

This stick marks the LC of the vehicle
And how LC moves forward every extension meter



Fig. 4.9 LC stick location

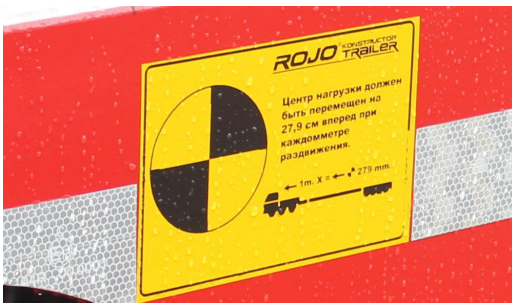
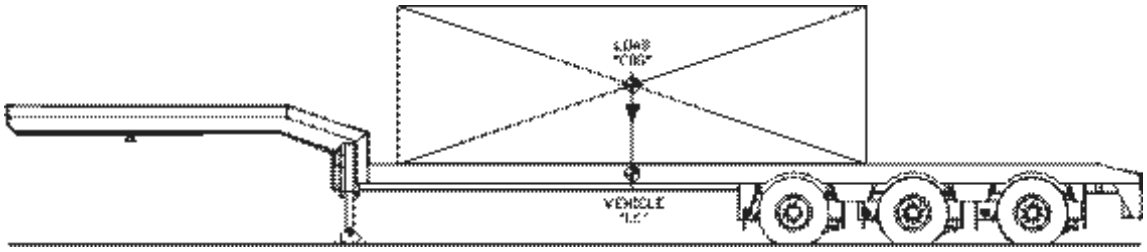


Fig. 4.10 LC Indications

To ensure a right share of the load, we have to match the load Centre of Gravity CDG with the Load Center Point LC of the vehicle.



Consult specific load graphs for extended vehicle loads and offsets of the CDG.

Respect maximum loads for lashing rings (fig. 4.11).

Check lashing rings registration (fig. 4.12).



Fig. 4.11 Lashing rings



Fig. 4.12 Lashing rings registration

4.5.- SPREAD OUT/ HIDE IN EXTENDABLE BEAM (OPTIONAL)

Spread in and out platform when there is no load on it.

before extend/retractDepressurize hydraulic lines by pressing the white button located next to the pressure gauges.

Block platform axles before starting this operation.

Make this operation softly and keeping an eye over the platform perimeter.

When you pull on the extendable beam, please check that any object or person is in the free area between platforms.

- Connect the auxiliary blocking coil (fig. 4.13) to the quick plugs-in (fig. 4.14) on every extendable beam, to act over each of them.

- Open blocking valve (fig. 4.15) checking batons movement (fig. 4.17) to ensure that the 2 blockings are released.

- Spread out or pull inside the extendable platform to the required measurement, using tractor drawbar pull traction smoothly.

- Lock the blocking valve (fig. 4.16) checking batons (fig. 4.17) go back to its original position to ensure that both blockings are closed.

- Unplug and take away the auxiliary blocking coil.

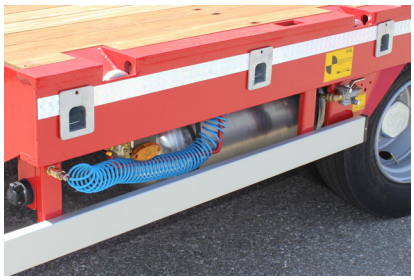


Fig. 4.13 Blocking coil

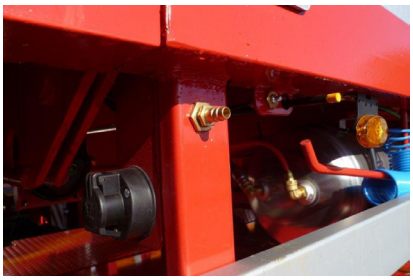


Fig. 4.14 Quick blocking plug-in



Fig. 4.15 Opened blocking valve



Fig. 4.16 Closed blocking valve

Before driving, please check that all blocking batons (fig. 4.17) are inside vehicle profile to ensure that all blockings are conveniently locked.



Fig. 4.17 Blocking baton

4.6.- LIFTABLE FRONT AXLE (OPTIONAL)

Control of lifting axles is automatic and depends on the load carried. Switch (fig. 4.18) is used to disconnect the automatic lift exceptionally.

Switch has to be ALWAYS in "I" position (fig. 4.19).

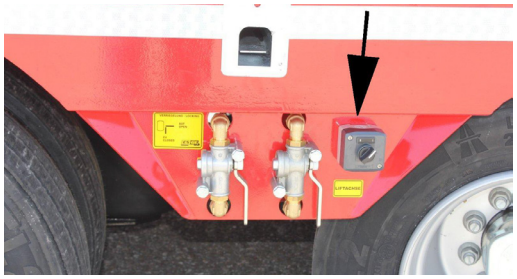


Fig. 4.18 Lifting axle switch



Fig. 4.19 Switch in "I"position

Disconnect switch (position "0") ONLY in exceptional cases, out of public roads.

4.7.- UP / DOWN LOADING PLATFORM

Driving out of ride height is only permitted up to 10 Km/h just to avoid some obstacles on the road, but only occasionally.

Loading Platform can go up and down using the Up&Down pneumatic valve (fig. 4.20).
- Turn lever right and left to raise or lower platform height.
- Turn the lever to its central position to automatically return to ride height.



Fig. 4.20 Up&Down Pneumatic valve

Once we pass the obstacle, immediately return to ride height pressing out the lever.

In case the unit is equipped with Oscillating Neck, loading platform will be levelled raising or lowering neck.
- Connect power supply activating the battery disconnector.

