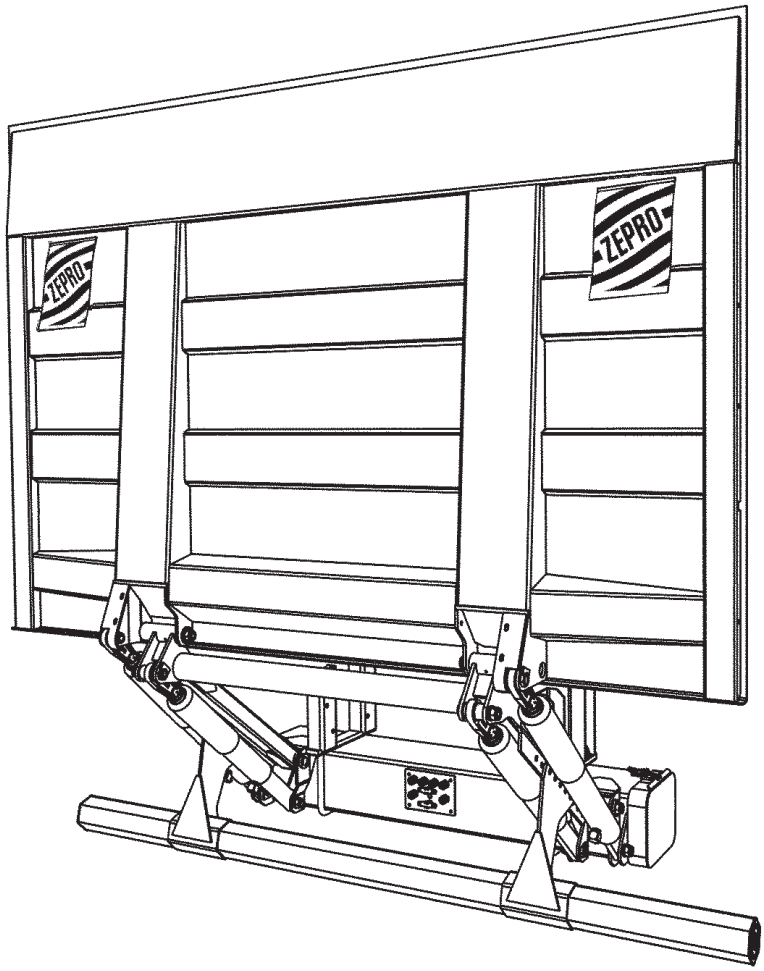
ZEPRO

Z-LYFTEN PRODUKTION AB

65889

INSTALLATION INSTRUCTION



BZ-10/15-130/149
BZ-20-150/152
BZ-15/20-154

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1. CE marking

CE

Since 1/1/1995 ZEPRO tail lifts sold to the European market are stamped with a CE mark. This is the manufacturer's guarantee that the product conforms to the European Machinery Directive.

The application of the European Machinery Directive is intended to harmonise product safety levels across Europe.

There are some general principals that should be made clear when performing the installation of ZEPRO lifts.

Follow the installation instructions. If it is not possible to follow the installation instructions or if modifications are required, the modifications must be approved by the manufacturer. This is a consequence of the CE marking regulations as it cannot be possible for a manufacturer to certify conformity to the Machinery Directive if the product is subsequently changed without his knowledge or approval. In order for the product's CE marking to remain applicable the forms supplied by ZEPRO must be completed in case of modification.

Welding is **not necessary** unless specifically recommended by the manufacturer.

In order to increase security, additional decals, which are diagrammatic and easily understood independent of language will be sent with the lifts.
Ensure that these decals are affixed so that the information contained on them is available for all users of the lift.

Position the control unit to ensure that the operator has a good view of the load, the working area and the loading area, whilst maintaining a safe distance from the risk zone between the platform and the body. Follow the operator’s instructions for use of the control unit and its functions.

2.1 Technical description

The ZEPRO-lift is electro-hydraulically driven. An electric motor which gets its power from the truck's ordinary battery drives a hydraulic pump which supplies oil via hoses and pipes to the working hydraulic cylinders. The system is steered by electrical valves. The hydraulic power unit with all details is built into the lift's support frame. The control system is built into a seperate box. Both systems are easy to reach for service and maintenance.
The platform is supported by the lift arm which is very strong and rigid. The underrun protection bar is directly attached to the support frame. The platform has a non-slip surface.
The lift arm lifting work is done by lift cylinders which have built in safety valves for protection against hose breakage. The lift cylinder circuit is equipped with 1 or 2 electric safety valves, which are leak-proof. These safety valves can also act as an extra transport lock for the platform. The valves are built into the cylinders.
The platform's tilt function is also provided by cylinders with similar design to the lift cylinders. Tilt cylinders can have one speed operation. The tilt cylinder circuit is also equipped with 1 or 2 electric safety valves. Lifting and tilting up speeds are fixed by the pump capacity. Lowering and tilting down speeds are controlled by special constant flow valves. These valve give the same speed independent of the load.
The cylinder piston rods are treated with carbon nitriding which gives them very long life.
The hydraulic system is protected with a pressure regulator when lifting or tilting up.
Note! This regulator does not prevent overload at rest position or lowering.

