ROJO TRAILER

AluHARD® 500



USER GUIDE

ROJO TRAILER



ROJO TRAILER

ISO 9001
BUREAU VERITAS
Certification

ROJO TRAILER S. L.
Parcela 1/ Sector 2- Pol. Ind. Alto Milagros
09460 Milagros (Burgos) Spain
info@rojotrailer.com

(34) 947 546 411

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1- GENERAL NOTICE

This symbol will always accompany the instructions to prevent any material damages to the equipment, personal injuries or danger situations.

1.1- Manufacturer's responsibility

It is against the operating rules described for the tippers and accessories, not considering the notes and warnings appearing in this guide, the full or partial inappropriate use of the tipper, using non-authorized spare parts, and using the tipper by non-qualified personnel. ROJO TRAILER S.L. refuses any responsibility due to material or personal damages.

1.2- Regulations

This guide has been written according with the instructions described in the annex "1" of the directive 2006/42/CE, point 1.7.4.

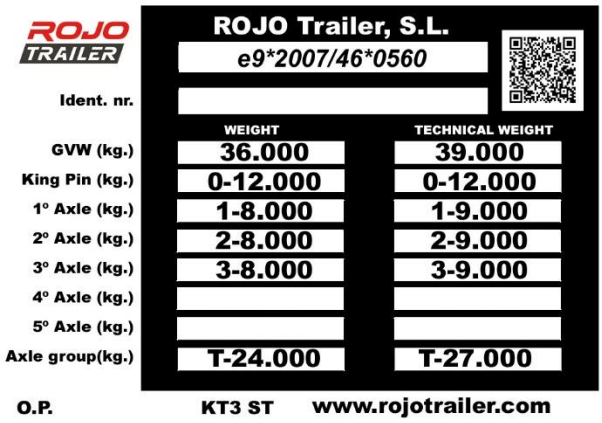
1.3- Keep the certificate and user's guide

This guide is a part of the machine, keep it for future references.

1.4- Vehicle identification:

To request of spare parts, some information and assistance, each vehicle is equipped with a plate on which appears, among other things, the vehicle serial number "Ident.nr.".

It also has a QR code through which you can access to the user manual for your vehicle.



This plate shall be placed on the front part of the frame right beam of the chassis or on other similar structure of the machine.

Observe the following picture.

2- DESCRIPTION AND LIMITS

2.1- Vehicle description:

ROJO tippers are designed for goods transport, loading and unloading by a tipping body. The operation of these vehicles is the same, without any substantial change but of those construction elements of the semi-trailer and measures or the quantity of axles (all these elements will not affect the performance and efficiency of the tipper).

2.2- Usage:

Intended use of the machines: transporting and unloading by the tipping system of the semi-trailer, for all type of bulk goods.

Transport: Industrial semi-trailers pulled by a tractor unit. The maximum speed for this kind of mixed vehicles (tractor + semi-trailer) is: 100 km/h.

Tilting: This equipment has been designed to be used by only one operator. It will always be operated from the driver's position in the tractor unit and the vehicle danger area will never be crossed (rear part).

Do not tilt in front in the presence of people close to the working area or in contact with any point of the semi-trailer.

2.3- Incorrect use:

Any use non-described in this guide will be considered inappropriate. It will not be used to load any different materials of the ones here described, as well as any machines, structures, people or animals.

It is not allowed loading on the semi-trailer more than the maximum permissible laden weight according with the design and homologated for this model.

3- SAFETY AND GENERAL WARNINGS

- The inappropriate use of the tipper, as well as not respecting the security rules can cause serious consequences for the staff and/or material.

BEFORE ITS USE:

-Read carefully the guide

-Get informed about the sector security rules in force

-Do not modify the cylinder pressure valve

-Before tilting, make sure that there aren't any obstacles, electric cables, ceilings etc. If it can be any contact with a power line, low the vehicle immediately, avoiding any contact between the floor and the vehicle.

-Make sure that there is not anyone on the vehicle's way.

-Before driving, make sure that the breaks, connections, and lighting are operating properly

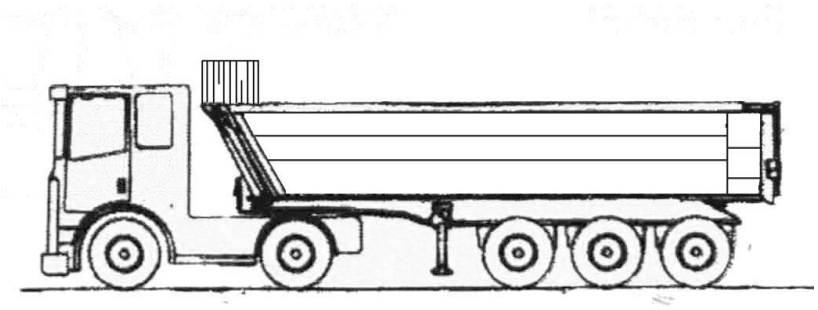
-Do not transport people in the semi-trailer

DURING OPERATION:

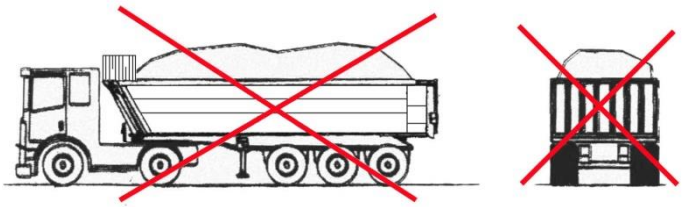
The tipper was designed to be used by only one operator. The operator position will always be into the truck cab while it is tilted, or on the left side of the tipper for other operations.

When it is operated on a public road, the vehicle must be duly signaled, and it is compulsory wearing reflecting clothes.

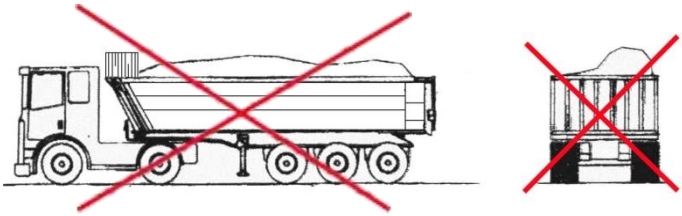
Before tilting or loading, remove the tarp.



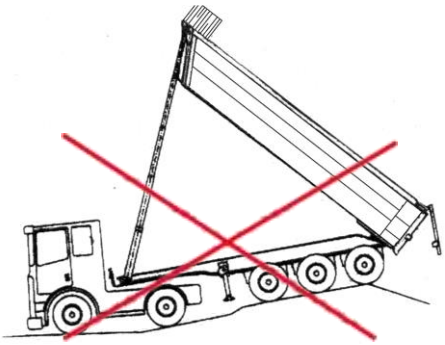
Do not overload the vehicle



Divide the loading uniformly to avoid overloadings.



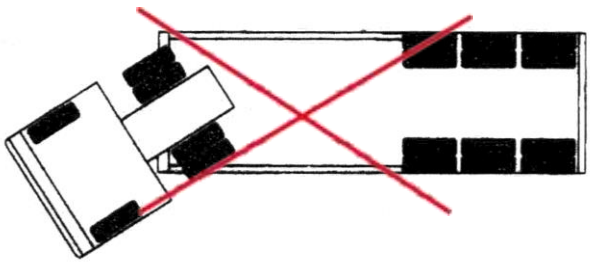
Do not tilt on irregular or soft surfaces.



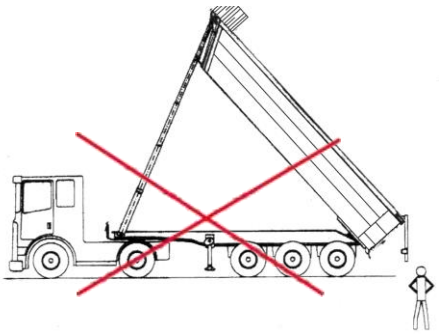
No bascular el vehículo inclinado lateralmente



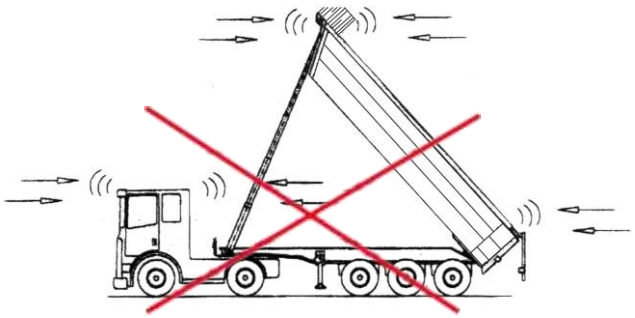
Do not tilt with the truck unit and the semi-trailer at an angle.



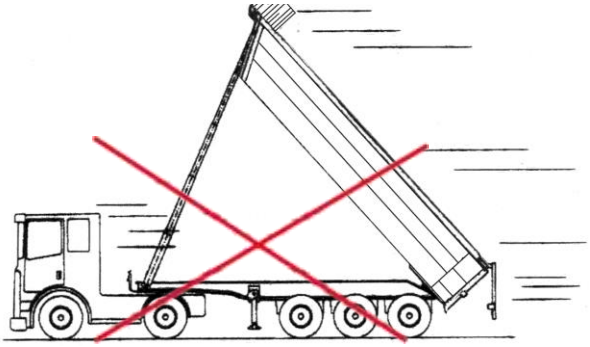
Do not stand in the operation area



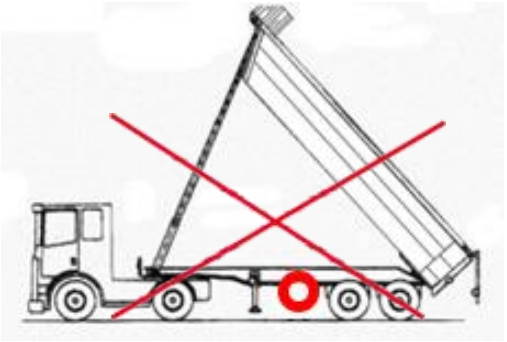
Do not move the vehicle while tilting.



Do not drive with the box lifted



Do not tilt with the axes lifted.



Stop the unloading, if the charge doesn't begin to be unloaded on halfway (20º or 25º),

Maintenance and controls:

Before doing any operation, read the instructions and advices of this manual.

- Wear the individual security equipment.
- Careful with the liquids under pressure, protect the hands and the body.
- To avoid any risks, low the hydraulic system and other systems pressure
- In order to do any welding in the tipper, disconnect the electronic equipment and do not put any mass on the hydraulic elements. Put the mass as close as possible to the welding area. Do not do the welding close to the wheels; if it needs to be done, cover them or disassemble them.
- Grease periodically the tipper joints for its proper operation.
- **DO NOT WORK UNDER THE TIPPER WITHOUT ANY SECURITY SUPPORT IN CASE THE BOX WILL GO DOWN AND BLOCK THE HYDRAULIC SYSTEM.**
- For the maintenance operations, respect the proceeding for labour health and safety risks.
- Respect the advices for the environment preservation.

Wear individual protection clothes



Do not use loose clothes, use tight working clothes.



Safety shoes



When handling, disassembling, doing the maintenance, etc. Use working gloves



Use face masks if there is there is some dust.



If the noise is very loud (the noise in some workshops is louder than 80 dB (A)), wear a hearing protection equipment and close the doors and windows of the cabin to reduce the noise.

Safety Equipment

It is recommended having a first aid box and an emergency phone list in the cabin.

Respect the fire extinguishers usage rules. If there are some flammable materials, a fire extinguisher should be in the cabin.

4- ATTACHMENT WITH THE TRACTOR UNIT:

Before starting, make sure that there aren't any people or obstacles close.

- Make sure that the semi-trailer is braked (push the red pusher button).
- Approximate the tractor unit looking for a correct alignment of the King Pin and the 5th wheel.
- If the 5th wheel height corresponds with the neck height, attach according with the standard procedure.
- If the 5th wheel height doesn't correspond with the neck height, level the neck using, preferably, the tractor unit suspension.

Plug every connection between the tractor unit and the platform; hydraulic, electric, and pneumatic connections (FIRST THE YELLOW LINE).



5-LOADING AND UNLOADING

Loading and unloading on a levelled surface; make sure that the brakes are on before loading/unloading. Do not overload the tipper or the tractor unit; observe the technical data to know the capacities of each one.

Before loading, make sure that the doors are closed ant the accessories are tightened.

5.1- Loading process

Make sure the tilt control of the tipper, which are on the truck, is in the down position (open to tank). So the box rests directly on the chassis and not on the cylinder.

Follow the loader instructions, use rear-view mirror and maintain the visual contact to move the vehicle.

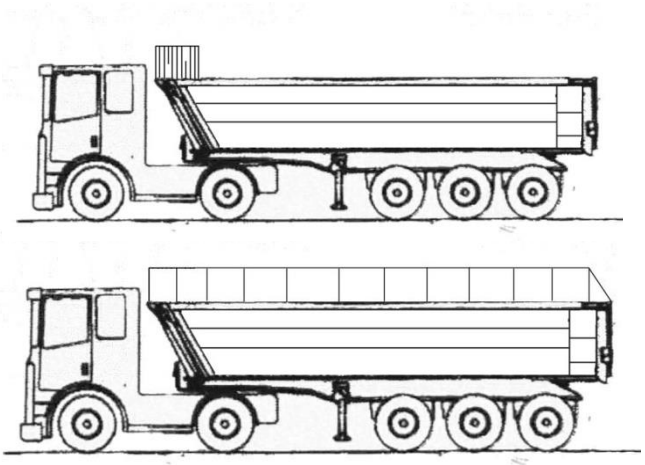
It is recommended making the loading with the driver in his position and the engine on.

Loading the trailer with the suspension depressurized can structurally damage the chassis.

When the loading has been done, make sure that there aren't any remains which can fall on the road and can cause an accident to a third party.

5.2- Tarp use

Before loading or unloading, the box has to be completely uncovered.



Do not drive the vehicle if there are strong gusts of wind. Drive always with the box completely covered.

Do not grease or lubricate the driving pulleys or the cables.

Do not use the tarp to level the material to be transported.

5.3- Door opening and closing

Open the safety bolts before tilting (if they are closed).



There are two doors models, oscillating or double door “book type”. Both of them with automatic opening of the lower claws, this opening can be mechanical or pneumatic.

The book type door, or Universal door, can be manually open on the vertical axle.

Before opening the book door, make sure that the goods are not making any pressure against the doors. Otherwise, an abrupt opening can happen, and it can be hit.



Stop the unloading process if the door is in contact with the unloading goods.

6- TILTING (Unloading):

PROCEED TO DO THE TILTING ONLY IF THE FOLLOWING CONDITIONS ARE FULFILLED:

- All the security conditions of the pages 3, 4 and 5 are met.
- Every connection in the tractor unit and in the semi-trailer is well done. Make sure that both hydraulic terminals are well connected and the oil flows properly.
- The group is on a stable ground, flat, leveled and that the axles are aligned.
- There is no one in the unloading area.
- There are not lateral winds.
- There is not any contact risk with high-tension wires or other objects.

Stop the unloading if the light or sound pilot is activated. IT IS TIPPING HAZARD.

The hydraulic equipment installed in the tractor unit has to send a maximum pressure of 150 bars to the semi-trailer.

6.1- Box tilting:

- Follow the truck-tractor manufacturer's instructions to activate the hydraulic system.
- Once the box has reached the maximum inclination (49º approx), put the hydraulic system in neutral or lowering position. **Never leave in the elevation position, as it can cause damage to the cylinder or safety valves.**

Do not accelerate the engine of the vehicle while the unloading is getting done, the revolutions range needs to be close to the idle speed.

7- DRIVING:

- Do not drive with the tipper up, under tipping hazard, collision with electrical lines, jumper cables.
- With the trailer loaded keep all axles lowered.
- Do not exceed the speed limit.
- Adapt the speed to the road conditions, the traffic and the weather conditions. Put tyre-chains if needed.
- After using the tipper, close the tarp and clean the vehicle to avoid any mood loosening or leaving any remains on the road.
- Before moving, make sure that the lights are clean and operating, they can be dirty.
- Some models are equipped with folding or retractable bombers, put in circulation mode before driving on public roads.



- Observe the loading height when passing under a bridge, a viaduct or tunnels.
- Do not put the vehicle into neutral to descend some hills, put a low gear depending on the hill and of the load. Using too much the brake on a hill can cause “Fading” in case of vehicle with drum brake, the drums will heat so much that they expand, and they will avoid a good braking on needed moments.
- Do not exceed the maximum permitted suspension pressure indicated on the sticker above the manometer

8- SEMI-TRAILER DISCONNECTION AND PARKING:

Follow the instructions to disconnect the trailer from the unit truck:

- Park the trailer on a flat surface.
- Put the parking brake of the trailer.
- Disconnect the hoses from the pneumatic, electric and hydraulic system.
- Raise the suspension of the tractor unit (if possible).
- Low the mechanic support until it will be on the floor, if necessary. The mechanical supports will have a “slow” position which will allow raising the 5th wheel of the tractor unit if it hasn’t got any suspension control. In this case, raise around 50 mm from the floor.
- Pull the lever to open the 5th wheel lock.
- Accelerate slowly the tractor unit ahead to disconnect.
- Unplug the connecting tubes of the electric and hydraulic pneumatic system.
- Remove the tractor unit from the trailer and remember to close all connections protection covers.