Following functions can be made either from the button pad over neck area (fig. 4.21) or with the remote control.



Fig. 4.21 Oscillating Neck button pad

- Press button "⇓" to lower neck so that platform is raised to be levelled.
- Press button "⇑" to rise neck height so that platform height is lowered to be levelled.
- Disconnect power supply by deactivation of battery disconnector.

4.8.- UP / DOWN RAMPS (OPTIONAL)

It is forbidden to stay under or near the ramps during this operation. Risk of crushing damages on persons or objects if ramps fall down.

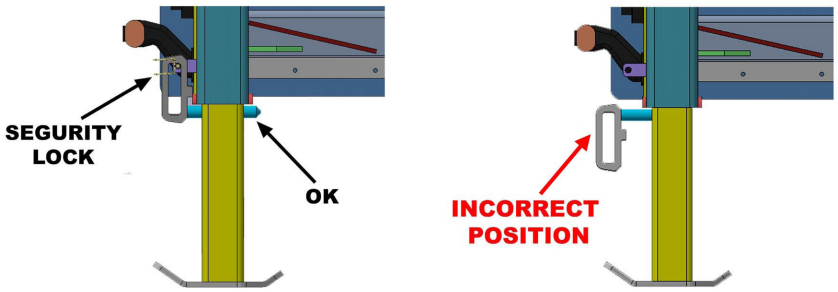
Before operating ramps, release security cable on the ramps (fig. 4.22) and lower ramp supports (fig. 4.23).



Fig. 4.22 Ramp security cable



Fig. 4.23 Ramp supports



Ramps can be operated by means of distributor levers + a power button (fig. 4.24).
Lever 1 (fig.4.24) is used to up and down ramps.
Lever 2 (fig.4.24) is optional for left ramp side displacement.
Lever 3 (fig.4.24) is optional for right ramp side displacement.
Power button 5 (fig.4.24) is used to switch on the pump.

- Follow stick indications.

Once finished this operation, fasten ramps with security cable (fig. 4.22) and upload ramp supports (fig.4.23).

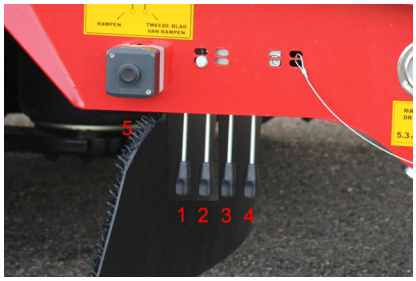


Fig. 4.24 Ramp controls

4.9.- SELF-STEERING AXLE (OPTIONAL)

Self-steering axle is automatically blocked when driving backward.

Check axle blocking before driving backward.

It is also automatically blocked when driving forward above 40 Km/h and released under 35 Km/h.
However, you can block it permanently driving forward and backward by means of manual switch (fig. 4.25) in position “I” (fig. 4.26)

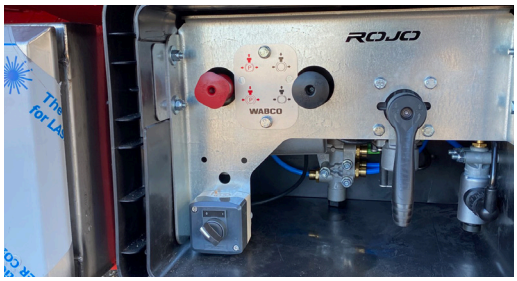


Fig. 4.25 Axle blocking switch



Fig. 4.26 Switch in “I” position

To drive with self-steering axle disconnect blocking switch (position “0”).

4.10.- PULL OUT / IN HYDRAULIC SIDE PLATFORMS (OPTIONAL)

It is forbidden to stay under, by or near the hydraulic platforms during this operation. Risk of crushing damages on persons or objects.

Platforms can be operated by means of distributor levers (fig.27) and optionally by a remote control.
Lever 1 (fig.4.28) is used to pull out / in front platforms.
Lever 2 (fig.4.28) is used to pull out / in rear platforms.
Power button 3 (fig.4.28) is used to switch on the pump.

- Follow stick indications.



Fig. 4.27 Platforms controls situation

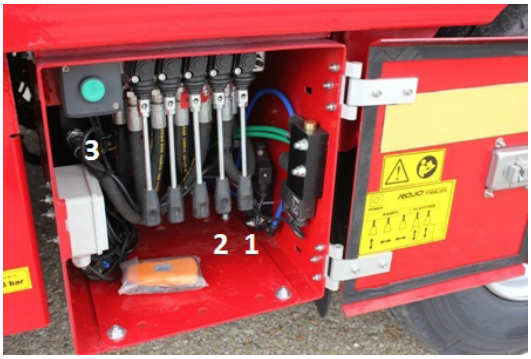


Fig. 4.28 Platform controls

5.- MAINTENANCE

5.1.- MAINTENANCE SCHEDULE

First 1.500 Km: Check steering alignment. General retighten nuts. Purge oil circuits.
Monthly: visual examination and greasing of steering slew rings.
Every 6 months: brakes camshaft greasing. Purge oil circuits. General retighten nuts.
Yearly: axle bearing greasing and brake levers. Check carbon brushes of the electro pump. Check steering alignment (see chapter 6.5).
Every 2 years: Change oil.

5.2.- VISUAL INSPECTION AND MONTHLY GREASING

– Do coupling between tractor truck and semitrailer and connect the electric system.
– Check all possible leaks on pipes, hoses and hydraulic couplings and joints.
– Grease slew rings directly over its greasing nipples, and the rest though their respective greasing plates (fig 6.1.) located on neck. See greasing chart on page 5.

Pump grease over oilers till fresh grease starts to come out.