The electric power is taken from the truck's ordinary starter motor. Control current is taken from the dash board. When the control current's isolator (cabin) switch is off, the lift is "locked". Fixed control units are electrically heated to prevent condensation damage to switches.
To save current the control current should be switched off when the lift is not used.
The lift can also be operated from other, optional units.
To ensure safe operation even with very long control cables, the hydraulic unit is equipped with relays. The relays situated in the electrical connection box placed in the support frame steer current directly from the main cable to the valves and the main switch for the motor.
The electric motor is equipped with a thermostat which breaks the current if the motor becomes overheated. The motor will stop until it is cool again.
The platform can be tilted to all positions from vertical to 10° below the horizontal. It has a mechanical or electric lock which must be activate during transport.

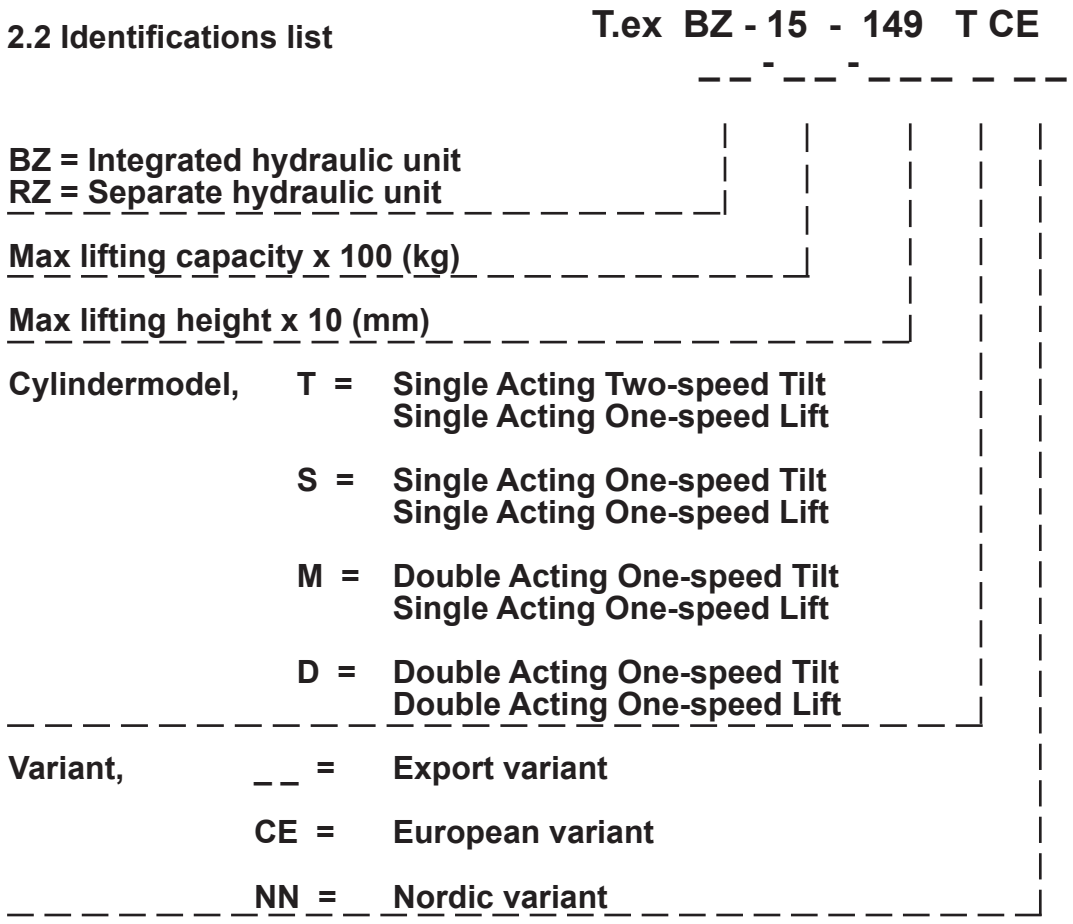
Hydraulic oil

A tail lift should operate just as well in tropical as in arctic climates. Heat does not adversely effect the hydraulic oil, however, low temperatures are more critical. ZEPRO therefore supply a hydraulic oil that meets the demands across the temperature range. ZEPRO oil (art.no 21963 for 1 litre) is made of a highly refined mineral oil, the lubricant additive is free from zinc and gives good protection against component wear. The hydraulic oil’s low temperature properties and high viscosity index allow hydraulic system start in a very cold climate and give reliable functioning with varying temperature conditions. With ZEPRO oil the hydraulic system also receives a very good protection against corrosion.

ZEPRO also has a biologically degradable oil (art. no 22235 for 1 litre) available which is based on a synthetic base oil. This also provides very good properties at low and high temperatures. It is even liquid down to -50° C. Resistance to oxidation is extremely good which gives long lifetime with longer intervals between oil changes. Good filtration and air seperation together with low density make the oil easy to pump. This minimises risk for cavitation and development of scum. Contact us for more information.

NB. Neither ATF nor HF oil should be used in the ZEPRO hydraulic circuit as they can damage the rubber in the sealing kits and reduce their lifetime.