Disconnect every connection (hydraulic, electric or pneumatic) between the tractor unit and the platform (FIRST THE RED LINE).

9- MAINTENANCE/ REPAIR:

9.1- General warnings

IF THE MAINTENANCE TASKS ARE NOT REGULARLY DONE, A RISK OF THE TIPPER BREAKDOWN AND DANGER IN THOROUGHFARE WILL EXIST. IT WILL ALSO BE A RISK OF DAMMAGE OF THE TIPPER DRIVER.

While the maintenance is getting done, the safety warnings described on the section number 3 of this manual need to be respected, as well as every safety advise:

Stop the tractor unit motor and take off the key before doing any repair, cleaning or lubrication operation or while any maintenance task is getting done.

While the box is getting raised and the maintenance works between the chassis and the box are getting done, put a safety wedge between both.

9.2- Maintenance periods.

Everyday. Check visually the wheels fixing nuts, the tyres pressure and unwearing, the operation of the electrical system and the ABS or EBS system; this system provides any vehicle being more active safety and being more effective while breaking.

After driving 150 km and 500 km:

-Make sure that the wheel nuts are tightened.

This checking must be done each time that a wheel is removed. The tightening torque must be between 600 and 700 Nm.

After driving 1000 km:

-Tighten again the suspension and align again the axles (Annex 1).

- Retighten the wheel nuts.

Everymonth: Change the grease of the 5th wheel disk after the disk and KP cleaning. Clean every vehicle element to grease to warrant its proper operation.

Every 3 months: Check the pads condition for the disk brake. It can be controlled on the brake calliper, as it is indicated on the axle's maintenance manual. For drum brakes, the control is on the automatic brake levers.

Retighten the wheel nuts.

Every 6 months: Tighten again the suspension elements and clean the valves filters.

Once a year: Check the joints group and also the suspension tightening to warranty the good operation and align again the axles (Annex 1). Also the valves filters need to be clean.

These intervals have been considered for a normal use of the vehicle, so these periods would be shortened in case of using the vehicle under hard conditions.

In addition to basic checking, it is recommended doing an exhaustive inspection before any trip or if we think that it exists any malfunction.

Check the hydraulic installation of the tractor unit, specially the security valve and its tare, as well as the general condition of the oil, the terminals and the hoses.



The hydraulic equipment installed in the tractor unit, must send maximum pressure of 150 bar to the semi-trailer.

9.3- Particularities of the maintenance operations

GREASING:

- Before doing the greasing, clean the dust, water and dump.
- Inject the grease until the lubrication point will get out clean grease.
- Do not mix different Brand or specifications oils.
- Greasing points:
    - Lifting equipment joints (cylinders).
    - Mobile parts, hinges, bolts, springs, etc.
    - Hinges of the door and of the lower closures.
    - Turning point of the box with the chassis.

The trailer is delivered with grease "GR MU/EP 2", (lithium grease). Use the same or equivalent grease.

TRACTOR UNIT OIL TANK:

In order to check the oil level, the trailer need to be in horizontal position and the oil must be cold. If you want to add the oil, check that the cover and that the whole area are clean and check the hydraulic oil use according with the following basic information (for other specifications, ask the manufacturer).

DIN 51524 TEIL 2 HLP

ISO L-HM

GENERAL WARNINGS ABOUT THE HYDRAULIC OILS USE

- Do never mix de oils
- Using good oil, of good quality, warranties a good lubrication and durability of the elements.
- The oil tank must be closed; the air is suctioned by a filling cap with the corresponding filter.
- Keep clean the return filters
- Check the oil level; it must have from 35% to 40% more than the working volume of the cylinder.
- The oil change must be done by experts. The oil removed should be kept and thrown away according with the environment protection rules.

HYDRAULIC STRUCTURES:

Look for possible leaks

STICKER AND LIGHTING DEVICES:

Check the stickers and lighting cleaning.

WHEELS AND TYRES:

Check the tyres condition, the traffic band, sides and make sure that there are not any fissures.

Check the tyres pressure.

SCREWS:

Tighten the cylinder screws of the tipper.

Tighten the support screws of the tilting axle.

Check the tightening torque in the wheel.

CLEANING:

Clean the trailer and remove the dirt left and sticking materials.

TARP:

After the first months of use, the tarp strain will be reduced. To avoid these problems, tighten the strains which are on each side of the tipper, on the upper part.

Grease the bearings of the transmission axle between the lever and the tarp pulley system.

AXLES:

Follow the instructions of annex 1 and, in general, those of the axle manufacture.

10.-ELECTRIC, HIDRAULIC AND PNEUMATIC SYSTEMS

LIFTING AXLE

Description: automatic axles lifting system

Operation: the axles lift automatically once the unloading was done and after starting to operate it.

They will download progressively with the charge.

See schemas:

- 1 lifting axle, drawings: *DTA-3063-R01 and DTA-3062-R01*
- 2 lifting axle, drawings: *DTA-2938-R01 and DTA-2937-R01*

TRACTION ASSISTANCE

Description: It makes possible increasing the loading on the tractor unit to improve the traction by lifting temporally the first axle, although the vehicle is loaded, making possible driving at low speed with the axles which are rolling overloaded.

Operation: It will be activated by a push button placed in the cabin, which sends an electrical signal to the trailer by the terminal pin 6 ISO 3731 or the pin 12 of the ISO terminal 12098.

It will be activated pushing it for 1 second; it will be deactivated automatically when it will exceed the 30 km/h or pressing it for 5 seconds.

This system will not be activated if some of the following conditions will exist:

- Rear axles overloading
- Speed over 30 km/h.

LIFTING AXLES LOWERING

Description: The axles will lift automatically when it is getting unloaded. But we can unload them with two different processes:

- Applying 3 times, in less than 5 seconds, the tractor unit brake.
- Pressing once the traction assistance button, the second axle lowers.
- Pressing for 5 seconds the traction assistance button, both axles lower.

Optional: it can be activated or deactivated from the “Smartboard” or the “Optilink”.

SELF-STEERING AXLE

Description: this system blocks the self-steering axle transforming this axle into rigid.

Operation: The axle blockage is automatic when the speed exceeds 40 km/h., as well as when it is driven in reverse.

It is recommended aligned the tractor unit with the semi-trailer, before starting the reverse, to make sure that the blockage has been done.

It can also be blocked permanently by the switch placed in the left side of the trailer.

See schema: drawings *DTA-3069-R01 y DTA-3068-R01*

BOX LIFTING

Description: this system is used to lift the box and to do the unloading.

See schema: drawing *H001*

BOTH HYDRAULIC TERMINALS MUST BE CONNECTED BETWEEN THE TRACTOR UNIT AND THE SEMI-TRAILER: PRESSURE AND RETURN

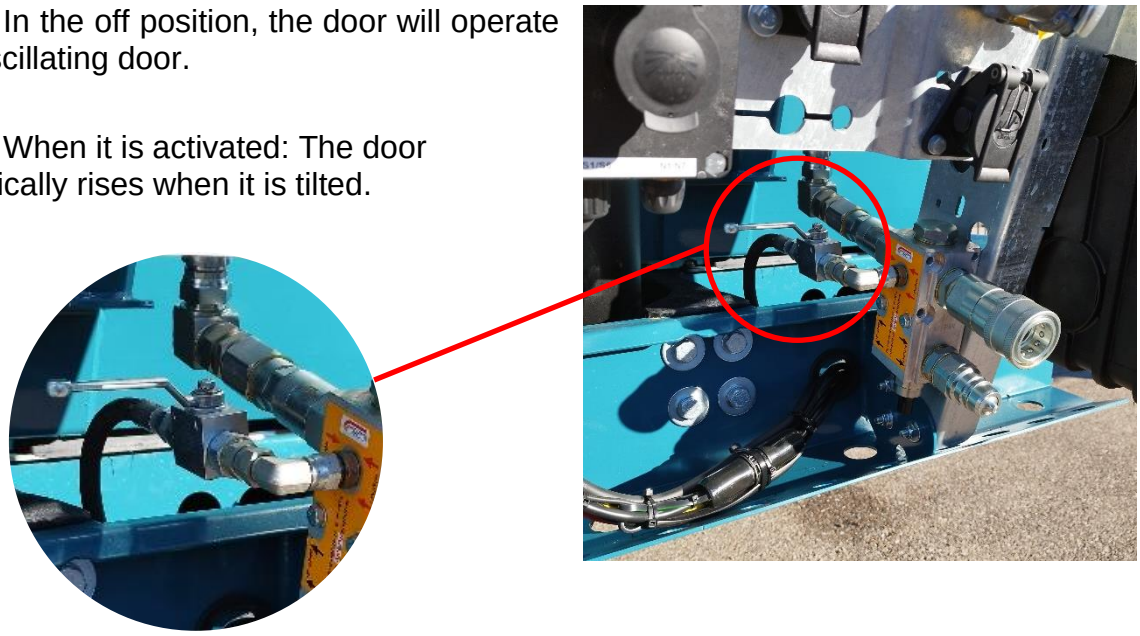
OPTIONAL- BOX LIFTING WITH HYDRAULIC BOX

Description: This system is used to lift the door by some hydraulic cylinders, before starting the merchandise unloading, protecting the door, against possible merchandise hits. Protecting the door against possible hits of the merchandise.

Operation: Through a ball valve which is on the front of the chassis, we activate the system: closed off, open activated.

In the off position, the door will operate as an oscillating door.

When it is activated: The door automatically rises when it is tilted.



See schemas: drawings *H003*

BRAKES SCHEMA: drawing *DTA-3062-R01, DTA-2937-R01 and DTA-3068-R01*

ATTENTION: *This system operation must be done exclusively by the qualified staff and designed by ROJO TRAILER, SL, or by the manufacture of the brake system Wabco.*

LIGHTS AND CONNEXIONS SCHEMAS WITH THE TRUCK:

General Schema of the lighting electric installation:

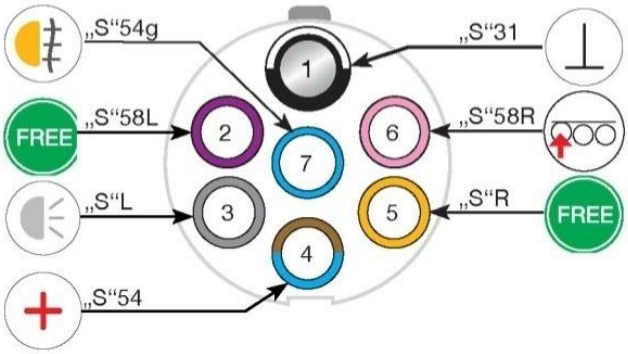
Drawing *20M0D524/9M*

Connexions with the tractor unit:

SYMBOL LEGEND						SYMBOL LEGEND					
Symbol											Symbol
Masse	Earth	massa	Masse	Masa	Terra	Massa	Jord	jord	maa	
Blinker links	LH rear direction indicator	freccia sinistra	Clignotant gauche	Intermitente izquierdo	Pisca esquerdo	knipperlicht Links	Venstre blinklys	blinker vänster	vilkku vasen	
Blinker rechts	RH rear direction indicator	freccia destra	Clignotant droit	Intermitente derecho	Pisca direito	knipperlicht Rechts	Høyre blinklys	blinker höger	vilkku oikea	
Bremslicht	stop	stop	Feu stop	Luz de freno	Freio	Rem licht	Bremselys	bromsljus	jarruvalo	
Standlicht links	LH Tail	posizione sinistra	Feu de position gauche	Lus posición izquierda	Luz de posição esquerda	Achterlamp Links	Venstre parklys	parkljus vänster	parkki vasen	
Standlicht rechts	RH Tail	posizione destra	Feu de position droit	Lus posición derecha	Luz de posição direita	Achterlamp Rechts	Høyre parklys	parkljus höger	parkki oikea	
Nebelschluss-leuchte	rear fog	retronebbia	Feu de brouillard	Luz antiniebla	Luz de neblina	Mist lamp	Tåkelys	dimljus	sumuvalo	
Rückfahrleuchte	reverse	retromarcia	Feu de recul	Luz marcha atrás	Luz de Ré	Achteruitrij lamp	Baklys	backljus	peruutusvalo	
All. Stromversor-gung (+)	permanent power supply	positivo perma-nente	Alimentation élec-trique permanente (+)	corriente continua	corrente contínua	Constante stroomverzorging	Allmenn strøm-forsyvning	allmänn strömförsörjning	jatkuva virta	
Achsanhebung	axle lift	Sollevatore	Relevage d'essieu	dispositivo de ele-vación del eje	dispositivo de ele-vação do eixo	Aslift	Akselløft	axellyft	akselinosto	
Federspeicheran-zeige	braking control	Controllo funzioa-mento freni	Contrôle freinage remorque	Control de frenos para trailers	Controle de fun-cionamento dos freios	Remcilinder markering	Bremseindikator	bromsindikator	jousijarrun ilmaisin	
Verschleißanzeige	brake pad wear Indicator	Controllo usura pastiglie	Témoin d'usure des plaquettes de frein	Indicador de desgaste de las pastillas de freno	Indicador de des-gaste de pastilhas de freio	Remslijtage indi-cator	Slitasjeindikator	slitageindikator	jarrujen kulumisen ilmaisin	
Masse für Elektro-niken	Earth - Data	Massa per elett-ronica	Masse des éléments électro-niques	masa funciones electrónicas	Terra para funções eletrô-nicas	Massa Data	Jord for elektro-nikk	jord för elektronik	elektroniikan maa	
freie Wahl	unallocated	libero	Libre	Libre elección	Livre	Vrije positie	Fritt valg	fritt val	vapaa	