– Make a brief tour, turning right and left, to check that wheels turn perfectly in automatic mode.



Fig. 6.1 Greasing nipples plate on neck



Fig. 6.2 Rear steering slew rings greasing nipples

5.3.- ANUAL Maintenance plan for SAF axles

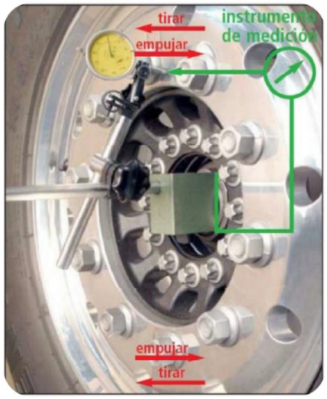
MAINTENANCE TASKS ON THE AXLE	After first 1000 km	Every 3 months or 30000 km	Every 6 months or 75000 km	Every 12 months or 150000 km
Check the wheel hubs (grease leaks, noise, looseness)				X
Check the brake system: -Brake pads / brake shoes wear -Condition of the brake disc / brake drum- Check the mobility of the brake calliper guide system and the condition of the outer boots- Check brake camshaft and automatic slack adjuster travel		X		
Check diaphragms and Torpres lifters Check the condition of shock absorbers and steering stabilizers Check the condition of brake chambers and brake actuators Grease the bearing support points of the knuckle on self-steering and steering axles				X
Check the bolted connections of the axle with the prescribed torque. Suspension bellows, suspension arms, suspension mounting brackets, and clamps	X		X	

NOTE! **Danger of serious traffic accidents that can result in severe injuries or death.**

- Maintenance work will be carried out in specialized workshops duly authorized and by adequately trained personnel for this purpose.
- For vehicles subjected to extreme service conditions, such as OFF-ROAD or CONTINUOUS SHIFTS, maintenance intervals will be shortened from 12 months/150,000 km to 6 months/75,000 km.
- Non-compliance with maintenance or installation instructions will exempt from warranty rights in case of any kind of issue.

Wheel hub inspection

Check for looseness in the wheel bearings

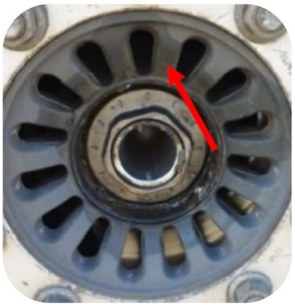


1.Lift the wheel. Do not disassemble!
2.Carefully remove the hubcap.
3.Check the tightening torque of the hub nut (900 Nm).
4.Place the dial gauge as shown in the photograph
5.Pull and push alternately to tilt the wheel. Perform the check throughout the entire range of rotation.

If a tilt play greater than 0.22 mm is obtained, replace the wheel hub!

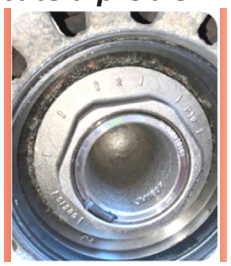
ABS Check the EBS fault records related to wheel sensors. Intermittent signal failure or reading failure may indicate a problem in the wheel hub due to play.

Check for grease leaks



1.Visually inspect the exterior appearance of the hub ventilation channels. If they are stained with grease, it would indicate that all the internal grease of the bearing has been expelled and it is “dry”.
2.Carefully remove the hubcap.
3.Check for any grease leakage inside. If present, it would indicate that all the bearing grease has been expelled.
There may be a small amount of grease around the seals. This situation is normal and does not indicate a problem.


SITUATION OK


SITUATION NO OK



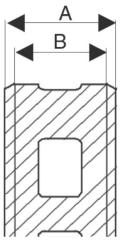
Bearing noise check

1.Lift the wheel. Do not disassemble!
2.Carefully remove the hubcap.
3.Check the tightening torque of the hub nut (900 Nm).
4.Rotate the wheel in both directions (slowly and quickly).
5.If the wheel does not turn smoothly and/or if a “grinding noise” is heard, hub replacement will be necessary.
Noises can also originate from the brakes. Therefore, we advise performing this check by removing the brake pads

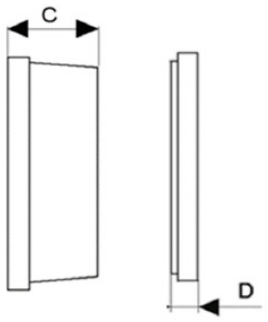
Brake wear check

Disk Brake

Measures of break disk wear disk brake		
Ø(mm)	«A»new (mm)	«B» The wear limit has been reached (mm)
430	45	37
377	45	37

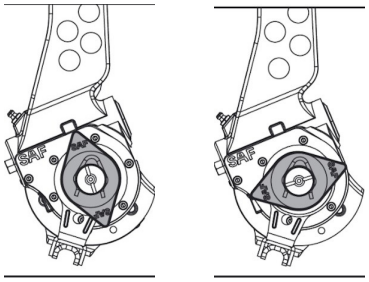


Brake pad wear measurements					
«c»new (mm)			«D» The wear limit has been reached (mm)		
Disk brake pad Ø 430					
Haldex	Wabco	Knorr	Haldex	Wabco	Knorr
30	32	30	13	11	9
Disk brake pad Ø 377					
Haldex	Wabco	Knorr	Haldex	Wabco	Knorr
30	32	30	13	11	9

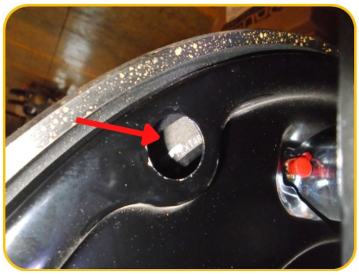


Drum brake

Checking the condition of the brake shoes by removing the inspection plug. The minimum permissible
wear value is indicated by the set of numbers painted on the shoe.