2.2 Identifications list

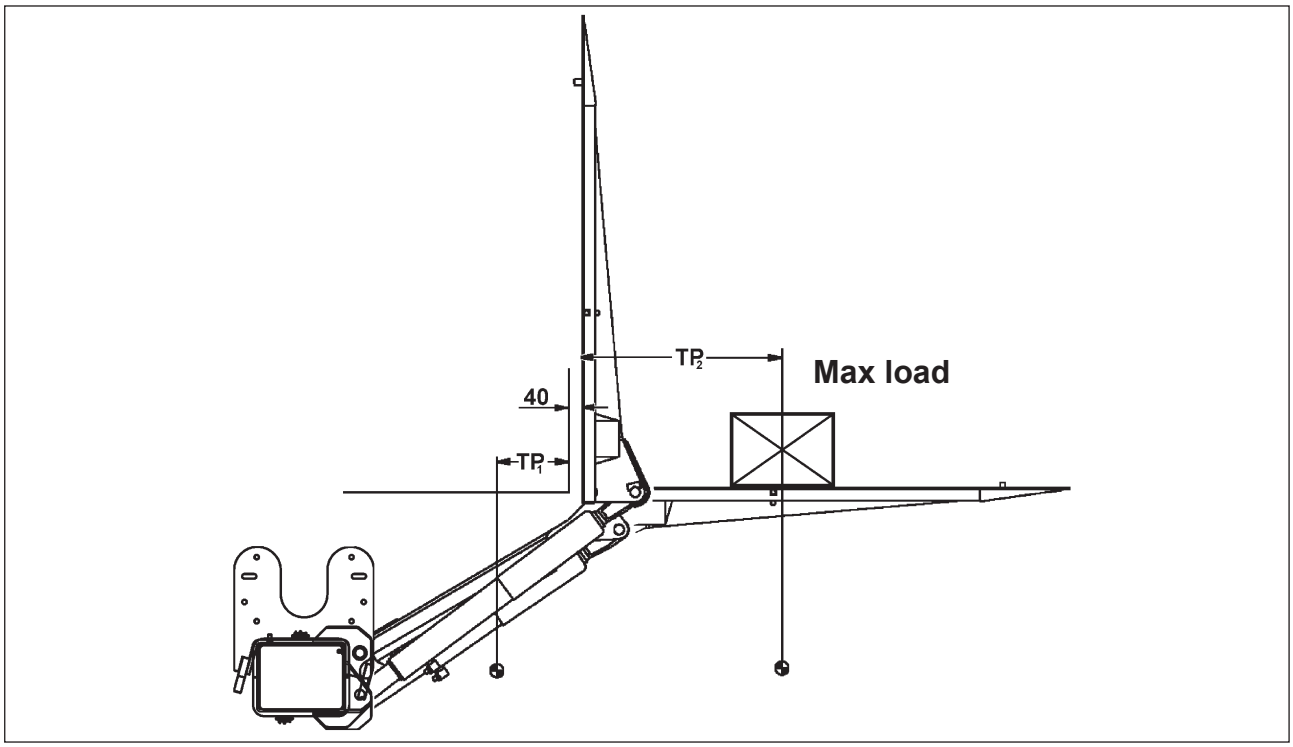


2.3 Weights

Some components of the tail lift must be manipulated by ceiling cranes and therefore could represent hazards if their weights exceed the crane's permitted load. The following are the ranges of weights for various heavy components.

Steel Platform 1700 x 2540 mm	250 kg
Steel Platform 2000 x 2540 mm	265 kg
Aluminium Platform Conical 1655 x 2540 mm	125 kg
Aluminium Platform Conical 1785 x 2540 mm	135 kg
Aluminium Platform Flat Reinforced 1600 x 2540 mm	131 kg
Aluminium Platform Flat Reinforced 1850 x 2540 mm	163 kg
Aluminium Platform Flat Reinforced 1615 x 2540 mm	161 kg
Aluminium Platform Flat Reinforced 1865 x 2540 mm	179 kg
2000 kg Lift chassis (incl. cylinders)	290-315 kg
Hydraulic units	23-28 kg
Bumper bar hexangonal tube	21 kg
Fixed 3 pt. bumper bar cent. console	22 kg
Fixed 3 pt. bumper bar side console	10 kg
Lift arm	50-66 kg
Cylinders	18-23 kg

2.4 Centre of gravity



BZ-10-130, BZ-15-130, BZ-20-131 , steel platform 1500x2540 mm

	C = 320	C = 435	C = 550
TP_1(mm)	266	232	191
TP_2(mm) 1000kg	368	379	397
TP_2(mm) 1500kg	426	434	448

BZ-10-149, BZ-15-149, steel platform 1500x2540 mm
BZ-20-150, BZ-15-154, BZ-20-154, BZ-20-152

	C = 360	C = 500	C = 640
TP_1(mm)	334	292	230
TP_2(mm) 1500kg	335	350	371
TP_2(mm) 2000kg	400	411	428

2.5 Max Power Consumption

BZ-10-130/149 (130 bar)
BZ-15-130/149 (170 bar)
BZ-20-131/ 152 (170 bar)

6400 (130 bar)	12 volt	24 volt
Pump - Motor Unit	180 A	100 A
Lowering valve	1,4 A	0,7 A
Shift valve	3,8 A	2,0 A
Magnet (electric safety valve)	1,5 A	0,75 A
Solenoid	1,8 A	0,9 A
Cable area:		
Control cable	1,5 mm^2	1,5 mm^2
Main cable <8 m	35 mm^2	35 mm^2
Main cable 8-15 m	35 mm^2	35 mm^2
Main cable >15 m	-	35 mm^2
Power source:		
Min. capacity	180 Ah	170 Ah
Min. voltage	9 Volt	18 Volt