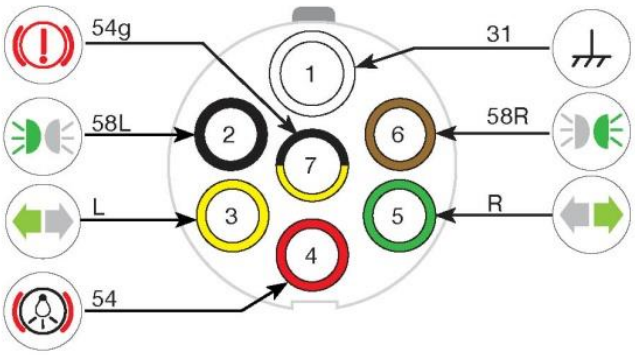
ISO 3731
7 pin



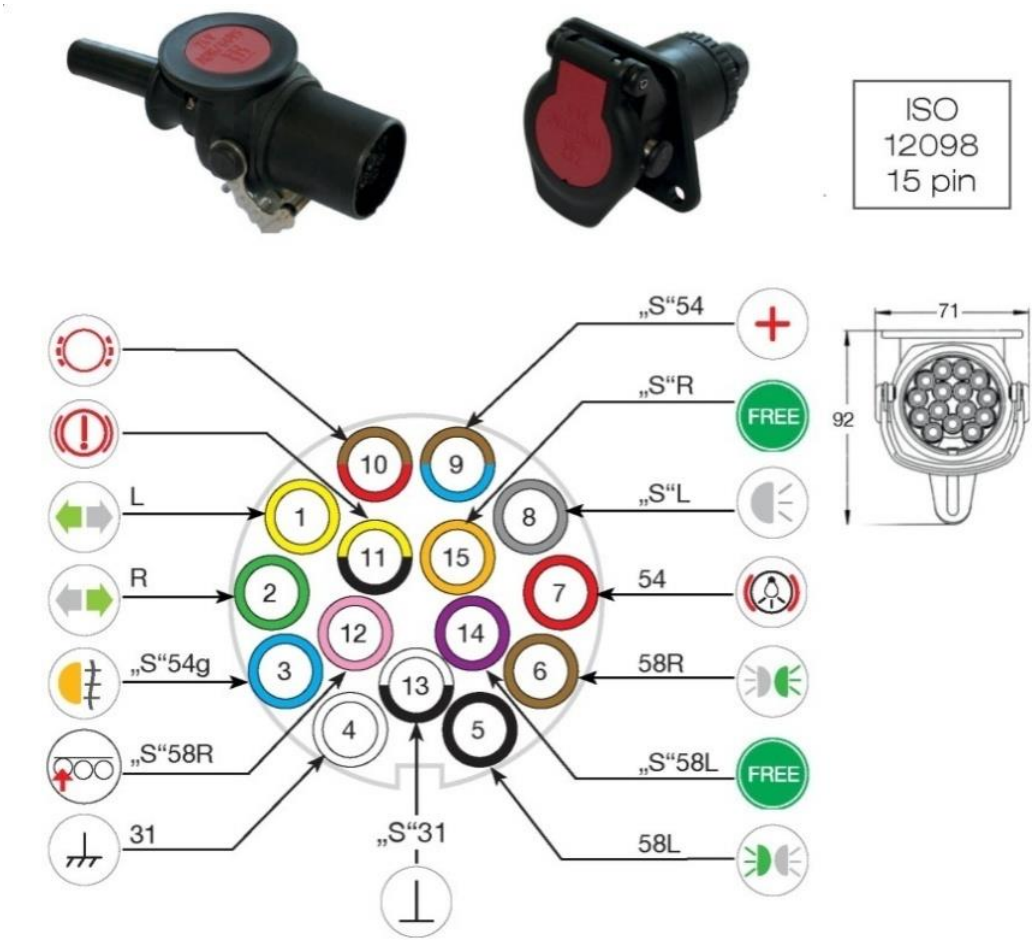




ISO 1185
7 pin





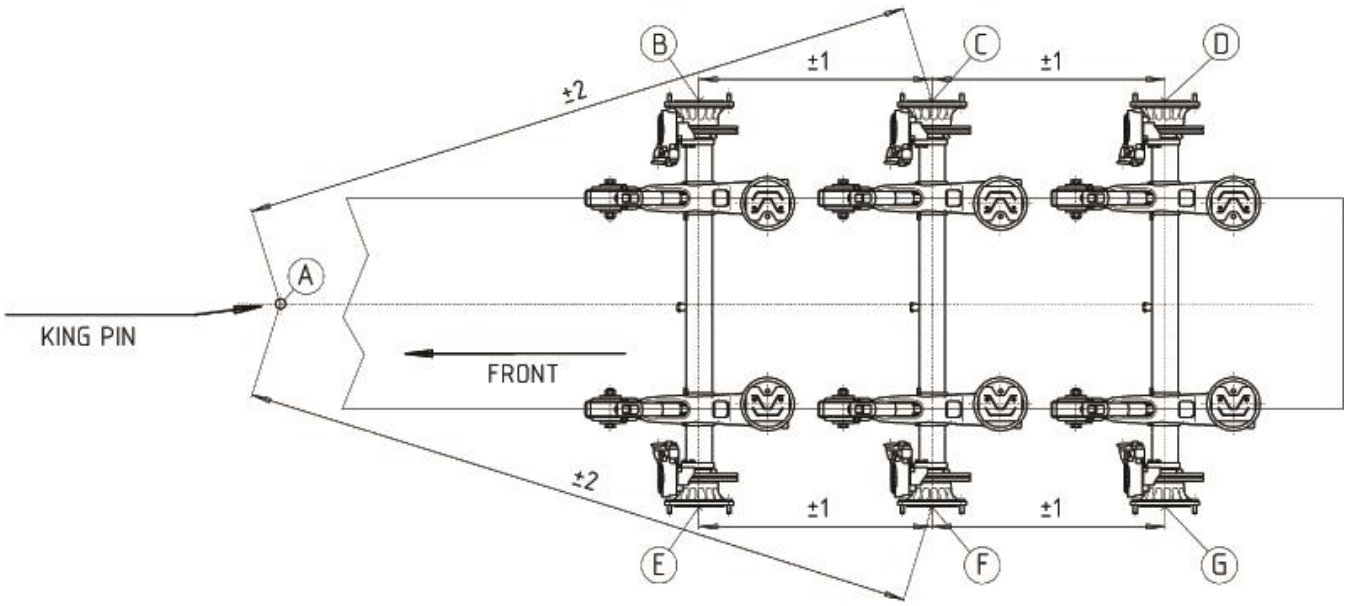

ISO
12098
15 pin
„S“54
„S“R
„S“L
54
58R
„S“58L
58L
„S“31
L
R
„S“54g
„S“58R
31
FREE
FREE
71
92
10
9
1
8
11
15
2
7
12
14
3
6
13
4
5

ANNEX 1

It must be done after 1000 km and every year.

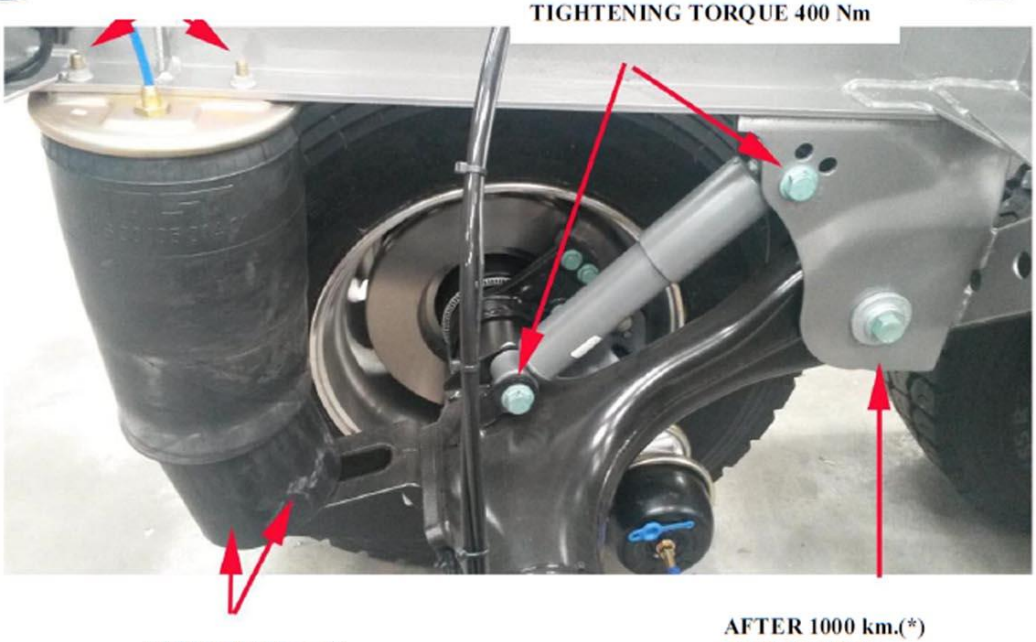
Determine the lengths of the diagonals **A - C** and **A -** F for the middle axle(reference axle) by comparison measurements, observing the tolerances(**± 2** mm).

Check the wheelbases **B - C** and **E - F** for the front axle and **C - D** and **F - G** for the rear axle and correct, if necessary, observing the tolerances (**± 1** mm).



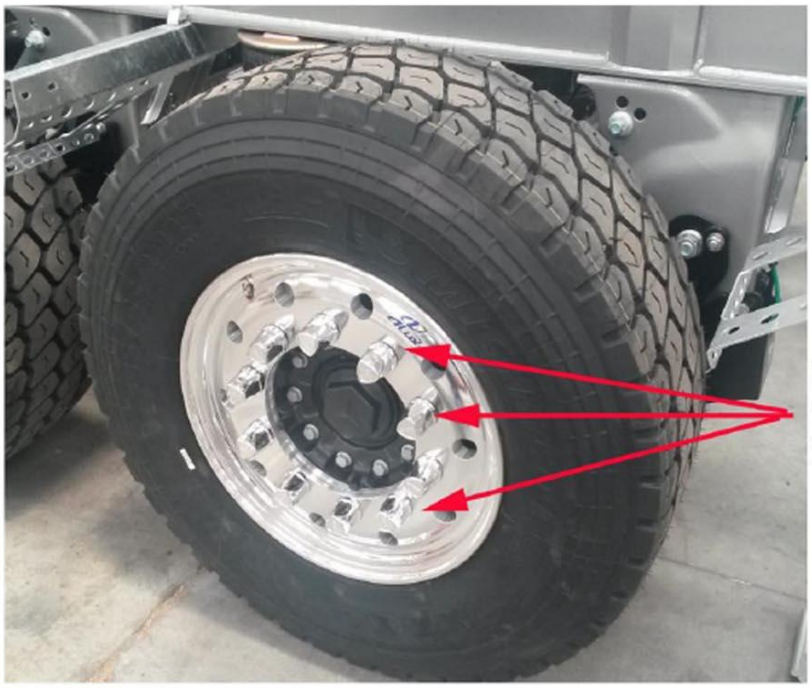
AFTER 1000 km.(*)
EVERY YEAR
UPPER SPRING FIXING
TIGHTENING TORQUE 60 Nm

A LOS 1000 km.(*)
AFTER 1000 km.(*)
DAMPER FIXING
TIGHTENING TORQUE 400 Nm



AFTER 1000 km.(*)
EVERY YEAR
LOWER SPRING FIXING
TIGHTENING TORQUE 60 Nm

AFTER 1000 km.(*)
EVERY YEAR
SUPPORT BRACKET
TIGHTENING TORQUE 900 Nm



AFTER 150 AND 500 km.
EVERY 3 MONTHS
WHEN TYRES ARE CHANGED
FOLLOW PREVIOUS STEPS
TIGHTENING TORQUE 600 Nm

(*) IT MUST BE HAVING DONE ANY LOADED TRIP

SAF INTRA

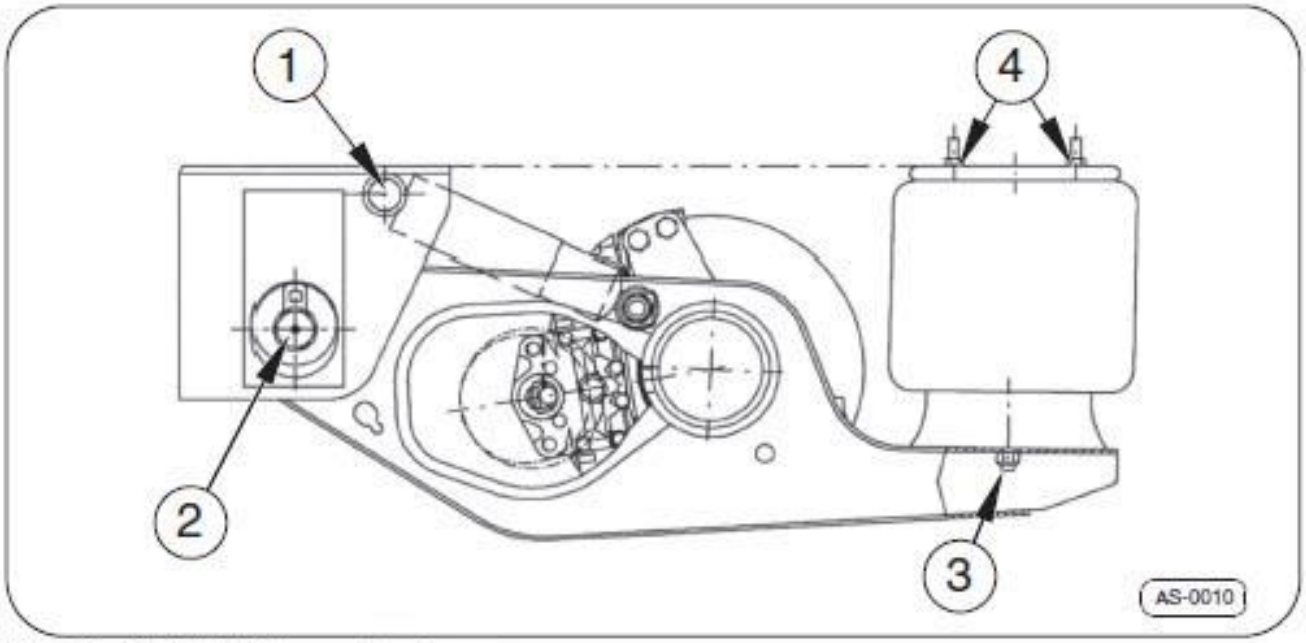


Fig. 11 - SAF INTRA inspection torque

Item.	Screw connection	Inspeotion torque (Nm)	Width across flats
–1–	M20x1,5	400	30
–2–	M30	1200	46
–3–	M16	80	24
–4–	M12	40	19

SAF MODUL

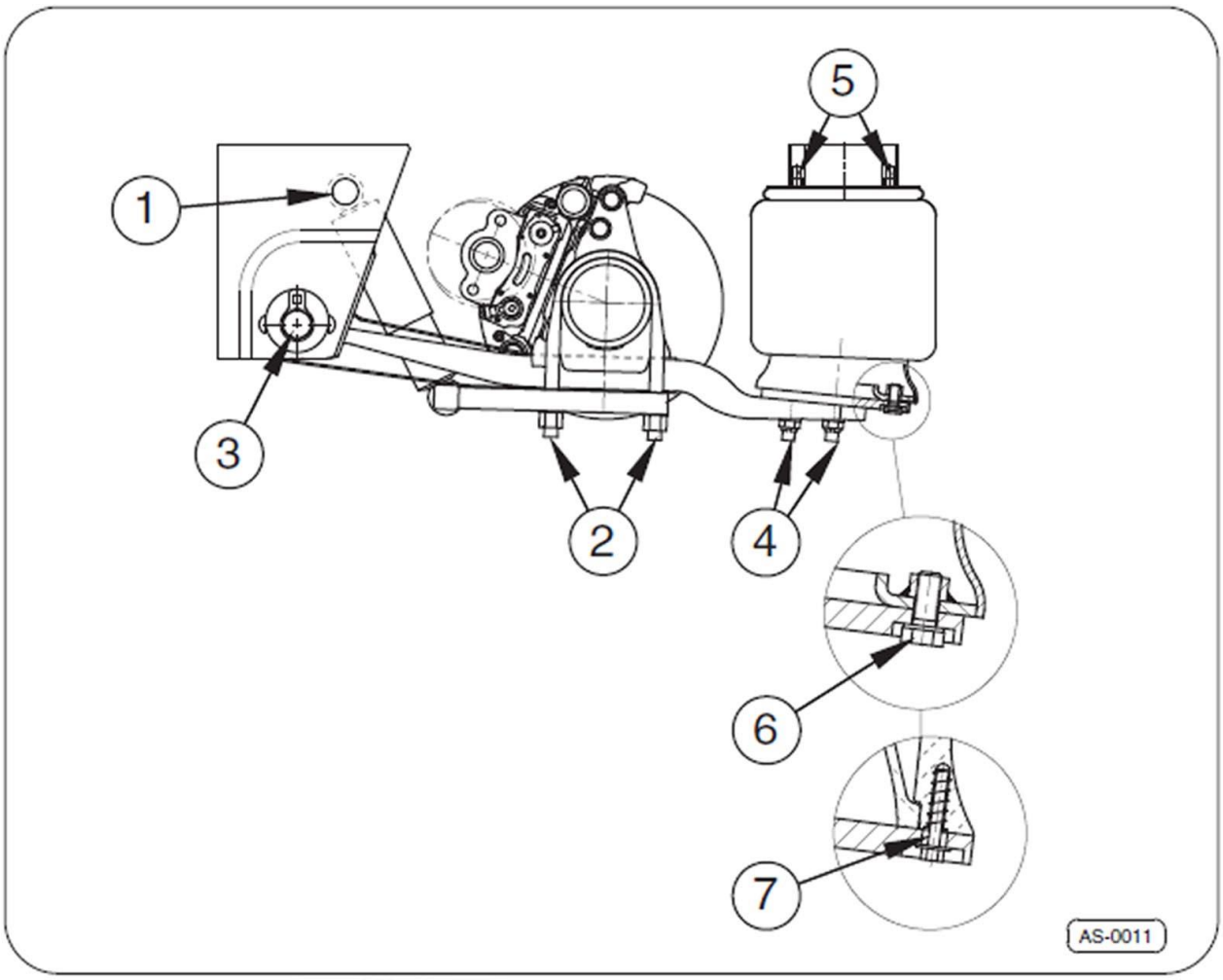


Fig. 12 · SAF MODUL inspection torque

Item.	Screw connection	Inspeotion torque (Nm)	Width across flats
–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

OBSERVE CAREFULLY THE MAINTENANCE, GREASING, ETC. EXPLAINED IN THIS MANUAL

IT IS VERY IMPORTANT DOING THE FIRST MAINTENANCE AND THE RE-TIGHTENING OF EVERY FIXINGS, AS CLOSE AS POSSIBLE TO THE FIRST LOADING TRIP AND/OR 1000 KM.

THE 90% OF THE PROBLEMS ON AXLES AND SUSPENSION ARE DUE BECAUSE OF ABSENCE OF FOLLOWING-UP THE MAINTENANCE INSTRUCTIONS. NOT FOLLOWING THESE INSTRUCTIONS WILL BE CONSIDERED A DEFECT USE AND, THEREFORE, THE WARRANTY WILL BE VOID.