NEW WORN



DRUM WEAR MEASUREMENTS		
Brake dimensions	Ø original	Ø Maximum allowable wear
SNK 300 X 200	Ø 300	Ø 304
SNK 367 X 180	Ø 367	Ø 372
SNK 367 X 200	Ø 367	Ø 372
SNK 420 X 180	Ø 420	Ø 425
SNK 420 X 200	Ø 420	Ø 425



Additional checks

Diapers / Torque lifters





- Visually inspect the condition of the diaphragm rubber.
- Ensure there are no air leaks.

Shock absorbers and stabilizers



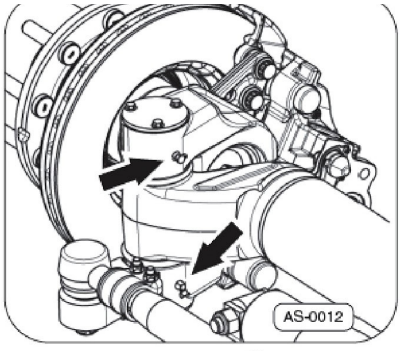

- Check the condition of the shock absorber.
- Ensure there is no oil leakage.

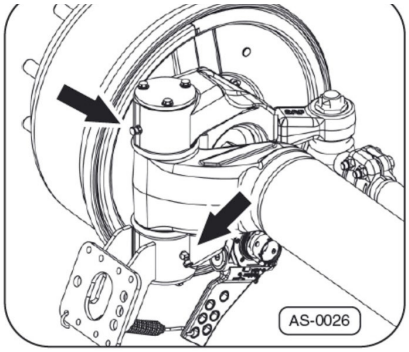
Brake chambers and actuators

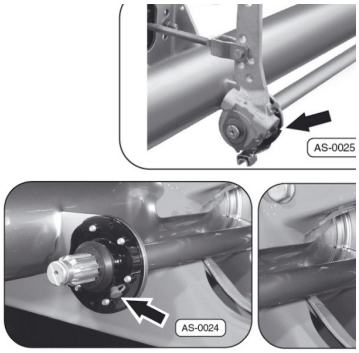



- Check for any air leaks in the brake and parking chamber.
- Visually inspect the push rod and dust boot.

POINTS TO GREASE





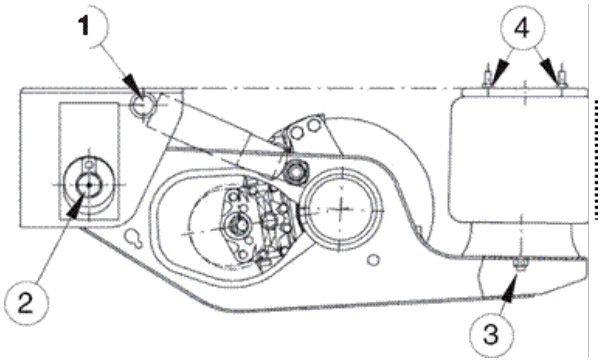


NOTE! To prevent premature wear:

- ***Use exclusively lithium-based lubricant. Ref. 05 387 0031 04***
- ***Apply grease with the vehicle unloaded.***
- ***Do not apply grease to other points not prescribed***

Verification of tightening torques

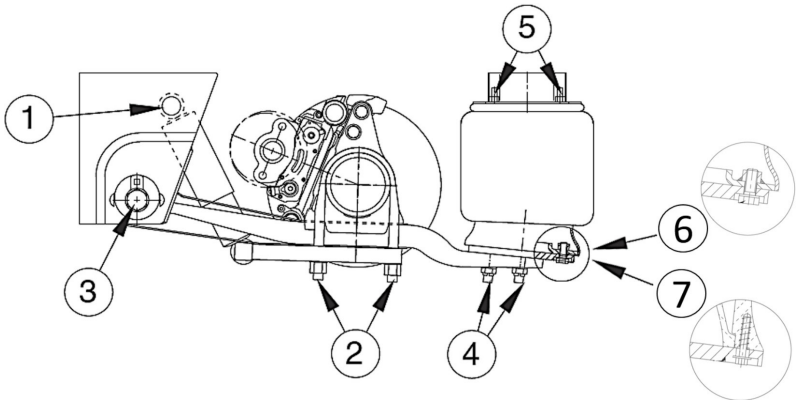
SAF INTRA



Pos.	Unión atornillada	Par de comprobación (Nm)	Boca de llave
1	M20x1,5	600	30
2	M30	1200	46
3	M16	80	24
4	M12	40	19

NOTE! For aluminum and stainless steel fastening brackets, check bolted joints 1 - 2 every 6 MONTHS

SAF MODUL



Pos.	Bolted joint	Verification torque(Nm)	Wrench socket
1	M24x2	400	36
2	M22x1,5	580	32
3	M30	1200	46
4	M20	180	30
5	M12	40	19
6 (2)	M12	80	19
7 (3)	K100x40	20	10

(2) In the case of a steel piston
(3) In the case of a plastic component

Maintenance plan for SAF axles Check List

> Wheel hubs

Grease leaks				
	LEFT		RIGHT	
	YES	NO	YES	NO
1º axle	□	□	□	□
2º axle	□	□	□	□
3º axle	□	□	□	□
4º axle	□	□	□	□
5º axle	□	□	□	□

Noises or play in the bearings				
	LEFT		RIGHT	
	YES	NO	YES	NO
1º axle	□	□	□	□
2º axle	□	□	□	□
3º axle	□	□	□	□
4º axle	□	□	□	□
5º axle	□	□	□	□