6400 (170 bar)	12 volt	24 volt
Pump - Motor Unit	220 A	120 A
Lowering valve	1,4 A	0,7 A
Shift valve	3,8 A	2,0 A
Magnet (electric safety valve)	1,5 A	0,75 A
Solenoid	1,8 A	0,9 A
Cable area:		
Control cable	1,5 mm^2	1,5 mm^2
Main cable <8m	35 mm^2	35 mm^2
Main cable 8-15m	35 mm^2	35 mm^2
Main cable >15m	-	35 mm^2
Power source:		
Min. capacity	180 Ah	170 Ah
Min. voltage	9 Volt	18 Volt

BZ-20-150

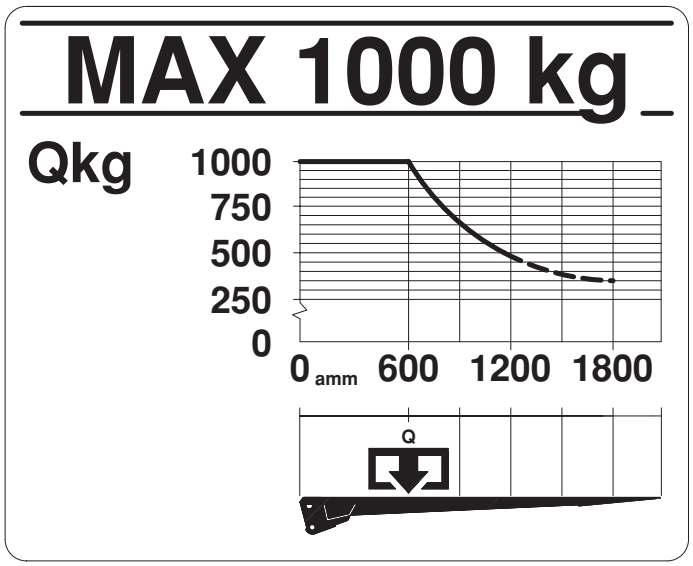
6402 (170 bar)	12 volt	24 volt
Pump - Motor Unit	220 A	120 A
Lowering valve	1,4 A	0,7 A
Shift valve	3,8 A	2,0 A
Magnet (electric safety valve)	1,5 A	0,75 A
Solenoid	1,8 A	0,9 A
Cable area:		
Control cable	1,5 mm^2	1,5 mm^2
Main cable <8m	35 mm^2	35 mm^2
Main cable 8-15m	35 mm^2	35 mm^2
Main cable >15m	-	35 mm^2
Power source:		
Min. capacity	180 Ah	170 Ah
Min. voltage	9 Volt	18 Volt

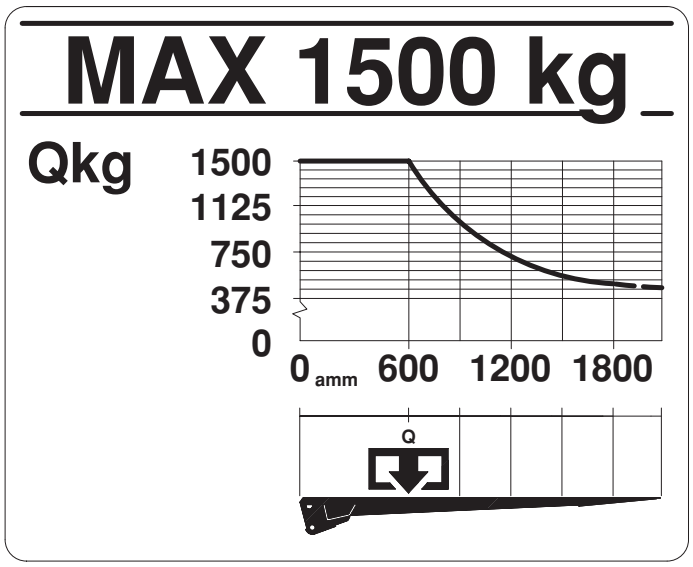
BZ-15/20-154

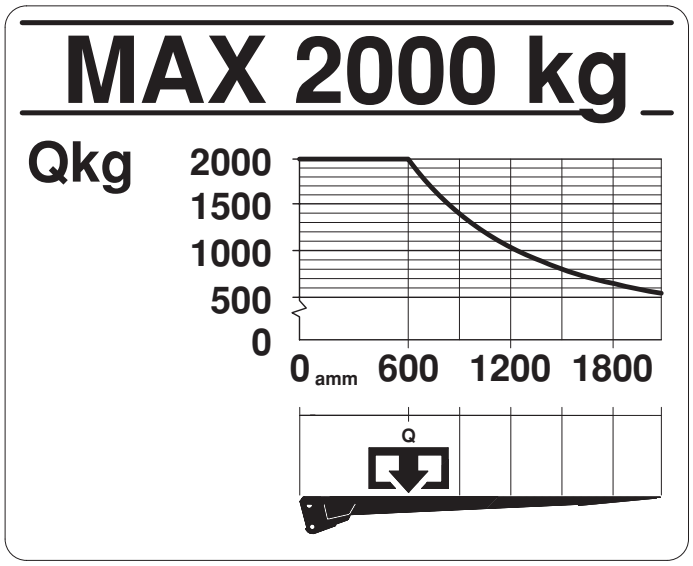
6404 (130 bar)	12 volt	24 volt
Pump - Motor Unit	215 A	115 A
Lowering valve	1,4 A	0,7 A
Shift valve	3,8 A	2,0 A
Magnet (electric safety valve)	1,5 A	0,75 A
Solenoid	1,8 A	0,9 A
Cable area:		
Control cable	1,5 mm^2	1,5 mm^2
Main cable <8 m	35 mm^2	35 mm^2
Main cable 8-15 m	35 mm^2	35 mm^2
Main cable >15 m	-	35 mm^2
Power source:		
Min. capacity	180 Ah	170 Ah
Min. voltage	9 Volt	18 Volt