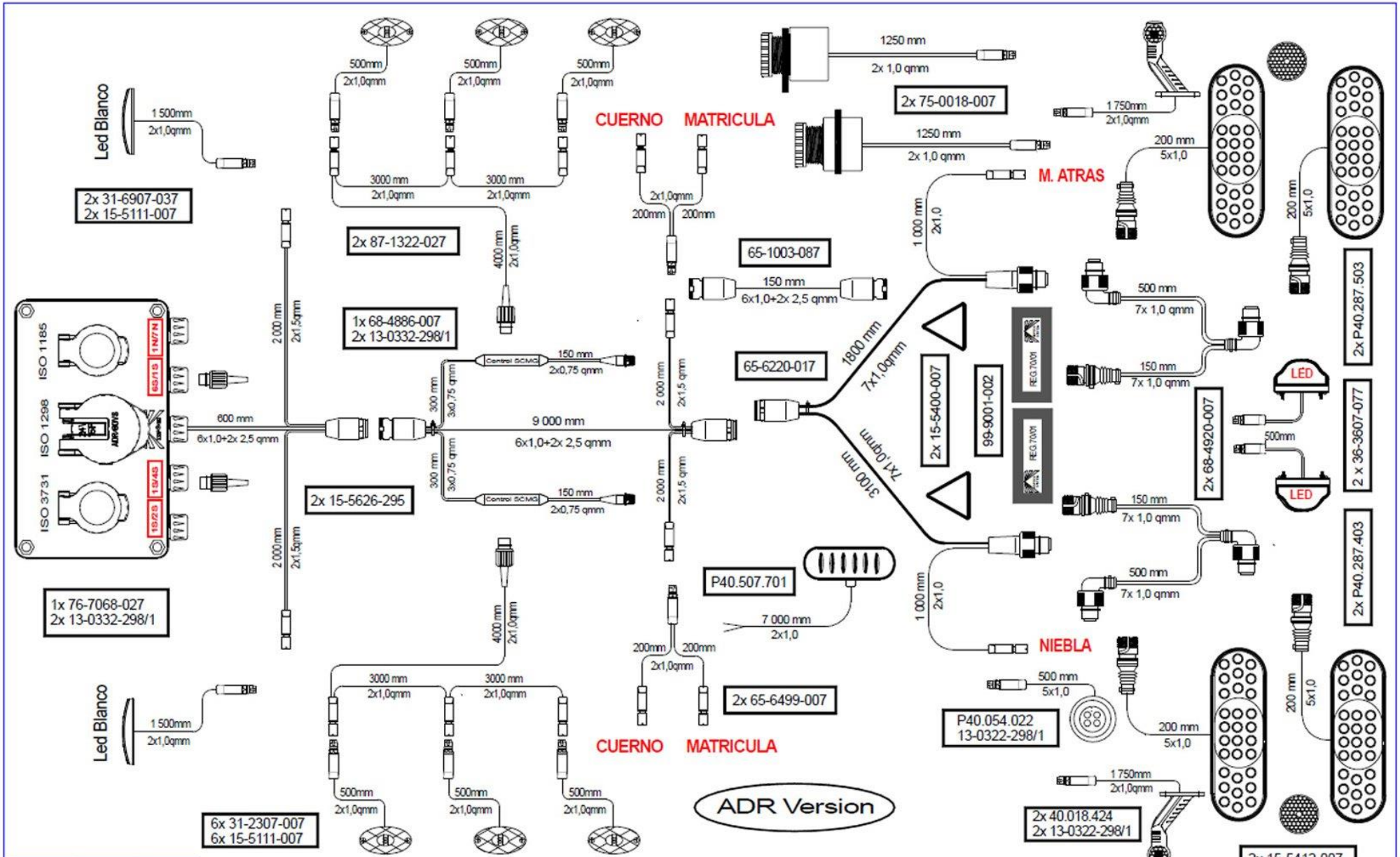
IMPORTANT: AFTER THE 1ST INSPECTION. THIS FILE NEEDS TO BE DULY FILLED AND SIGNED, AND SENT TO THE e-mail service@rojotrailer.com, TO ROJO TRAILER SL , ATTACHING THE TECHNICAL DATA SHEET

IN CASE OF HAVING ANY DOUBTS OR IF ANY INFORMATION ABOUT MAINTENANCE IS NEEDED, CONTACT THE POST-SALES RESPONSABLE ON PHONE NUMBER: +34. 947 54 64 11.

COMPANY NAME		V.A.T.
ADDRESS		CITY
		COUNTRY
TELEPHONE N.		

UNIT INFORMATION		WARRANTY STARTING DATE	
MODEL		O.P.	
CHASSIS NUMBER			

DAY	WORK DONE
WORKSHOP	STAMP



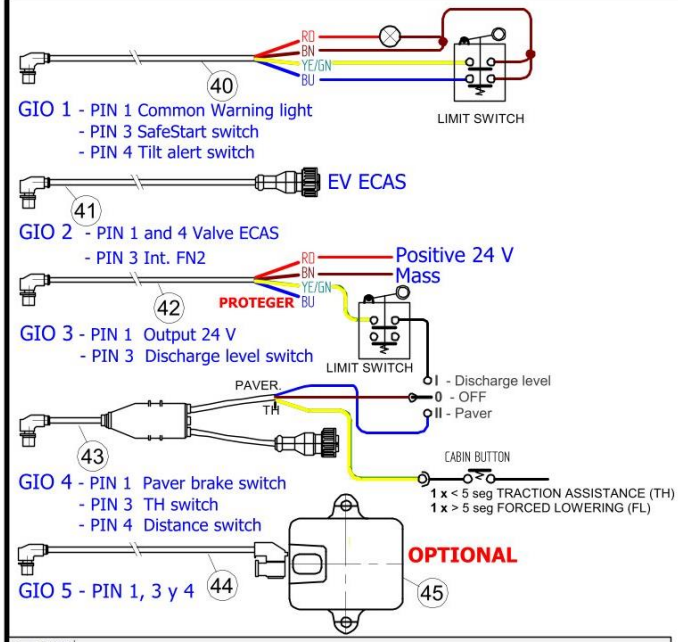
INDICE	Fecha	Nombre
Autor:	07.10.20	L.D
Modificado:		
Comentario: Nuevo R-48 BASC. 9M Ass3 PRO-HORIZ		

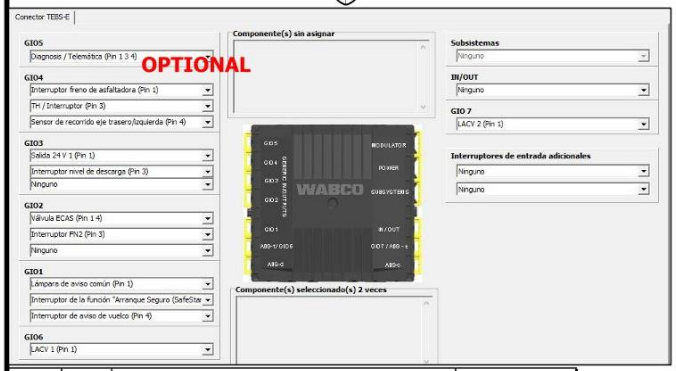
No. Plano: 20MOD524/9M

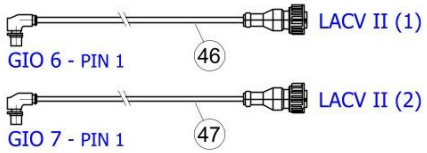
Cliente: ROJO

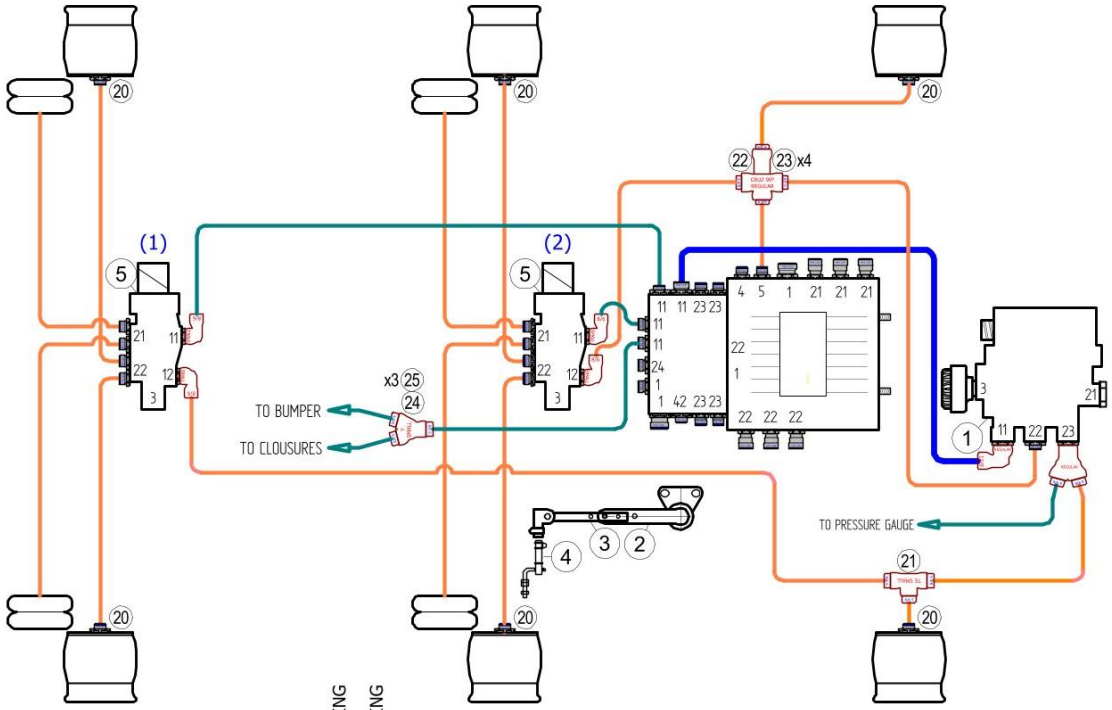
ASPÖCK SYSTEMS IBERICA, S.A.

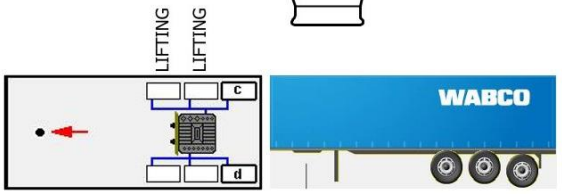
ASPÖCK SYSTEMS F. ASPÖCK FAHRZEUGELEKTRIK











Marca	Cant.	NAME	REFERENCE	
1	1	EV ECAS + Fittings	400 652 566 0	
2	1	Distance Sensor	441 050 100 0	
3	1	Lever	441 050 718 2	
4	1	Linkage	433 401 003 0	
5	2	LACV II + Fittings	400 650 900 0	
20	6	Push-in M22-8/6 ABC	893 800 005 2	
21	1	Te Composite Ø8/6	400 803 218 0	
22	1	Cross 90º Composite Regular	893 905 801 4	
23	4	Push-in 8/6 Composite Regular	893 800 091 2	
24	1	Y From Composite Small	893 400 866 4	
25	3	Push-in 8/6 Composite Small	893 800 096 2	
40	1	GIO - open end 6m	449 535 060 0	
41	1	Connecting Cable ECAS valve 3m	449 445 030 0	
42	1	GIO - open end 6m	449 535 060 0	
43	1	Connecting Cable Distance Sensor 4m	449 626 188 0	
44	1	Connecting CableTrailerPulse 5m	449 927 050 0	OPTIONAL
45	1	TX-TRAILERPULSE	346 291 000 0	
46	1	Connecting Cable Lift axle valve 4m	449 443 040 0	
47	1	Connecting Cable Lift axle valve 1m	449 443 010 0	

TUBERIAS
Ø 8/6
Ø 8/6
Ø 12/9

FOR BRAKES SEE **DTA-2937**

Modificación				
	F	30-09-2020	FRUTOS	CORREGIDO CONEXIONADO NEUMATICO VALVULA LACV
	E	29-07-2020	MARTINEZ	AGREGADA "Y" AEREA PARA DAR SERVICIO A PARAGOLPES Y CIERRES.
	D	26-06-2020	FRUTOS	ACTUALIZADO CONEXIONADO NEUMATICO Y ELECTRICO SEGUN MONTAJE EN VEHICULO
	Núm.	Fecha	Nombre	Tipo de modificación

Plano
DTA-2938-R01

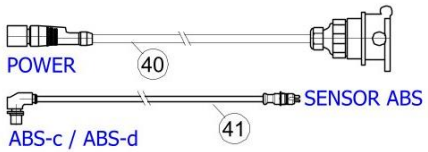
Conjunto
Equipo de Suspensión con racores

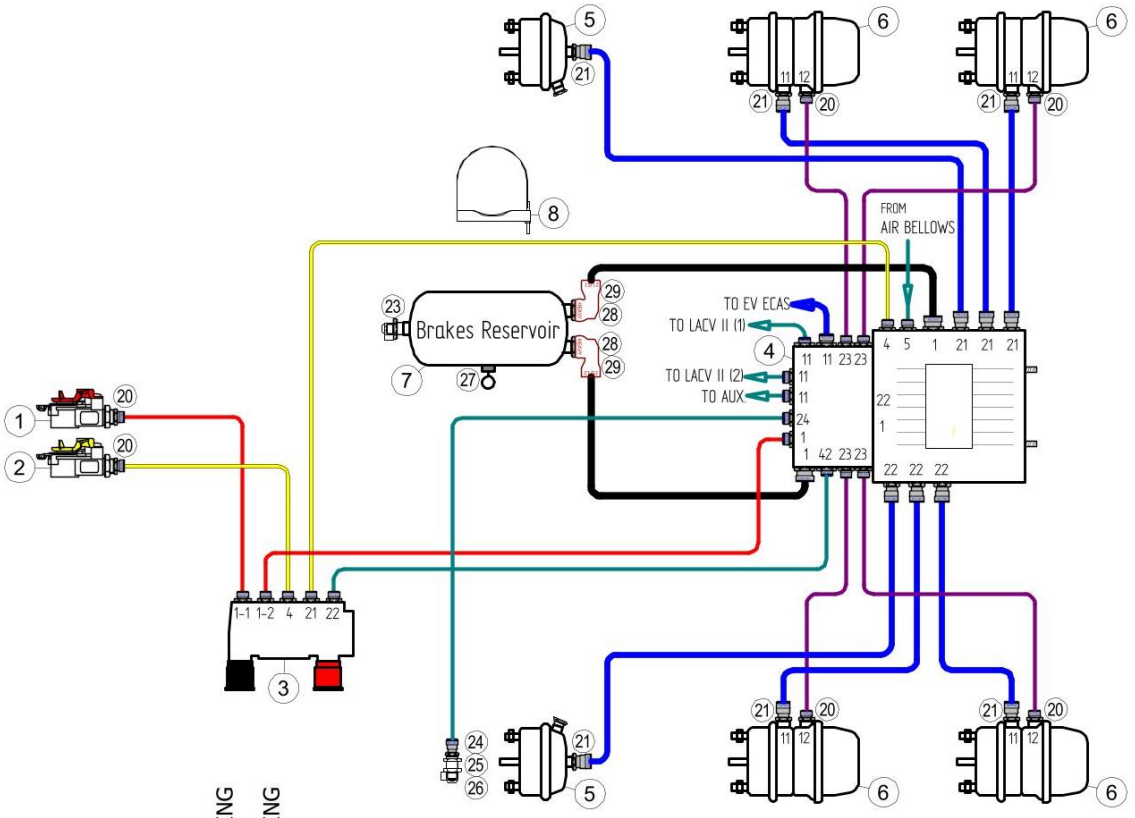
SET
del 400 608 998 0

Denominación
3 axles , 1rst and 2nd lift axles

	FECHA	NOMBRE
DIBUJADO	11-03-2020	FRUTOS

ZF WABCO







FOR SUSPENSION SEE **DTA-2938**

Marca	Cant.	NAME	REFERENCE
1	1	Coupling Head with Integrated Filter	952 201 012 0
2	1	Coupling Head with Integrated Filter	952 201 011 0
3	1	PREV + Fittings	400 651 434 0
4	1	EBS E PREMIUM+PEM + Fittings	400 652 565 0
5	2	Brake Chamber	A DEFINIR
6	4	Double Diaphragm Tristop	A DEFINIR
7	1	Air Reservoir	A DEFINIR
8	2	Mounting (Air Reservoir)	A DEFINIR
20	6	Push-in M16-8/6 ABC	893 800 001 2
21	6	Push-in M16-12/9 ABC	893 800 002 2
23	1	Test Port M22	463 703 115 0
24	1	Push-in M12-8/6 ABC	893 800 007 2
25	1	Lock Nut DIN80705- M18x1,5	891 503 005 4
26	1	Test Port M18	463 703 204 0
27	1	Drain valve M22	934 300 038 0
28	2	Quick Coupling M22 Heavy	893 920 320 2
29	2	Elbow Composite 15/12 Heavy	893 920 327 2
40	1	EBS Supply Cable 10m	449 173 100 0
41	2	Sensor Cable 1,8m	449 723 018 0