Brake system condition

Checking the condition of brake pads / shoes				
	LEFT		RIGHT	
1º axle				
2º axle				
3º axle				
4º axle				
5º axle				

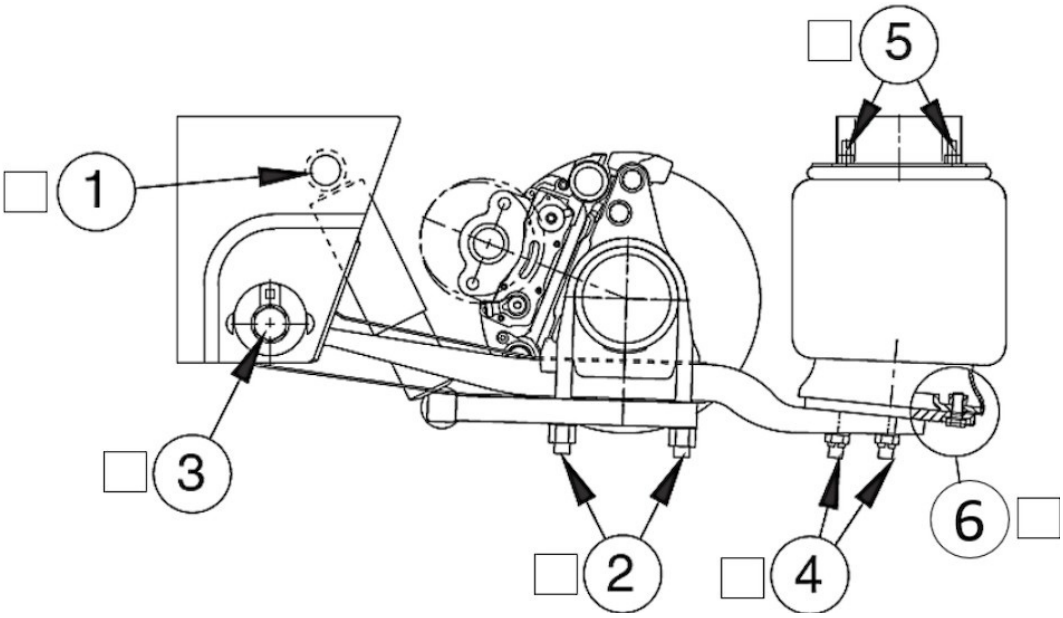
Checking the condition of brake discs / drums				
	LEFT		RIGHT	
1º axle				
2º axle				
3º axle				
4º axle				
5º axle				

Otras comprobaciones

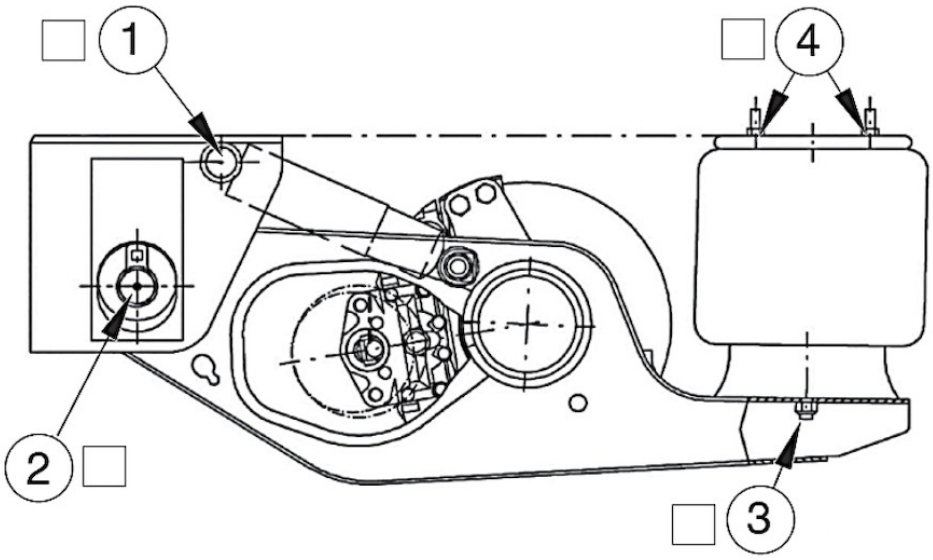
Component	Check	Yes	No	1I	1D	2I	2R	3I	3D
diaphragms	Extension/Compression	□	□						
	Cracked diaphragm	□	□						
	Wear due to friction	□	□						
	Air loss	□	□						
Shock absorbers	Oil loss	□	□						
	Damaged body	□	□						
Chambers and actuators	Air loss	□	□						
	Damaged push rod or dust boot	□	□						

Tightening torques

SAF MODUL



SAF INTRA



5.4.- OIL CHANGE

Place tractor+lowbed perfectly aligned and loading platform in horizontal position.

Service and parking brakes must be released. Block wheels of tractor truck with wheel chocks.

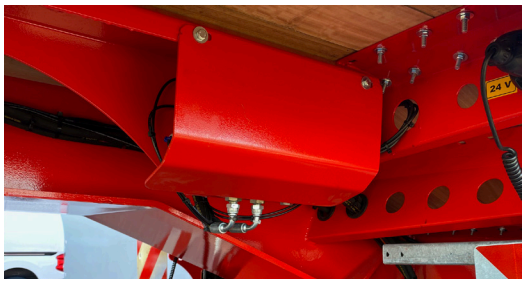
HOW TO EMPTY CIRCUITS

Please be sure that no pressure is left inside the circuits.

REDUCE PRESSURE ON OSCILLATING NECK CIRCUIT (In case the unit is fitted with Oscillating Neck):
- Open cylinders so that they are fully displayed.
- Open neck circuit bleeders.