6404 (170 bar)	12 volt	24 volt
Pump - Motor Unit	260 A	145 A
Lowering valve	1,4 A	0,7 A
Shift valve	3,8 A	2,0 A
Magnet (electric safety valve)	1,5 A	0,75 A
Solenoid	1,8 A	0,9 A
Cable area:		
Control cable	1,5 mm^2	1,5 mm^2
Main cable <8 m	35 mm^2	35 mm^2
Main cable 8-15 m	35 mm^2	35 mm^2
Main cable >15 m	-	35 mm^2
Power source:		
Min. capacity	180 Ah	170 Ah
Min. voltage	9 Volt	18 Volt

2.6 Loading Diagram

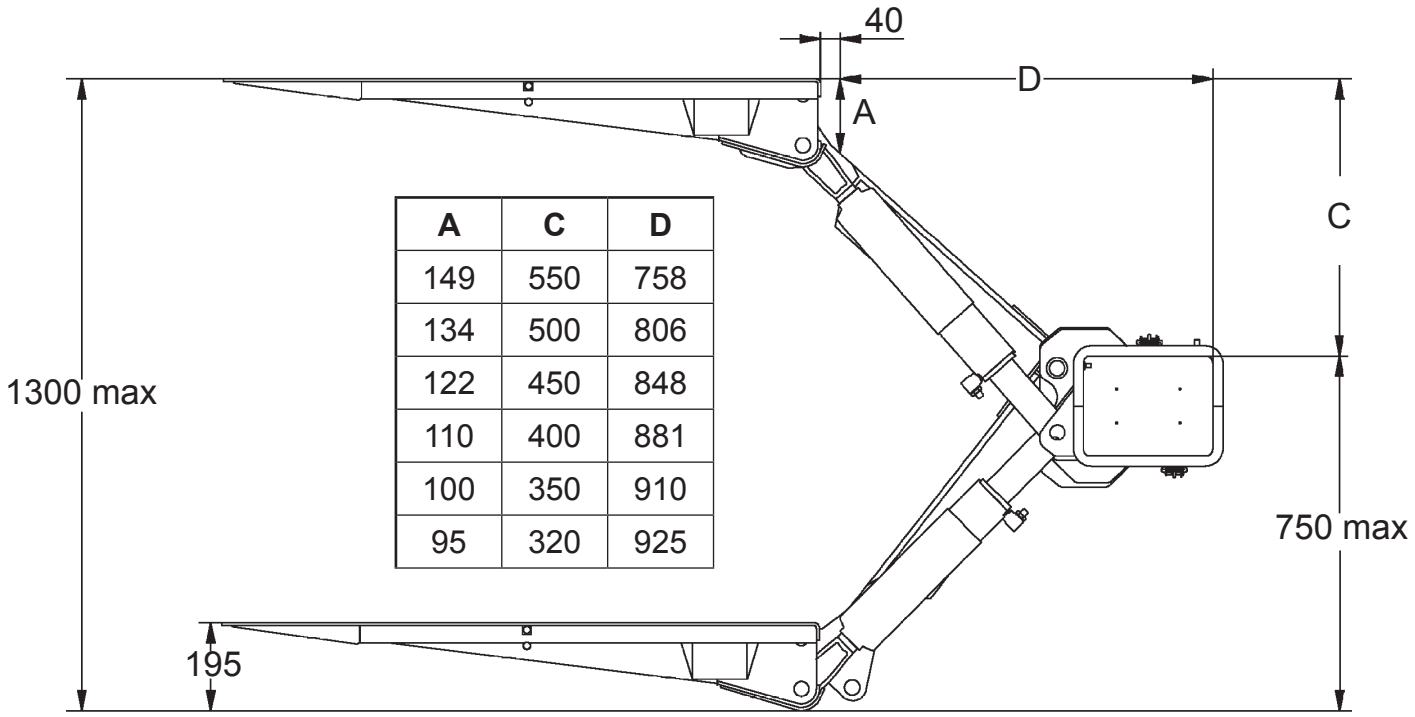






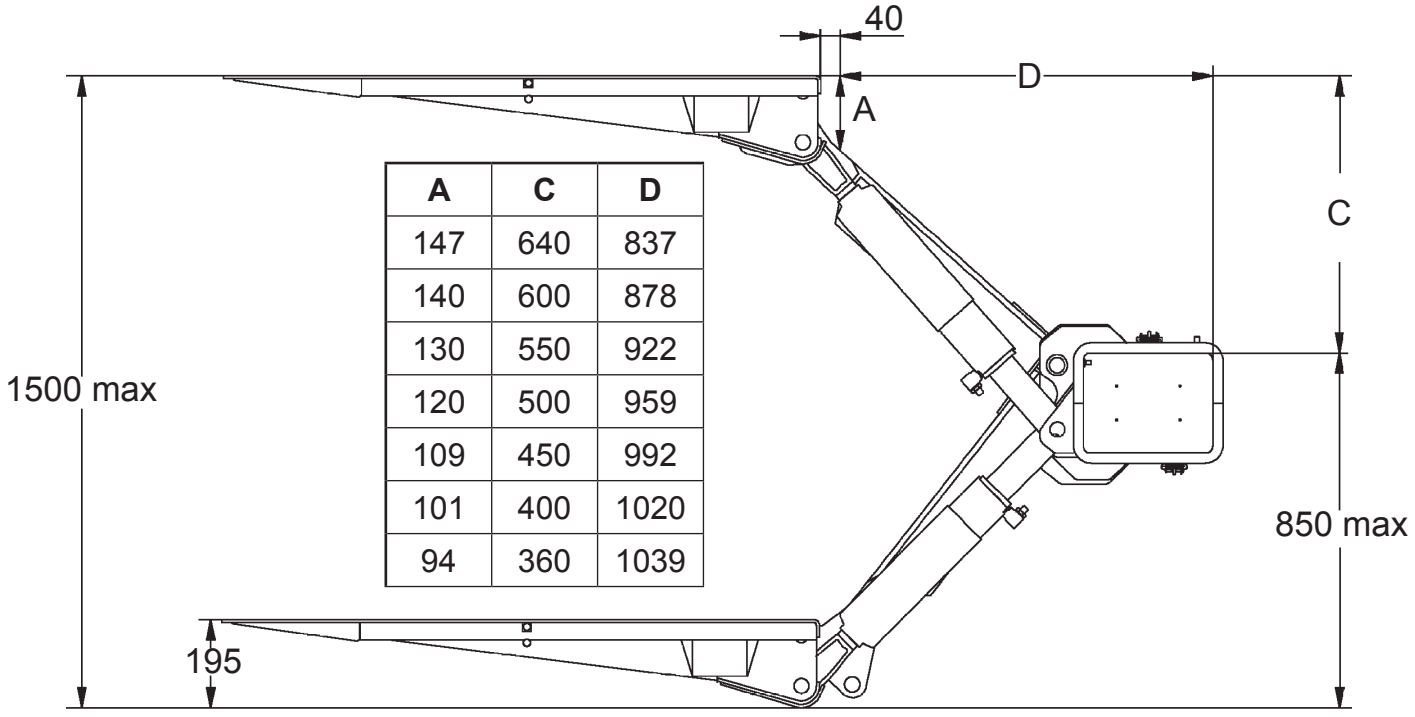
3. Dimensions for installation

BZ-10-130, BZ-15-130, BZ-20-131



A	C	D
149	550	758
134	500	806
122	450	848
110	400	881
100	350	910
95	320	925

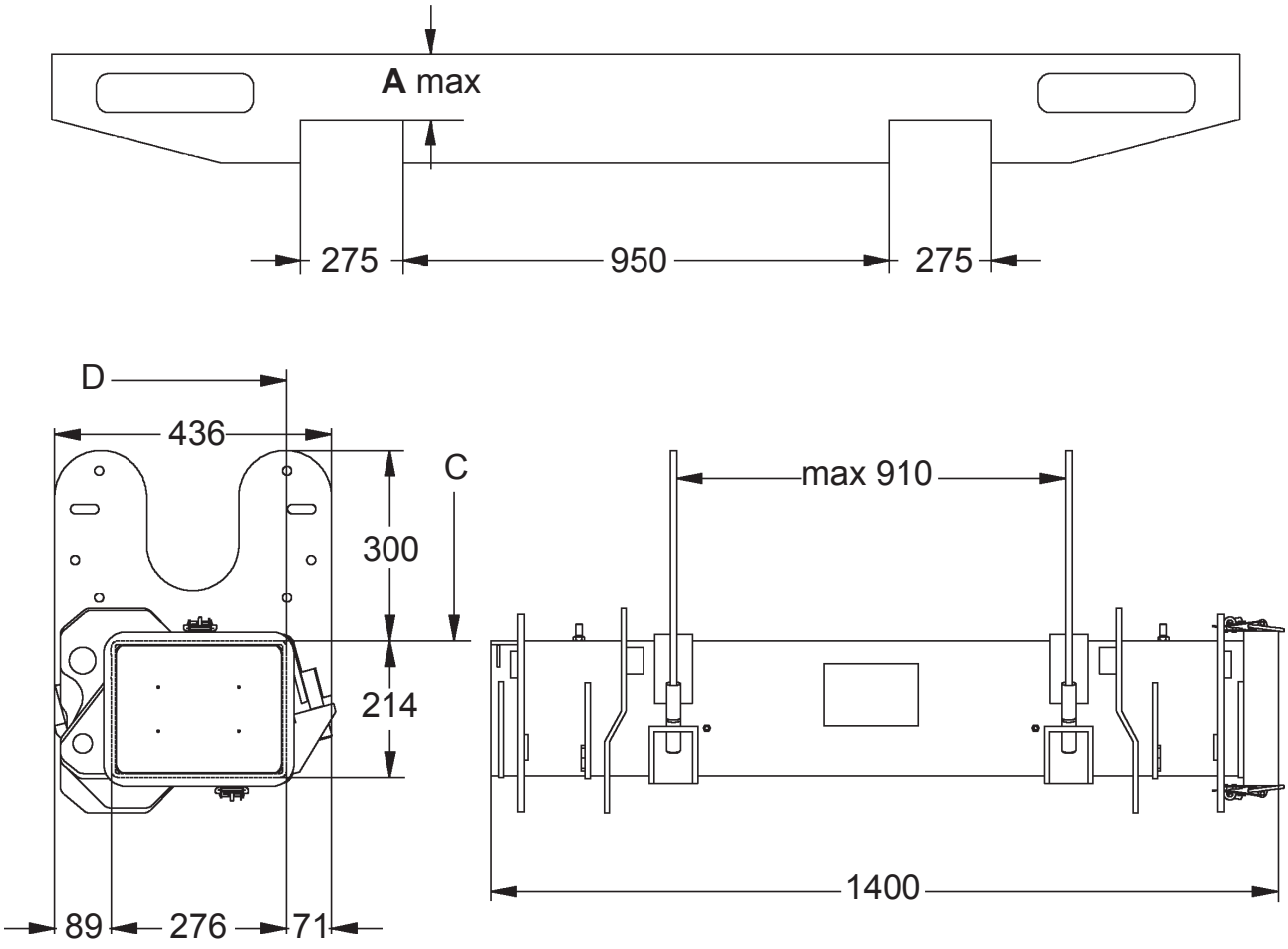
BZ-10-149, BZ-15-149, BZ-15-154
BZ-20-150, BZ-20-154, BZ-20-152