TUBERIAS

- Ø 8/6
- Ø 8/6
- Ø 8/6
- Ø 8/6
- Ø 12/9
- Ø 15/12

Modificación	Núm.	Fecha	Nombre	Tipo de modificación
	C	11-03-2021	MARTÍNEZ	SUSTITUIDO RECTO POR CODO Ø15/12.
	B	16-10-2020	FRUTOS	ACTUALIZADA LONGITUD CABLE SENSOR, ANTES 449 723 040 0
	A	26-06-2020	FRUTOS	ACTUALIZADA RACORERIA SEGUN MONTAJE EN VEHICULO

Plano: DTA-2937-R01

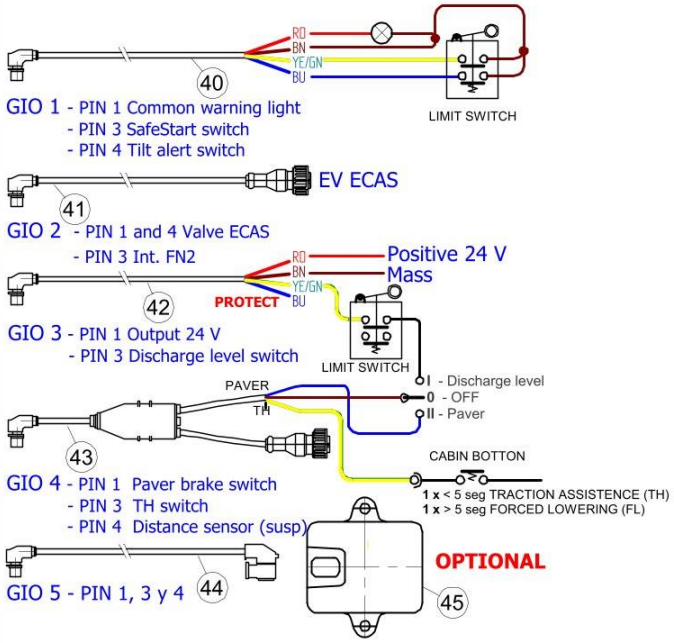
Conjunto: Equipo de Frenos con **EBS E + PEM**

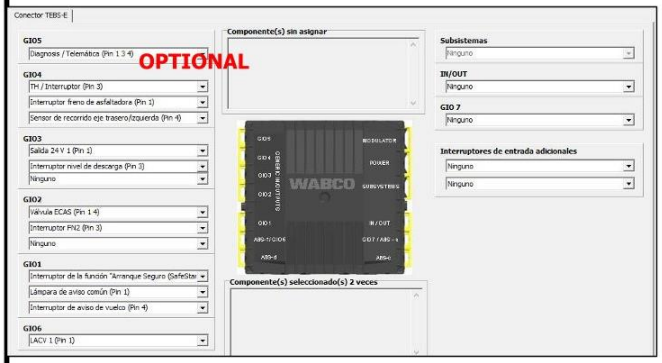
SET del 400 608 998 0

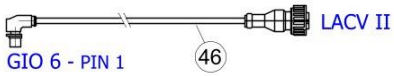
Denominación: **3 axles , 1rst and 2nd lift axles**

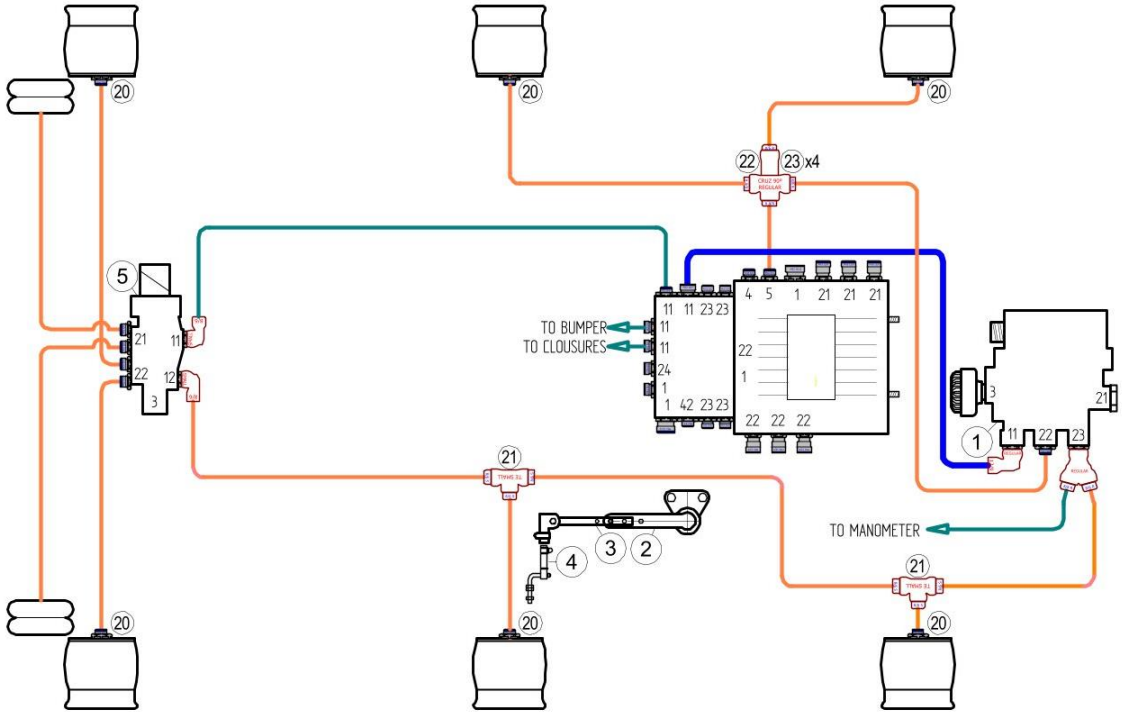
	FECHA	NOMBRE
DIBUJADO	11-03-2020	FRUTOS

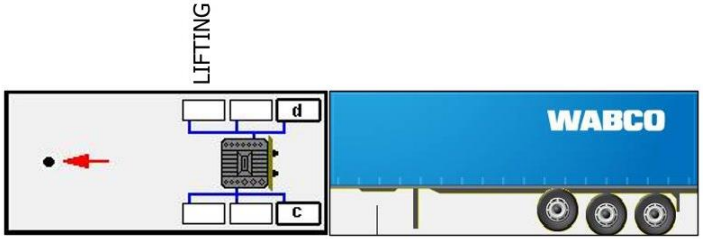
ZF WABCO











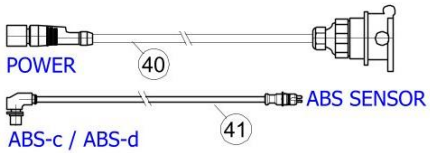
FOR BRAKES SEE **DTA-3062**

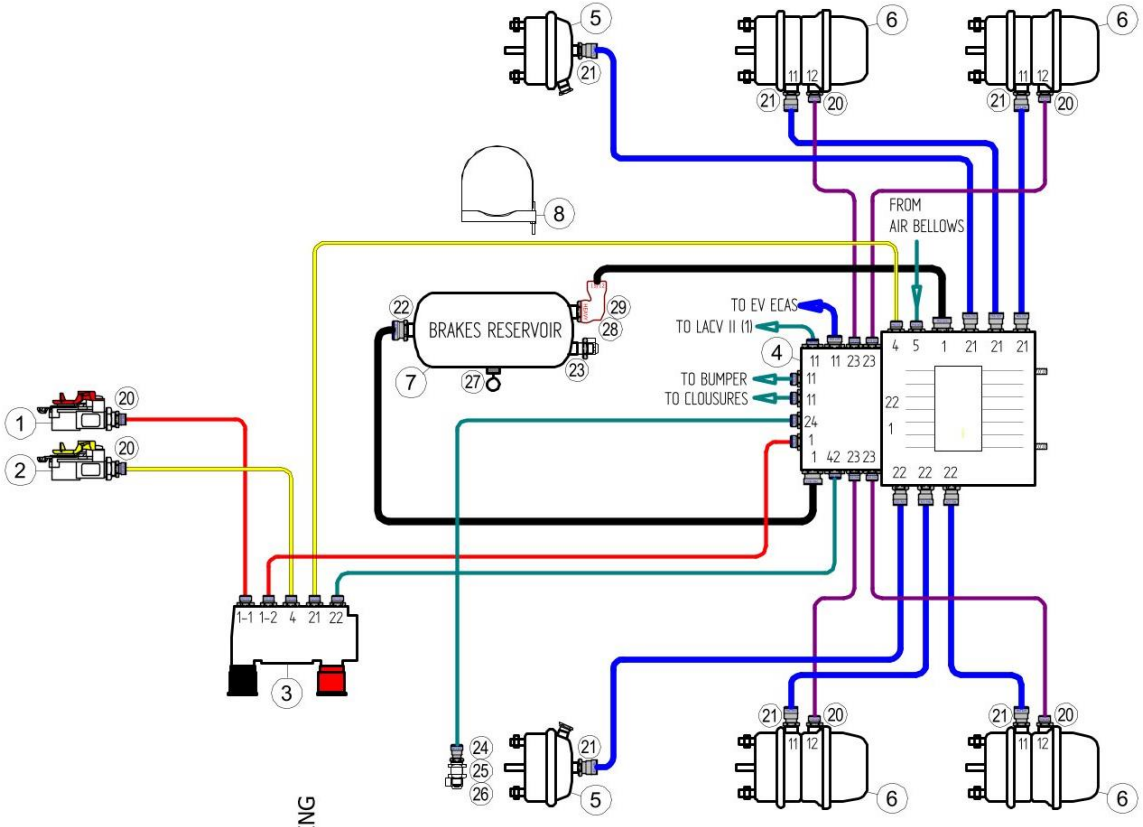
Marca	Cant.	NAME	REFERENCE	
1	1	EV ECAS + Fittings	400 652 566 0	
2	1	Distance sensor	441 050 100 0	
3	1	Lever	441 050 718 2	
4	1	Linkage	433 401 003 0	
5	1	LACV II + fittings	400 650 900 0	
20	6	Push-in M22-8/6 ABC	893 800 005 2	
21	2	TE Composite Ø8/6 small	400 803 218 0	
22	1	Cross 90º Composite Regular	893 905 801 4	
23	4	Pus-in 8/6 Composite Regular	893 800 091 2	
40	1	GIO - open end 6m	449 535 060 0	
41	1	Connecting Cable ECAS valve 3m	449 445 030 0	
42	1	GIO - open end 6m	449 535 060 0	
43	1	Connectin cable distance sensor 4m	449 626 188 0	
44	1	Connectin cable TrailerPulse 5m	449 927 050 0	OPTIONAL
45	1	TX-TRAILERPULSE	346 291 000 0	
46	1	Connecting cable lift axle valve 4m	449 443 040 0	

TUBERIAS
Ø 8/6
Ø 8/6
Ø 12/9

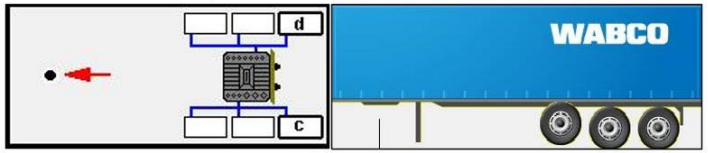
Modificación				
A	01-10-2020	FRUTOS	ELIMINADO RACOR Y AUXILIARES	
Núm.	Fecha	Nombre	Tipo de modificación	

Plano	DTA-3063-R01	Conjunto	Equipo de Suspensión con racores
SET	del 400 609 041 0	Denominación	**3 axles , 1rst lift axle**
	FECHA	NOMBRE	
DIBUJADO	24-09-2020	FRUTOS	ZF WABCO





LIFTING



FOR SUSPENSION SEE **DTA-3063**

Marca	Cant.	NAME	REFERENCE
1	1	Coupling Head with Integrated Filter	952 201 012 0
2	1	Coupling Head with Integrated Filter	952 201 011 0
3	1	PREV + fittings	400 651 434 0
4	1	EBS E PREMIUM+PEM + fittings	400 652 565 0
5	2	Brake Chamber	A DEFINIR
6	4	Double Diaphragm Tristop	A DEFINIR
7	1	Air reservoir	A DEFINIR
8	2	Mounting (air reservoir)	A DEFINIR
20	6	Push-in M16-8/6 ABC	893 800 001 2
21	6	Push-in M16-12/9 ABC	893 800 002 2
22	1	Push-in M22-15/12 ABC	893 800 004 2
23	1	Test Port M22	463 703 115 0
24	1	Push-in M12-8/6 ABC	893 800 007 2
25	1	Lock Nut DIN80705 M18x1,5	891 503 005 4
26	1	Test Port M18	463 703 204 0
27	1	Drain Valve M22	934 300 038 0
28	1	Quick Coupling M22 Heavy	893 920 320 2
29	1	Elbow Composite 15/12 ABC Heavy	893 920 327 2
40	1	EBS Supply Cable 10m	449 173 100 0
41	2	Sensor Cable 4m	449 723 040 0

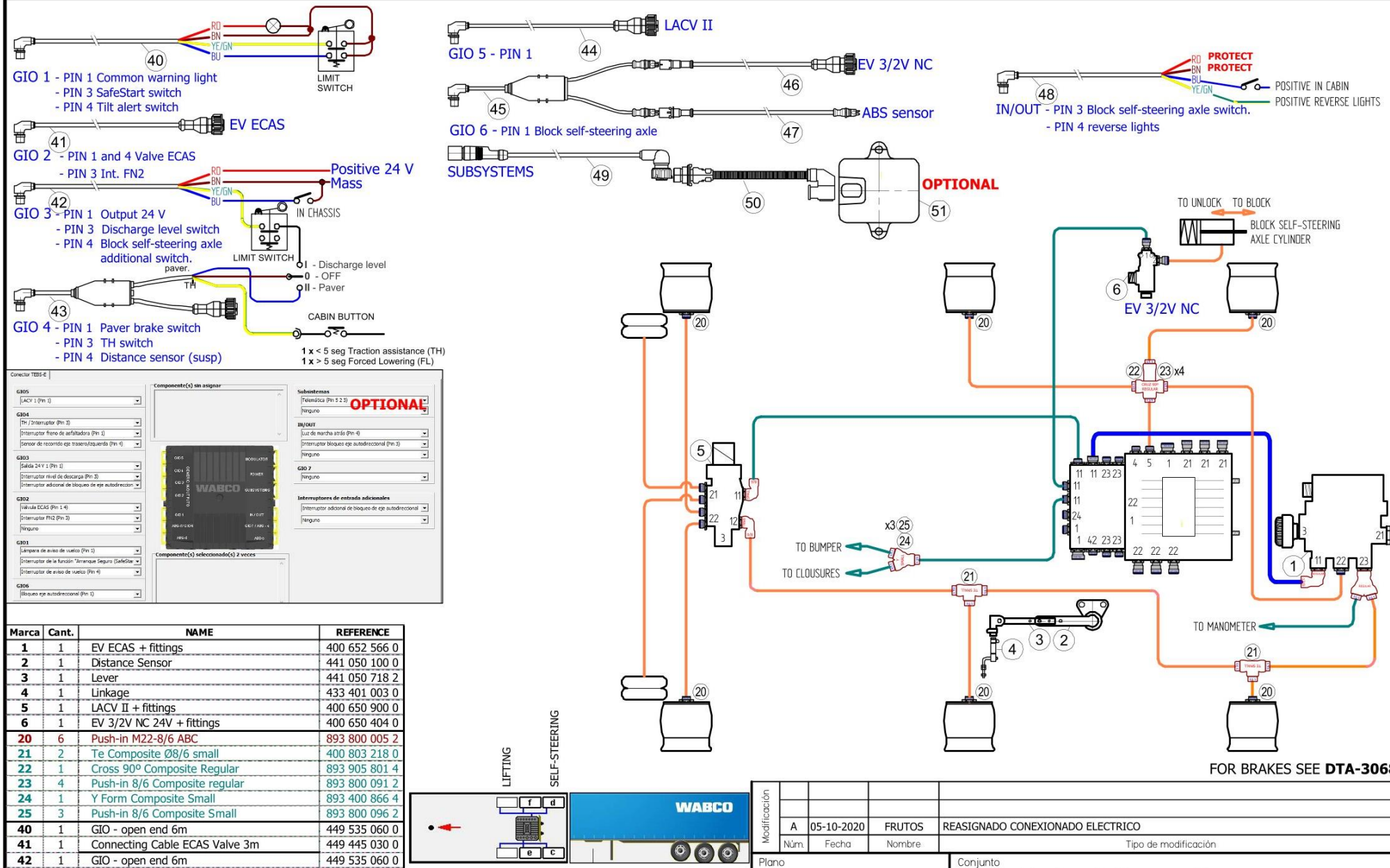
TUBERIAS

- Ø 8/6
- Ø 8/6
- Ø 8/6
- Ø 8/6
- Ø 12/9
- Ø 15/12

Modificación	Núm.	Fecha	Nombre	Tipo de modificación
	A	01-10-2020	FRUTOS	ELIMINADO TAPON 8 ABC EN BOCA 11 MODULADOR