REDUCING PRESSURE ON STEERING CIRCUITS:
- Disconnect power supply by deactivating battery disconnector.
- Leave a tub under connections D1D, D1T, D2D, D2T, D3D, D3T, D4D, D4T, SUSPA, SUSPB behind valve pack (fig. 6.3).
- Pour oil inside this tub, disconnecting the connectors pipes D1D, D1T, D2D, D2T, D3D, D3T, D4D y D4T. Do same operation with connectors SUSPA, SUSPB if vehicle is fitted with an Oscillating Neck (fig. 6.3).
- Open all cylinder bleeders and keep filling the tub with all the oil that comes out of the cylinders and circuits.

Once the oil has completely taken out of the system:



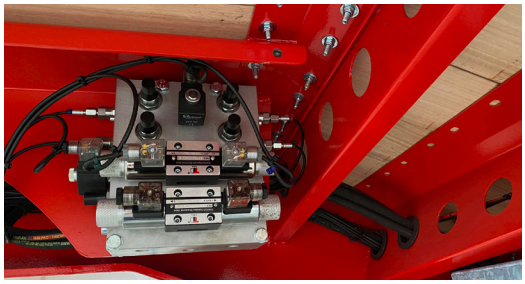


Fig. 6.3 Empty oil inside the circuits

- Connect back all connector pipes D1D, D1T, D2D, D2T, D3D, D3T, D4D, D4T, SUSPA y SUSPB.
- Close all the bleeders.

OIL FILL IN AND PURGE

See oil charts on page 6. It is not permitted to mix different oil types neither to fill in the system with biodegradable oil without previous written authorization from ROJO.

FILL IN MAIN STEERING CIRCUIT

- Take out cap from oil tank and fill in with hydraulic oil under specs.
- Connect power supply by activating battery disconnector.
- Pump oil till it reaches the right pressure level.

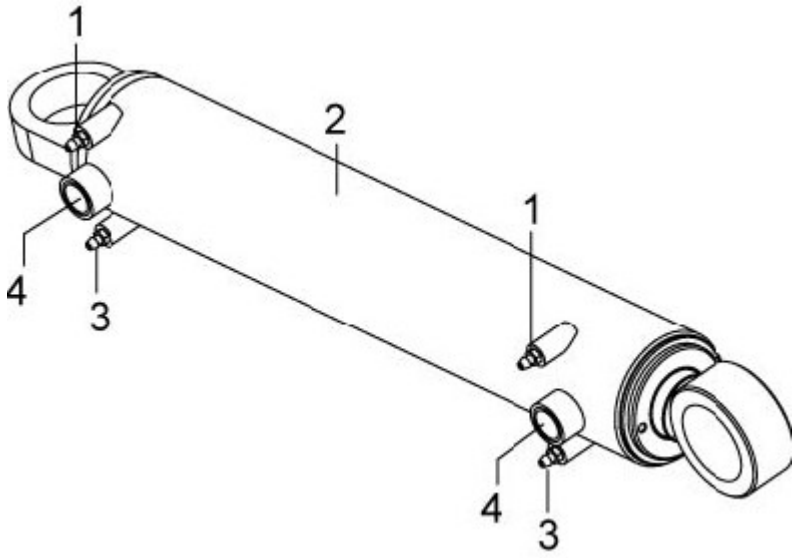


Fig. 6.5 Steering cylinders

FILL IN AND PURGE RIGHT SIDE CIRCUIT:

- Open upper bleeders (1, Fig. 6.5) on rear right steering cylinder.
- Check that lower bleeders (3, Fig. 6.5) and bleeders from the rest of the steering cylinders are locked.

- Press button ●.
Electro pump will start pumping oil to right side circuit.
- Close rear right steering cylinder bleeders, once oil starts to come out from them.
- Open upper bleeders (1, Fig. 6.5) on front left hand side steering cylinder.

- Keep pressing button ●.
Electro pump will keep pumping oil to right side circuit.
- Close front left hand side steering cylinder bleeders, once oil starts to come out from them.

- Release button ●.
Right side circuit is filled in and purged.

FILL IN AND PURGE LEFT SIDE CIRCUIT:

- Open upper bleeders (1, Fig. 6.5) on rear left hand side steering cylinder.
- Check that lower bleeders (3, Fig. 6.5) and bleeders from the rest of the steering cylinders are locked.

- Press button ●.
Electro pump will start pumping oil to left hand side circuit.
- Close rear left hand side steering cylinder bleeders, once oil starts to come out from them.
- Open upper bleeders (1, Fig. 6.5) on front right hand side steering cylinder.

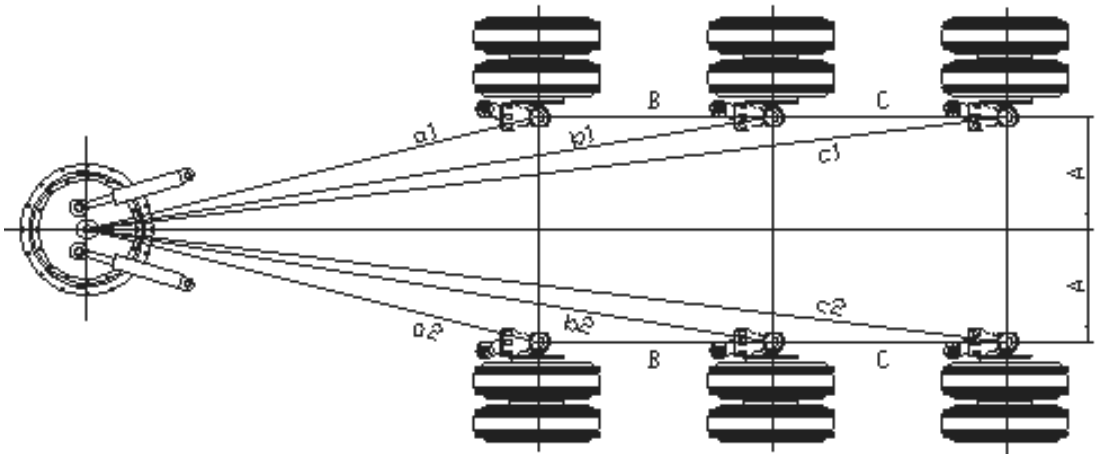
- Keep pushing button ●.
Electro pump will keep pumping oil to left side steering circuit.
- Close front right hand side steering cylinder bleeders, once oil starts to come out from them.