A	C	D
147	640	837
140	600	878
130	550	922
120	500	959
109	450	992
101	400	1020
94	360	1039

3. Dimensions for installation

BZ-10-130, BZ-15-130
BZ-10-149, BZ-15-149, BZ-15-154
BZ-20-150, BZ-20-154, BZ-20-152

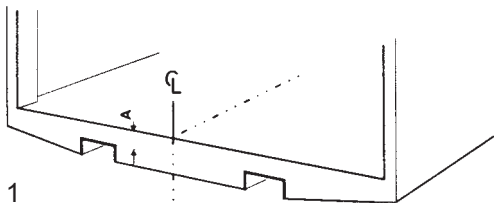


4. Installation support frame

Attention! Also refer to the truck manufacturer´s instructions for auxiliary equipment

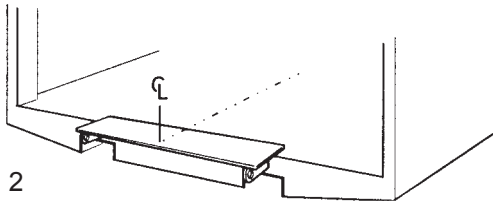
4 Preparation/support frame

4.1 Measure out and mark the centre point of the truck's rear frame. **See picture 1**.



Pict. 1

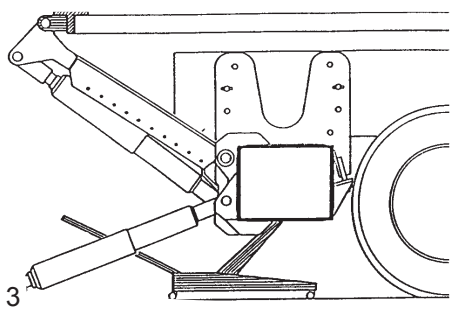
4.2 Fasten the jig with bolts or spot weld it to the rear frame so that the middle points line up. **See picture 2**.



Pict. 2

4.3 Make the notches as required in the rear beam in accordance with the measures on previous pages.
4.4 Place the support frame of the lift under the frame of the truck and fit the lift arms to the installation jig. Use the specified platform pivot bolt.
Note the steel pipes inside the bushings.
4.5 Position the support frame as required under the truck's chassis frame (a wheeled jack is a good aid). **See picture 3**.