Plano: DTA-3062-R01		Conjunto: Equipo de Frenos con **EBS E + PEM**
SET del 400 609 041 0		Denominación: **3 axles , 1rst lift axle**
	FECHA	NOMBRE
DIBUJADO	24-09-2020	FRUTOS

ZF WABCO



Marca	Cant.	NAME	REFERENCE
1	1	EV ECAS + fittings	400 652 566 0
2	1	Distance Sensor	441 050 100 0
3	1	Lever	441 050 718 2
4	1	Linkage	433 401 003 0
5	1	LACV II + fittings	400 650 900 0
6	1	EV 3/2V NC 24V + fittings	400 650 404 0
20	6	Push-in M22-8/6 ABC	893 800 005 2
21	2	Te Composite Ø8/6 small	400 803 218 0
22	1	Cross 90º Composite Regular	893 905 801 4
23	4	Push-in 8/6 Composite regular	893 800 091 2
24	1	Y Form Composite Small	893 400 866 4
25	3	Push-in 8/6 Composite Small	893 800 096 2
40	1	GIO - open end 6m	449 535 060 0
41	1	Connecting Cable ECAS Valve 3m	449 445 030 0
42	1	GIO - open end 6m	449 535 060 0
43	1	Connecting Cable Distance Sensor 4m	449 626 188 0
44	1	Connecting Cable Lift Axle Valve 4m	449 443 040 0
45	1	Sensor Cable + GIO	449 818 022 0
46	1	Cable Pressure Sensor 1m	449 752 010 0
47	1	Sensor Cable 5,1m VCS	449 712 051 0
48	1	Super GIO Cable 6m	449 365 060 0
49	1	Connecting Cable TrailerPulse 5m	449 913 050 0
50	1	Adapter Cable TrailerPulse	894 600 001 2
51	1	TX-TRAILERPULSE	346 291 000 0

OPCIONAL

TUBERIAS
Ø 8/6
Ø 8/6
Ø 12/9

Modificación				
A	05-10-2020	FRUTOS	REASIGNADO CONEXIONADO ELECTRICO	
Núm.	Fecha	Nombre	Tipo de modificación	

Plano
DTA-3069-R01

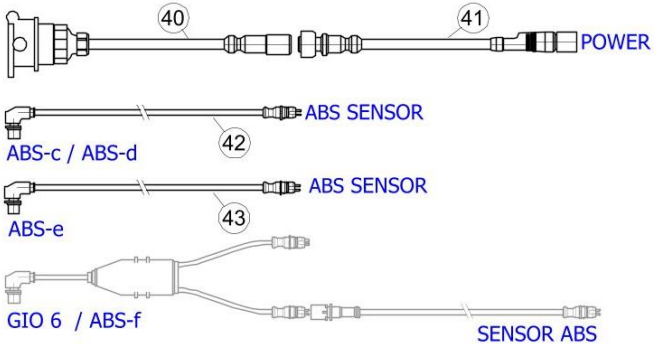
SET
del 400 609 048 0

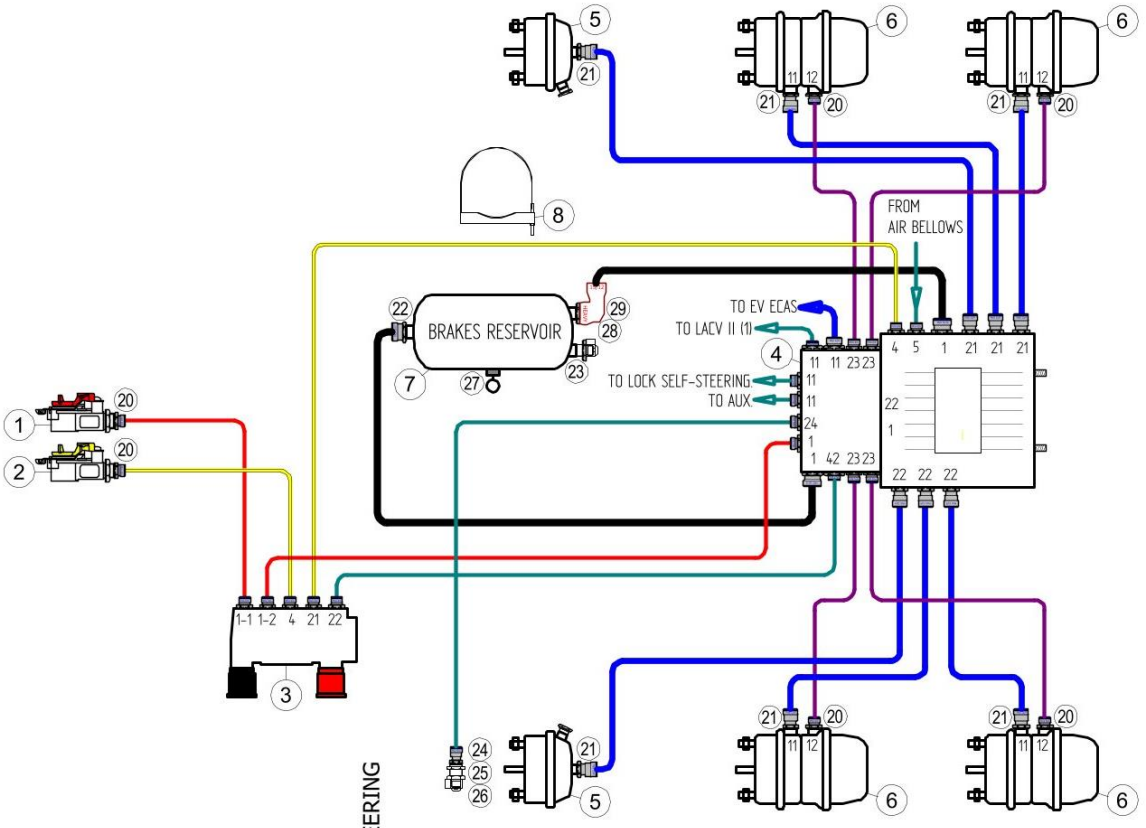
	FECHA	NOMBRE
DIBUJADO	01-10-2020	FRUTOS

Conjunto
Equipo de Suspensión con racores

Denominación
3 axles,1rst lift axle and 3rd self-steering axle.

ZF Commercial Vehicle Solutions





A PETICION DE CLIENTE SIN CONTROL M.A.R .EN EJE AUTODIRECCIONAL

FOR SUSPENSION SEE **DTA-3069**

Marca	Cant.	NAME	REFERENCE
1	1	Coupling Head with integrated Filter	952 201 012 0
2	1	Coupling Head with integrated Filter	952 201 011 0
3	1	PREV + fittings	400 651 434 0
4	1	EBS E PREMIUM+PEM + fittings	400 652 565 0
5	2	Brake Chamber	to define
6	4	Double Diaphragm Tristop	to define
7	1	Air reservoir	to define
8	2	Mounting (air reservoir)	to define
20	6	Push-in M16-8/6 ABC	893 800 001 2
21	6	Push-in M16-12/9 ABC	893 800 002 2
22	1	Push-in M22-15/12 ABC	893 800 004 2
23	1	Test Port M22	463 703 115 0
24	1	Push-in M12-8/6 ABC	893 800 007 2
25	1	Lock Nut DIN80705 M18x1,5	891 503 005 4
26	1	Test Port M18	463 703 204 0
27	1	Drain valve M22	934 300 038 0
28	1	Quick Coupling M22 Heavy	893 920 320 2
29	1	Elbow Composite 15/12 ABC Heavy	893 920 327 2
40	1	EBS Supply Cable 6m	449 133 060 0
41	1	Intermediate Cable 12m	449 347 120 0
42	2	Sensor Cable 4m	449 723 040 0
43	1	Sensor Cable 5m	449 723 050 0

TUBERIAS

- Ø 8/6
- Ø 8/6
- Ø 8/6
- Ø 8/6
- Ø 12/9
- Ø 15/12

Modificación				
	B	24-06-2022	MARTÍNEZ	SUSTITUIDO CABLE 449 173 100 0 POR 449 133 060 0 + 449 347 120 0
	A	05-10-2020	FRUTOS	AÑADIDO CABLE 449 723 050 0
	Núm.	Fecha	Nombre	Tipo de modificación

Plano: DTA-3068-R01

SET del 400 609 048 0

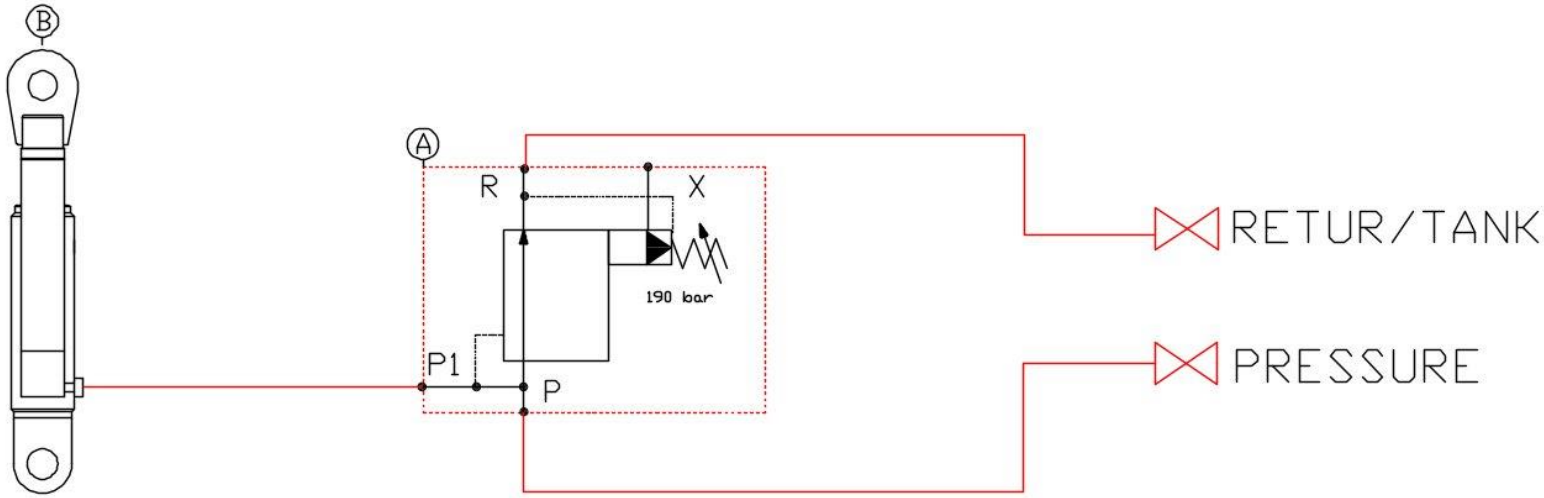
	FECHA	NOMBRE
DIBUJADO	01-10-2020	FRUTOS

Conjunto: Equipo de Frenos con **EBS E + PEM**

Denominación: **3 axles,1rst lift axle and 3rd self-steering axle.**

ZF Commercial Vehicle Solutions

TIPPER

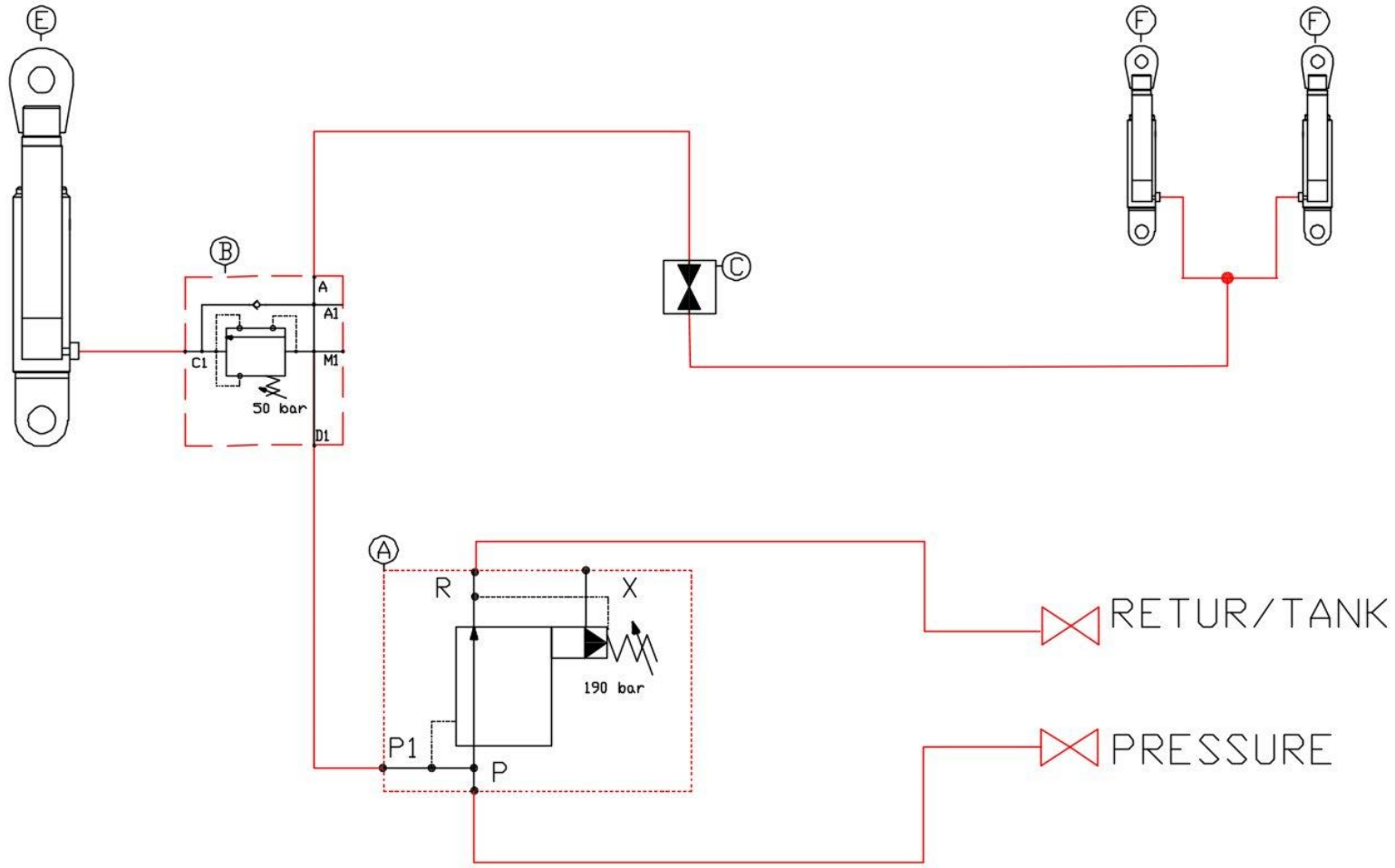


	FUNCTION	REFERENCE
A	FRONT SECURITY VALVE (OPTIONAL)	Non ref.
B	CYLINDER FRONT	SEE CYLINDER PLATE

Revisión		FORMATO HOJA		MATERIAL		REFERENCIA	H001
Fecha	DIBUJADO	CCC		PESO		TOLERANCIA SEGUN ISO 2768-v	
04-03-16	Nº PIEZAS POR VEHICULO:			TRATAMIENTO			
Escala:	Designación:	TIPPER				ROJO	
	Observaciones:						