- Release button ●.
Left side circuit is filled in and purged.

FILL IN OSCILLATING NECK CIRCUIT (In case the unit is fitted with Oscillating Neck):

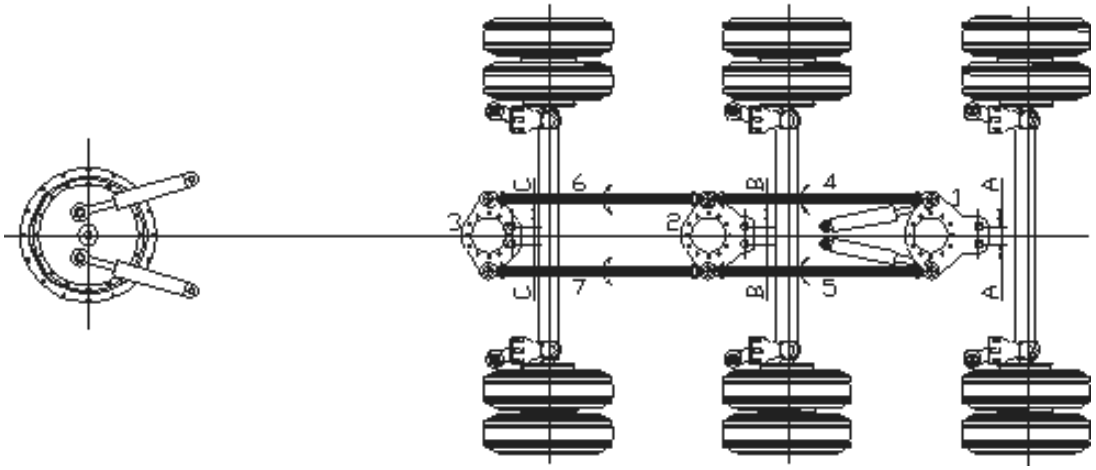
- Press button "⇑", till it get to minimum length displayed over the cylinders.
- Press button "⇓", till it get to maximum length displayed over the cylinders.
- Press button "⇑", to nominal riding height.

5.5.- STEERING ALIGNMENT (tri-axle trailer is shown as example)



AXLE ALIGNMENT

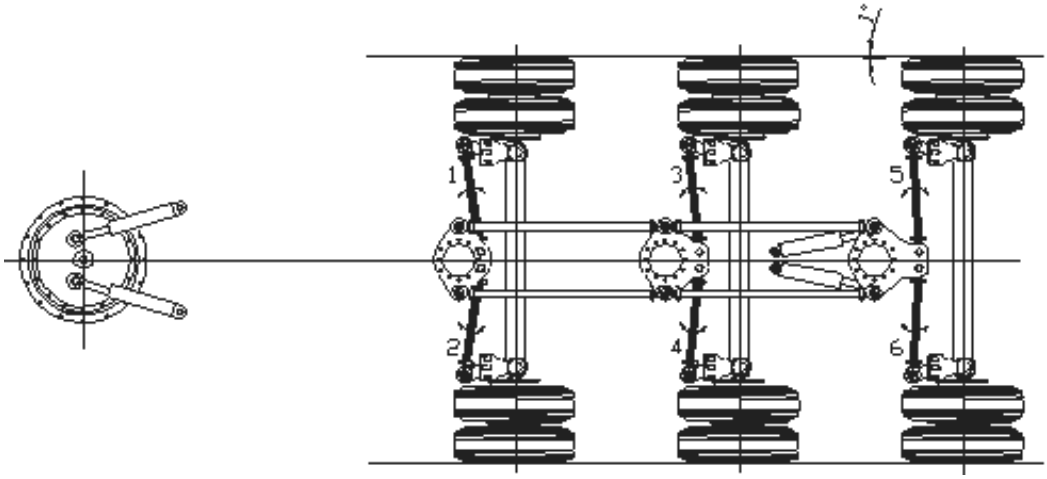
- Check distance A in all axles. (center of left-side swivel axle to chassis centerline = center of right-side swivel axle to chassis centerline.
- Check 1st axle distance a1 = a2. (center of kingpin to center of left-side swivel axle = center of kingpin to center of right-side swivel axle)
- Check 2nd axle distance b1 = b2. (center of kingpin to center of left-side swivel axle = center of kingpin to center of right-side swivel axle)
- Check 3rd axle distance c1 = c2. (center of kingpin to center of left-side swivel axle = center of kingpin to center of right-side swivel axle)



STEERING PLATES ADJUSTMENT

- Check steering plate 1 distance A = A (center of left-side link bolt of steering plate to chassis centerline = center of kingpin to center of right-side link bolt of steering plate)
- Check steering plate 2 distance B = B (center of left-side link bolt of steering plate to chassis centerline = center of kingpin to center of right-side link bolt of steering plate)
If necessary, adjust steering bars 4 and 5 length by turning it to the left or right.
- Check steering plate 3 distance C = C (center of left-side link bolt of steering plate to chassis centerline = center of kingpin to center of right-side link bolt of steering plate)
If necessary, adjust steering bars 6 and 7 length by turning it to the left or right.

TRANSVERSAL BARS ADJUSTMENT



Adjust transversal bars chassis at driving height

– Align steering baton on kingpin.
– Align steering baton on axles.
– Check wheels alignment with 1º toe in.
If necessary, adjust steering bars (1-6) length by turning it to the left or right.

ALIGNMENT INDUCTORS ADJUSTMENT

Steering system should be correctly aligned before adjust inductors.

Once steering system is correctly aligned we have to adjust front (inside the neck) and rear (in front of the last axle) inductors independently.
Following instructions for each inductor:
– If green light is set on, move inductor out until green light sets off. Then move inward just until it sets on.
– If green light is off, move inductor inward just until it sets on.

All inductors should be in the position just when green light sets on.



Fig. 6.6 Front inductors inside neck

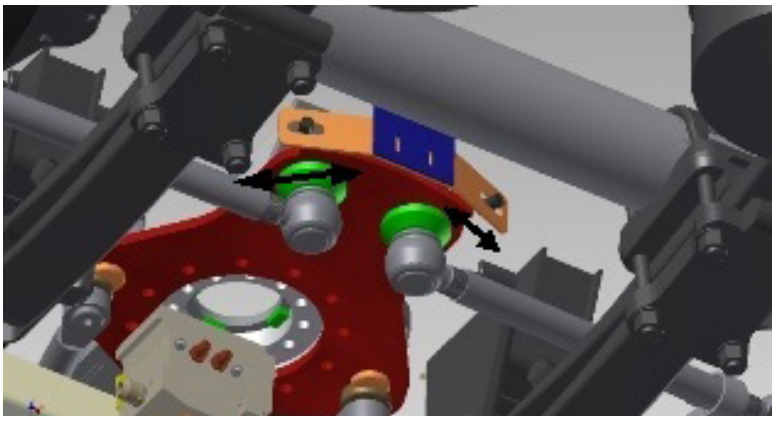


Fig. 6.7 Rear inductors in front of last axle

6.- TROUBLESHOOTING

PROBLEMS WITH HYDRAULIC SYSTEM

Lowbed goes to left or right depending on unevenness of the terrain.	
Possible causes	Troubleshoot
Too low pressure on steering circuit	Pressurize circuit by pressing the white button. Check that there are no leaks on the circuit.
Mechanic set	Check bars, cylinders and turning levers.

Semitrailer always turns to the same direction (left of right) in comparison with tractor truck tread	
Possible causes	Troubleshoot
Too low pressure on the steering circuit.	Pressurize circuit by pressing the white button. Check that there are no leaks in the circuit.
Air inside hydraulic circuit.	Purge circuits.
Leak along any steering cylinder rod.	Replace cylinder.
Internal leaks in steering cylinder.	Replace cylinder.
Same pressure in both camshafts of steering cylinder.	Faulty joints. Replace cylinder.

Hydraulic circuit loses pressure frequently	
Possible causes	Troubleshoot
Oil level in tank is too low.	Check external leaks in the hydraulic system. If they are found, repair them and in every case refill and purge the circuit.
Leaks on hydraulic steering circuit.	Make a driving test and check if any circuit is leaking. In case you detect leaks, repair and in every case refill and purge circuit.
Leaks in any part of the hydraulic frame.	Contact ROJO to replace hydraulic frame.
Significant changes in ambient temperature. Oil contracts with cold and expands with heat.	Pressurize circuit by pressing the white button.

PROBLEMS WITH THE ELECTRIC SYSTEM



It is not allowed in any case, to manipulate or cut any installed cable to change its length. It can lead to damages or interfere in the right functioning of the system.

Problem	Possible cause / Troubleshoot
There is no electric supply.	Check electric supply from tractor truck.
Remote control is not working.	Unloaded batteries / Change batteries
Damaged fuse.	Change fuse.
Rusted connectors	Disconnect, clean connectors or replace the whole wire and connect back. Contact ROJO to replace wire.
Wiring Short-circuit	Contact ROJO to replace wire.
Electropump is not working	Damaged relay / change damaged electropump / Contact ROJO for replacement



PAY ATTENTION TO MAINTENANCE, GREASING,..ETC. OVER THE AXLES. THIS IS SHOWN IN THE MAINTENANCE BOOK WE ENCLOSE.



IT IS IMPORTANT TO DO FIRST MAINTENANCE OVER ALL BOLTS OF FIXATIONS AND BOLTS, RIGHT AFTER FIRST TRANSPORT WITH LOAD ON THE SEMITRAILER.



90% OF PROBLEMS ON AXLES AND SUSPENSIONS ARE ORIGINATED BY LACK OF TRACKING AND FOLLOW UP OF THESE INSTRUCTIONS. NOT FOLLOWING THE INSTRUCTIONS IT WILL CONSIDER A USE MALFUNCTION , AND WILL FORCE TO VOID WARRANTY FOR THE UNIT.



IMPORTANT: AFTER 1ST CHECK-UP, THE INSPECTION FORM SHEET HAS TO BE FILLED IN AND SIGNED, AND SEND EMAIL TO : service@rojotrailer.com, ATTACHING THE TECHNICAL DATA SHEET.

IN CASE OF DOUBT OR IF YOU NEED ANY FURTHER INFORMATION ABOUT MAINTENANCE, PLEASE CONTACT OUR AFTER-SALES DEPARTMENT Tlf. +34 947 54 64 11.