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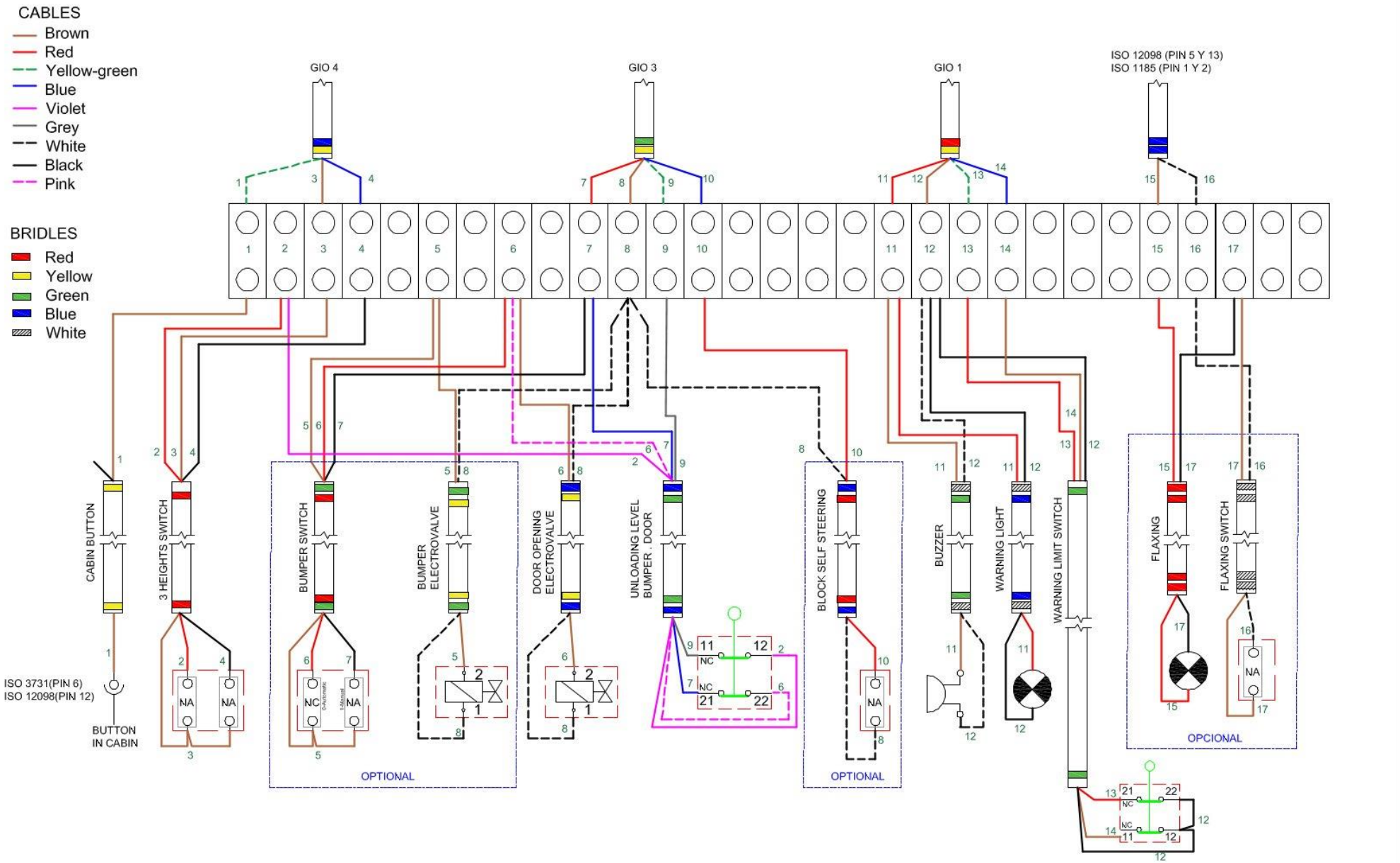
TIPPER (HYDRAULIC DOOR VERSION)



	FUNCTION	REFERECE
A	FRONT SECURITY VALVE	Non ref.
B	HIDRAULIC REAR DOOR OPENING	BEZARES ref. 9029890
C	BALL VALVE 90º	BECO ref. V2RH10
E	CYLINDER FRONT	SEE CYLINDER PLATE
F	CYLINDER DOOR	CICROSA ref. 640/4

Revisión		FORMATO HOJA		MATERIAL		REFERENCIA	H003
Fecha	DIBUJADO	CCC		PESO		TOLERANCIA SEGUN ISO 2768-v	
27/03/2020	Nº PIEZAS POR VEHICULO:			TRATAMIENTO			
Escala:	Designación:	HYDRAULIC DOOR				ROJO	
	Observaciones:						

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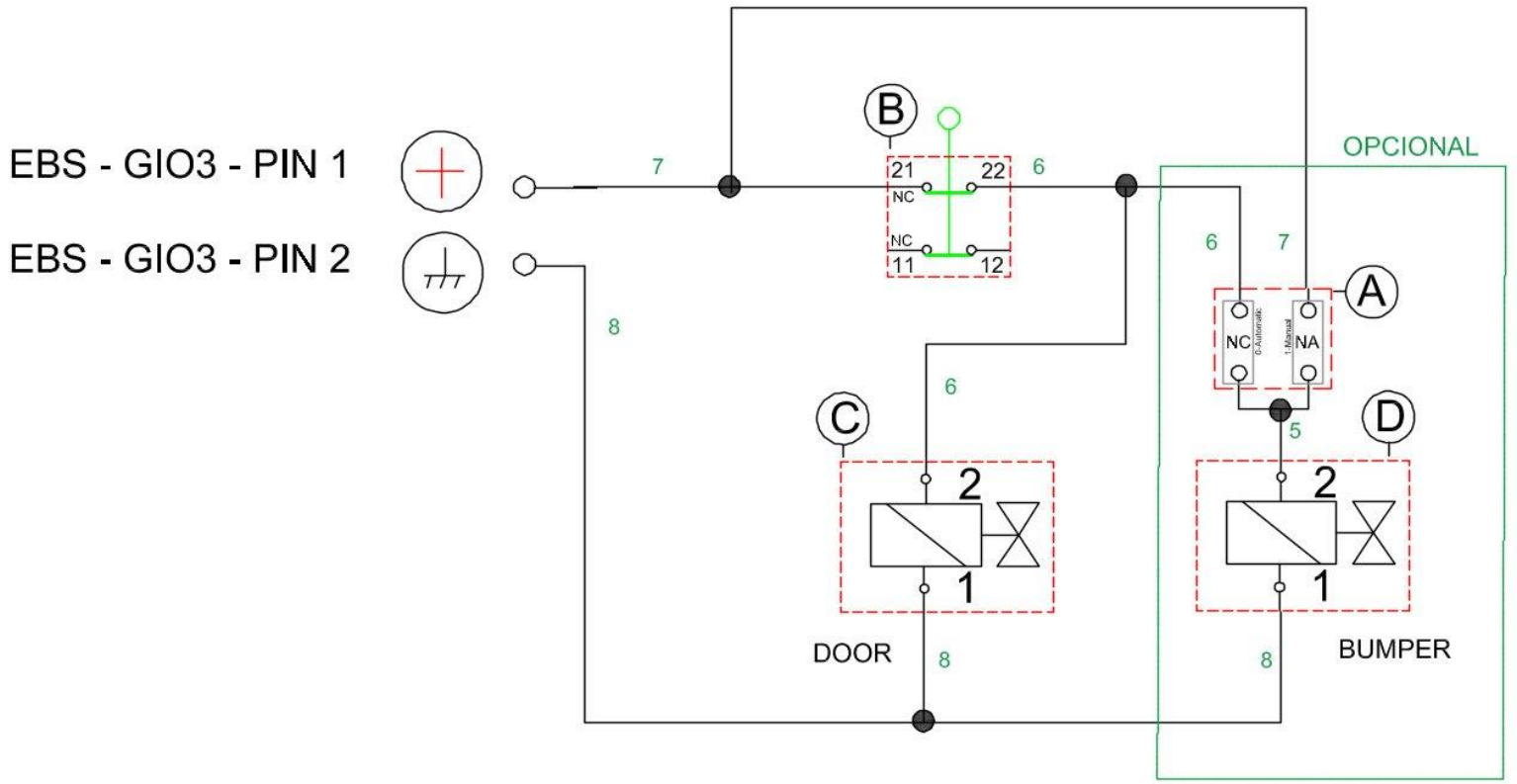


Revisión		FORMATO HOJA		MATERIAL	
Fecha	DIBUJADO	CCC		PESO	
28/03/22	Nº PIEZAS POR VEHICULO:			TRATAMIENTO	
Escala:	Designación:	CAJA CONEXIONES(WABCO)			
	Observaciones:				

REFERENCIA	E003A
TOLERANCIA SEGUN ISO 2768-v	
ROJO	

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AUTOMATIC DOOR OPENING AND BUMPER



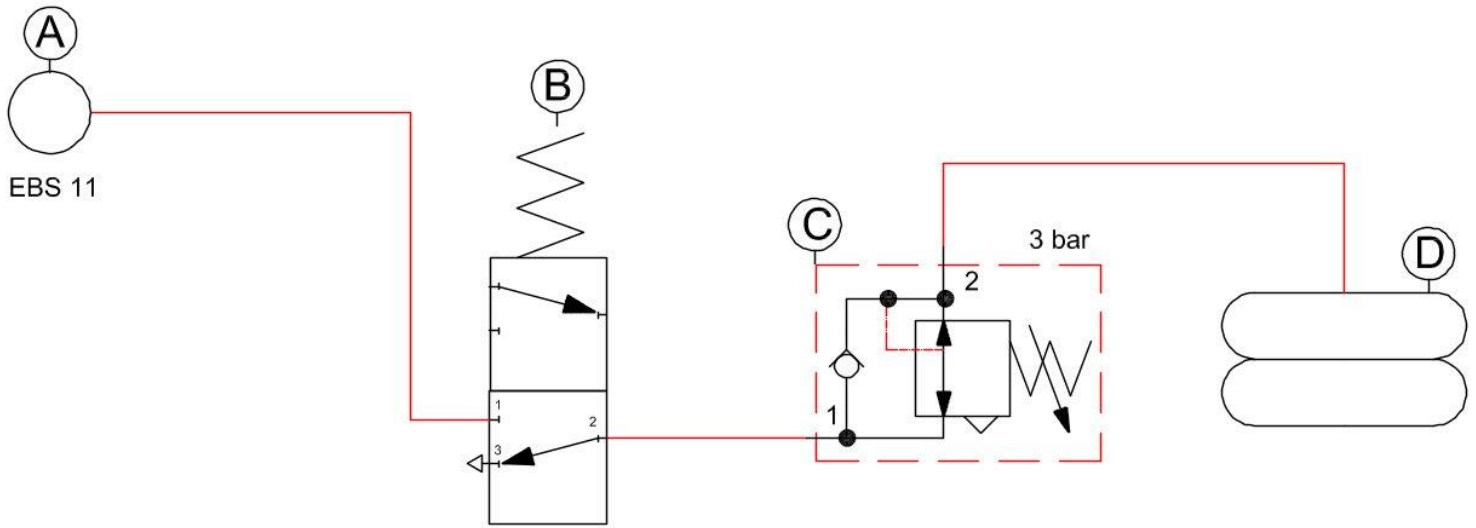
	FUNCTION	REFERENCE
A	SELECTOR SWITH.	SCHNEIDER ref. XALD134
		ZENL1121
		ZENL1111
B	LIMIT SWITH	TELEMECANIQUE ref.ZCKM7
		ZCKDO5
		ZCKY59
		XE2NP
C	ELECTROVALVE	ACCEVAL VEB-3
D	ELECTROVALVE	ACCEVAL VEB-2

Revisión		FORMATO HOJA		MATERIAL	
Fecha	DIBUJADO	CCC		PESO	
27/03/20	Nº PIEZAS POR VEHICULO:			TRATAMIENTO	
Escala:	Designación:	AUTOMATIC DOOR OPENING AND BUMPER			
	Observaciones:				

REFERENCIA	E003
TOLERANCIA SEGUN ISO 2768-v	
ROJO	

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AUTOMATIC BUMPER



	FUNCTION	REFERENCE
A	EBS E PREMIUM + PEM C/RAC	400 652 565 0
B	ELECTROVALVULA	ACCEVAL - VEB-2
C	PRESSURE REGULATOR	KNORR BREMSE- AC155F
D	AIR SPRING	CONTI - FD200-22 CI

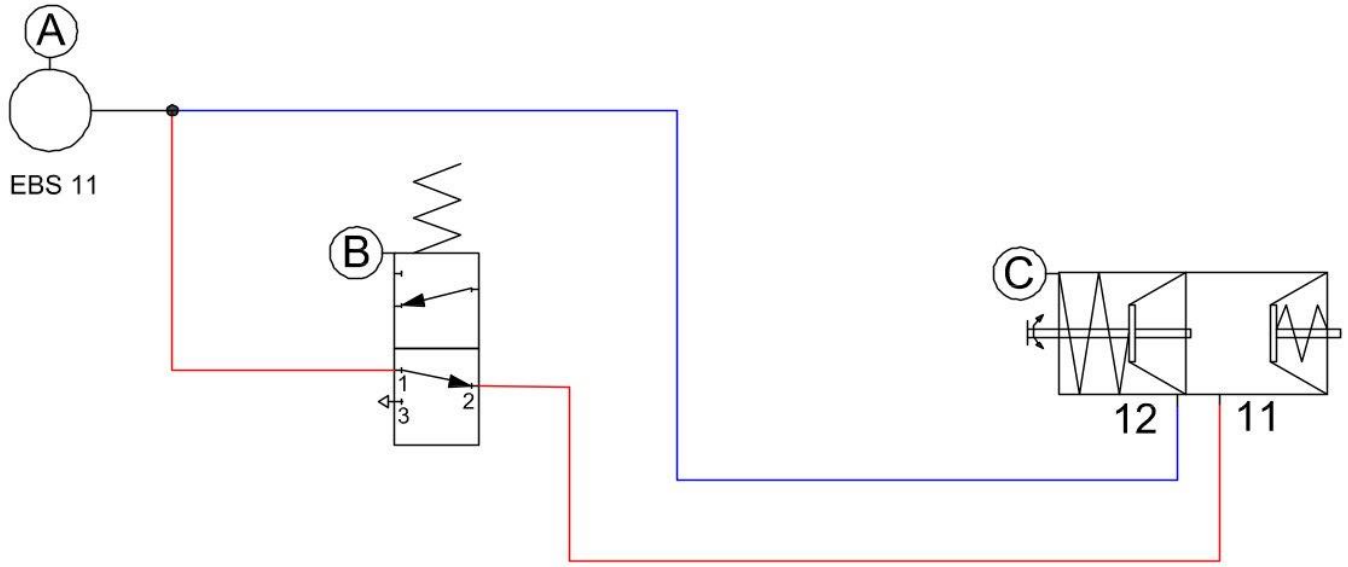
Revisión		FORMATO HOJA		MATERIAL	
Fecha	DIBUJADO	DSA		PESO	
26-11-20	Nº PIEZAS POR VEHICULO:			TRATAMIENTO	
Escala:	Designación:	AUTOMATIC BUMPER			
	Observaciones:				

REFERENCIA	N001_2
TOLERANCIA SEGUN ISO 2768-v	

ROJO

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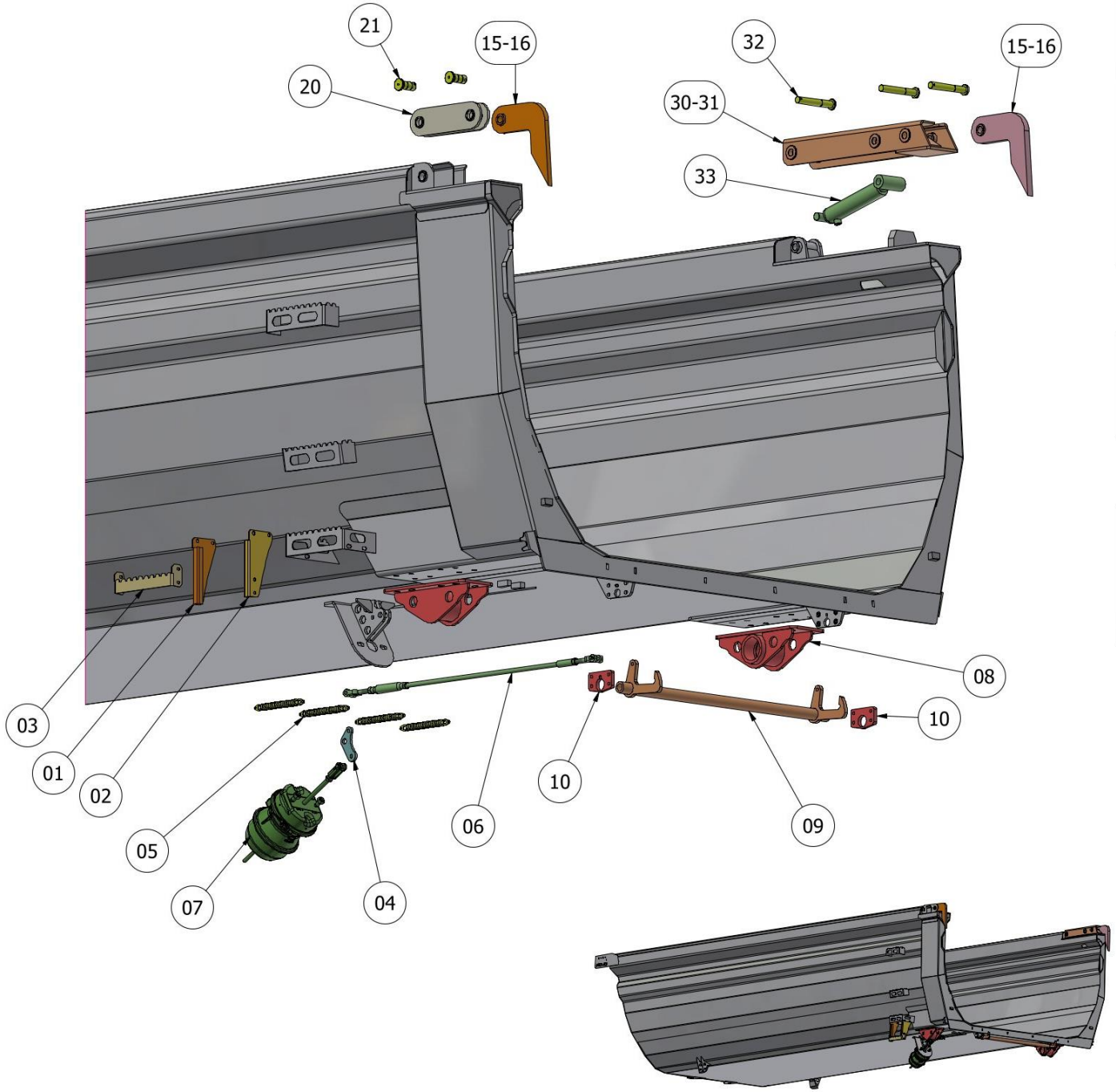
AUTOMATIC DOOR CLOSING



	FUNCTION	REFERENCE
A	EBS E PREMIUM + PEM C/RAC	400 652 565 0
B	ELECTROVALVE, 2/3	ACCEVAL VEB-3
C	DOUBLE DIAPHRAGM TRISTOP	WABCO- 925 377 124 0

Revisión		FORMATO HOJA		MATERIAL		REFERENCIA	N002_2
Fecha	DIBUJADO	DSA		PESO		TOLERANCIA SEGUN ISO 2768-v	
26/11/20	Nº PIEZAS POR VEHICULO:			TRATAMIENTO			
Escala:	Designación:	AUTOMATIC DOOR CLOSING				ROJO	
	Observaciones:						

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ALUHARD 500

Trailer VIN Number: . . . . . .

Door hinge. Common elements			
Nº	Item.	Description	Units ordered
01	001B51445	Left step extension.	
02	001B50750	Right step extension.	
03	001B51446	Step	
04	001B51002	Connecting rod	
05	000X00283	4 springs kit	
06	001B51438	Tension bar	
07	GOND0464	Pneumatic cylinder	
08	001B50928	Tipping point	
09	001B51439	Lower door lock	
10	001B00745	Lock bracket support	

Door hinge. double knot			
Nº	Item.	Description	Units ordered
20	001B51442	Double knot arm	
21	V72R0211	Axle	
15	001B51444	Aluminum weldable hinge	
16	001B51443	Iron weldable hinge	

Hydraulic door hinge			
Nº	Item.	Description	Units ordered
30	001B51440	Hydraulic door right arm	
31	001B51441	Hydraulic door left arm	
32	001b00686	Axle	
33	000X00285	Hydraulic cylinder	
15	001B51444	Aluminum weldable hinge	
16	001B51443	Iron weldable hinge	

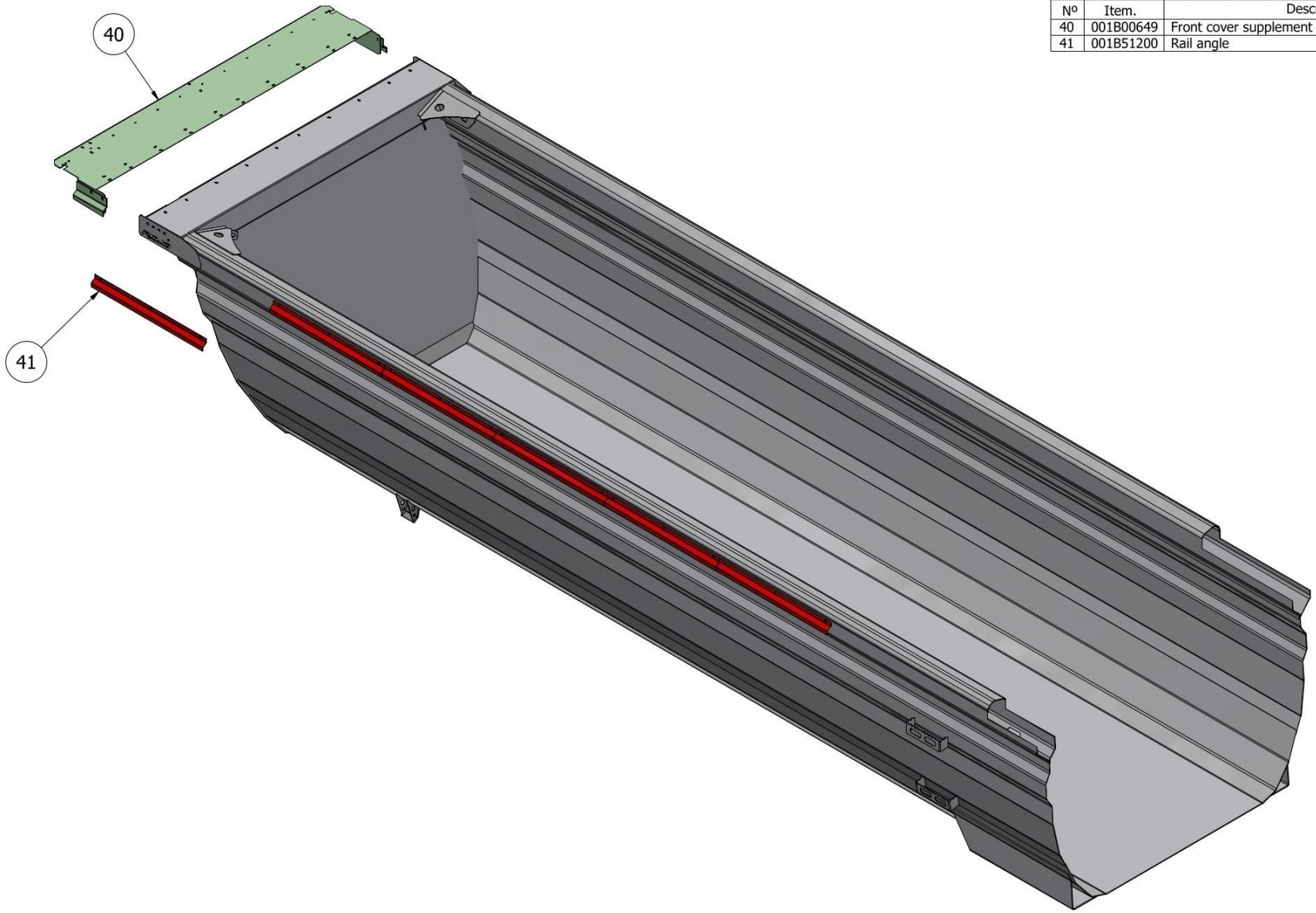
ROJO TRAILER

ALUHARD 500

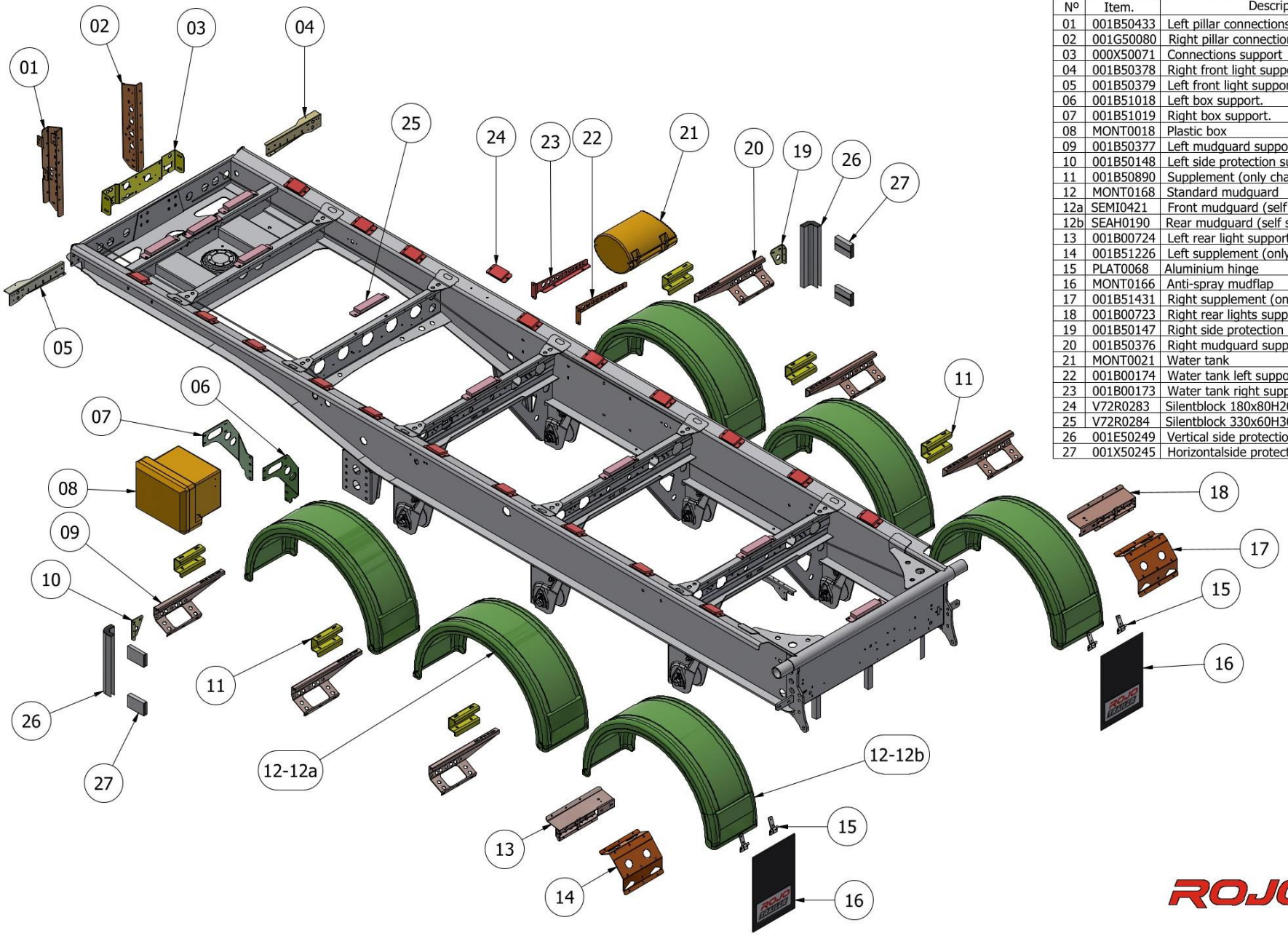
Trailer VIN Number: . . . . . .

Cramaro Roof

Nº	Item.	Description	Units ordered
40	001B00649	Front cover supplement	
41	001B51200	Rail angle	



ROJO TRAILER



ALUHARD 500

Trailer VIN Number: . . . . . .

Chassis accessories

Nº	Item.	Description	Units ordered
01	001B50433	Left pillar connections.	
02	001G50080	Right pillar connections.	
03	000X50071	Connections support	
04	001B50378	Right front light support.	
05	001B50379	Left front light support.	
06	001B51018	Left box support.	
07	001B51019	Right box support.	
08	MONT0018	Plastic box	
09	001B50377	Left mudguard support.	
10	001B50148	Left side protection support.	
11	001B50890	Supplement (only chassis 4x4)	
12	MONT0168	Standard mudguard	
12a	SEMI0421	Front mudguard (self steering)	
12b	SEAH0190	Rear mudguard (self steering)	
13	001B00724	Left rear light support.	
14	001B51226	Left supplement (only chassis 4x4)	
15	PLAT0068	Aluminium hinge	
16	MONT0166	Anti-spray mudflap	
17	001B51431	Right supplement (only chassis 4x4)	
18	001B00723	Right rear lights support.	
19	001B50147	Right side protection support.	
20	001B50376	Right mudguard support.	
21	MONT0021	Water tank	
22	001B00174	Water tank left support	
23	001B00173	Water tank right support	
24	V72R0283	Silentblock 180x80H20	
25	V72R0284	Silentblock 330x60H30	
26	001E50249	Vertical side protection	
27	001X50245	Horizontalside protection	

ROJO TRAILER

ALUHARD 500

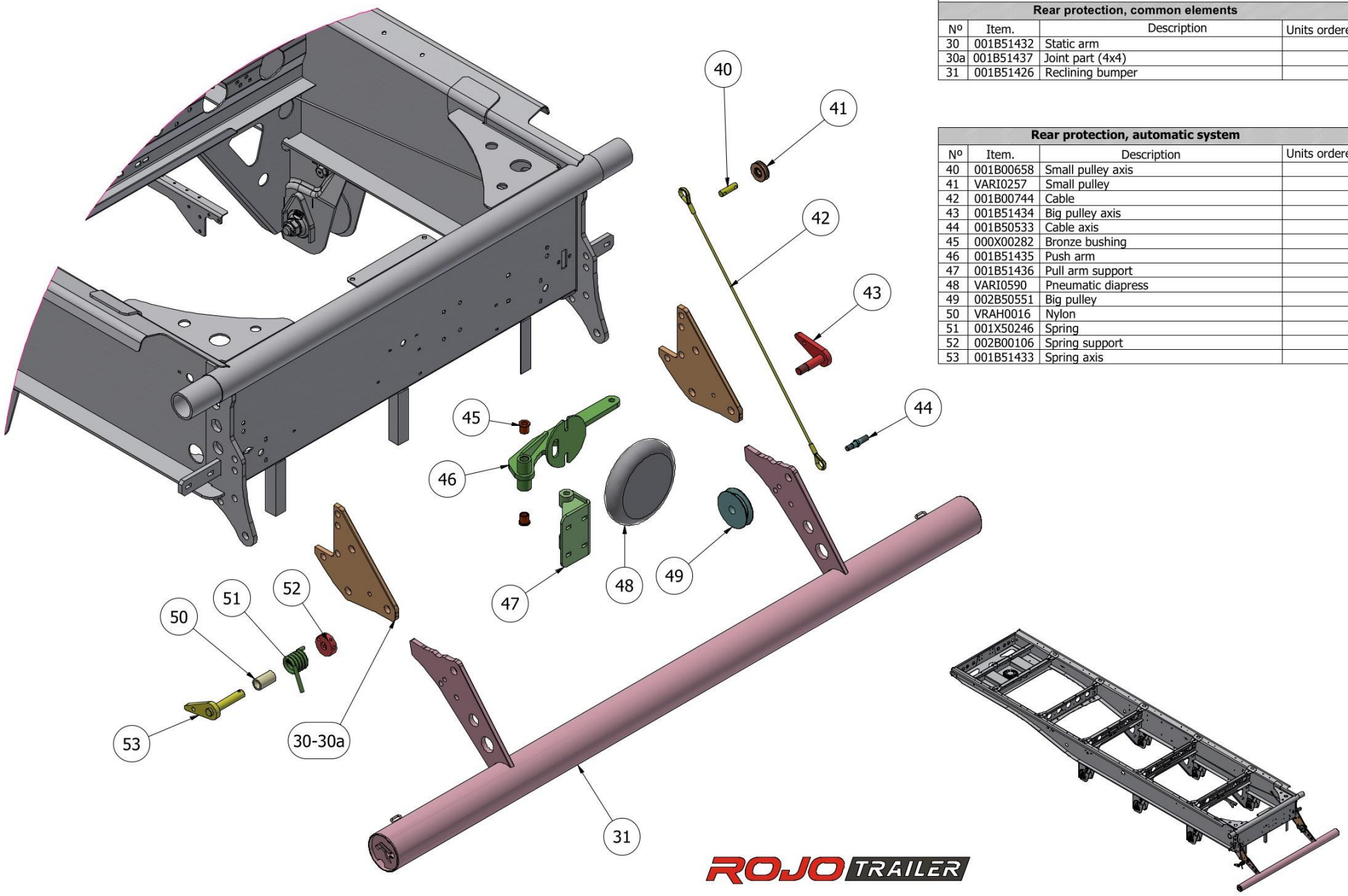
Trailer VIN Number: . . . . . .

Rear protection, common elements

Nº	Item.	Description	Units ordered
30	001B51432	Static arm	
30a	001B51437	Joint part (4x4)	
31	001B51426	Reclining bumper	

Rear protection, automatic system

Nº	Item.	Description	Units ordered
40	001B00658	Small pulley axis	
41	VARI0257	Small pulley	
42	001B00744	Cable	
43	001B51434	Big pulley axis	
44	001B50533	Cable axis	
45	000X00282	Bronze bushing	
46	001B51435	Push arm	
47	001B51436	Pull arm support	
48	VARI0590	Pneumatic diapress	
49	002B50551	Big pulley	
50	VRAH0016	Nylon	
51	001X50246	Spring	
52	002B00106	Spring support	
53	001B51433	Spring axis	



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