Installation jig art. nr. 60536 for BZ-10/15/20



Pict. 3

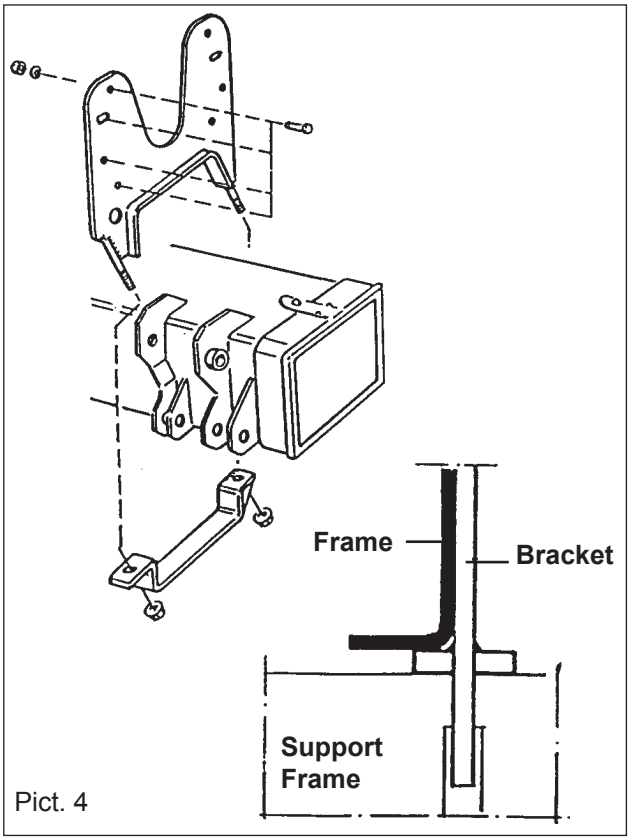
The support frame ought to be positioned as high as possible. Note the measures on previous pages.
The support frame must be parallel with the chassis frame, but it must not be pressed against the frame. There must be some mm between.

If it is difficult to get the support frame into its right position, loosen a hydraulic hose from one lift cylinder to let oil or air out.

The brackets shall be turned according to picture. Place the brackets towards the frame, see picture 4. Drill 14mm holes in the frame in the middle of the oval holes of the bracket. Then fasten, the brackets hard towards the frame with delivered M14 bolts. Square washers under the bolt heads. Washers under the bolts. Fasten the brackets crosswise towards the frame. See picture. After test of the level of the lift in proportion to platform or chassie, drill 6 remaining holes in the frame on each side and fasten the brackets.

Torque for respectively bolt:

Frame bolts 115 Nm.
Pin bolts 280 Nm.



Pict. 4

4.7 Loosen the installation jig.

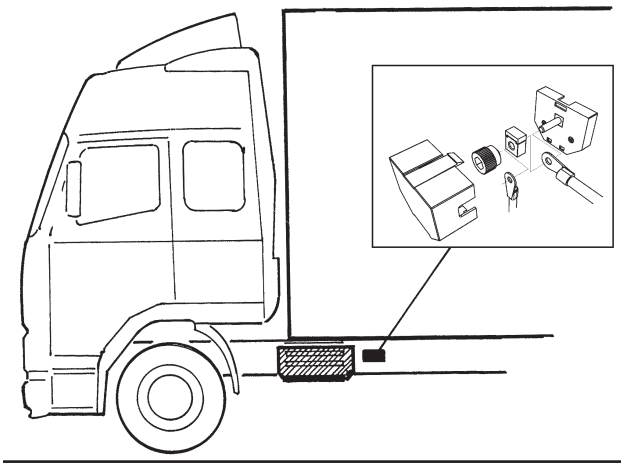
5 Electrical installation
Install control units at suitable places, but the position of the control unit should ensure that the operator has a good view of the load, the working area and the loading area, whilst maintaining a safe distance from the risk zone between the platform and the body. Note that all cables must be connected from below so that water can´t get into the units but condensation can drain out.
Fixed control units are normally electrically heated. The heating cable must be well earthed. Note that 12V (black) and 24 V (red) has different heating cables.

Drainage pipe for the fixed control unit should be installed as per the diagram below (horizontally or vertically)

All control units must be connected in parallel.
The control cable is connected to the circuit card in the hydraulic unit (see electric schema).
Install the control current cable from the dashboard of the truck according to the customers requirements. The control current swich should be located so it is possible to be reached from the ground 10 A (24 V), 15 A (12 V) fuse between the current source and the switch.
The control current cable is connected to a fixed control unit. You can fasten the cable together with the main cable to the hydraulic unit.
Connect the main power cable to the battery (+) of the truck. The cable should be protected with a plastic sheath. It must not be fastened together with brake pipes or other electric cables of the truck. When passing through holes the cables must be protected with rubber bushings.

A 160 A (24 V) or 250 A (12 V) fuse is to be installed on the main power cable running from the battery compartment**. This acts to protect the electrical systems from overloading and the risk of fire.

**Note! The fuse should be placed on a well protected place and as near as possible to the battery.

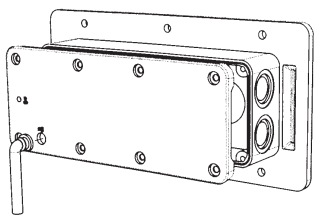


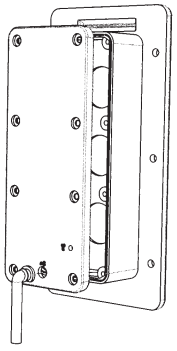
If you have a spiral cable unit, its cable colours are different (see table below):
If you want an electrically heated spiral cable unit you can order a 5-part cable (spare-part no 21303). Note that the spiral cable unit must have its fastening plate for the wall (spare-part no 20302).
Check that the hydraulic unit is well earthed according to truck manufacturer´s instructions (earthing is made through leading in plate, se picture).

If you must lead a spiral cable up through the floor you must protect it with a sheath up from the floor.
If you need to use power from the circuit card +ve connection point a fuse must be installed, eg. overload alarm 7.5 Ampere.
Test run all functions from all control units.

Alarm for open platform
The alarm has a red lamp, which lights if the platform is not pressed against the back of the truck.
The arrangement is:

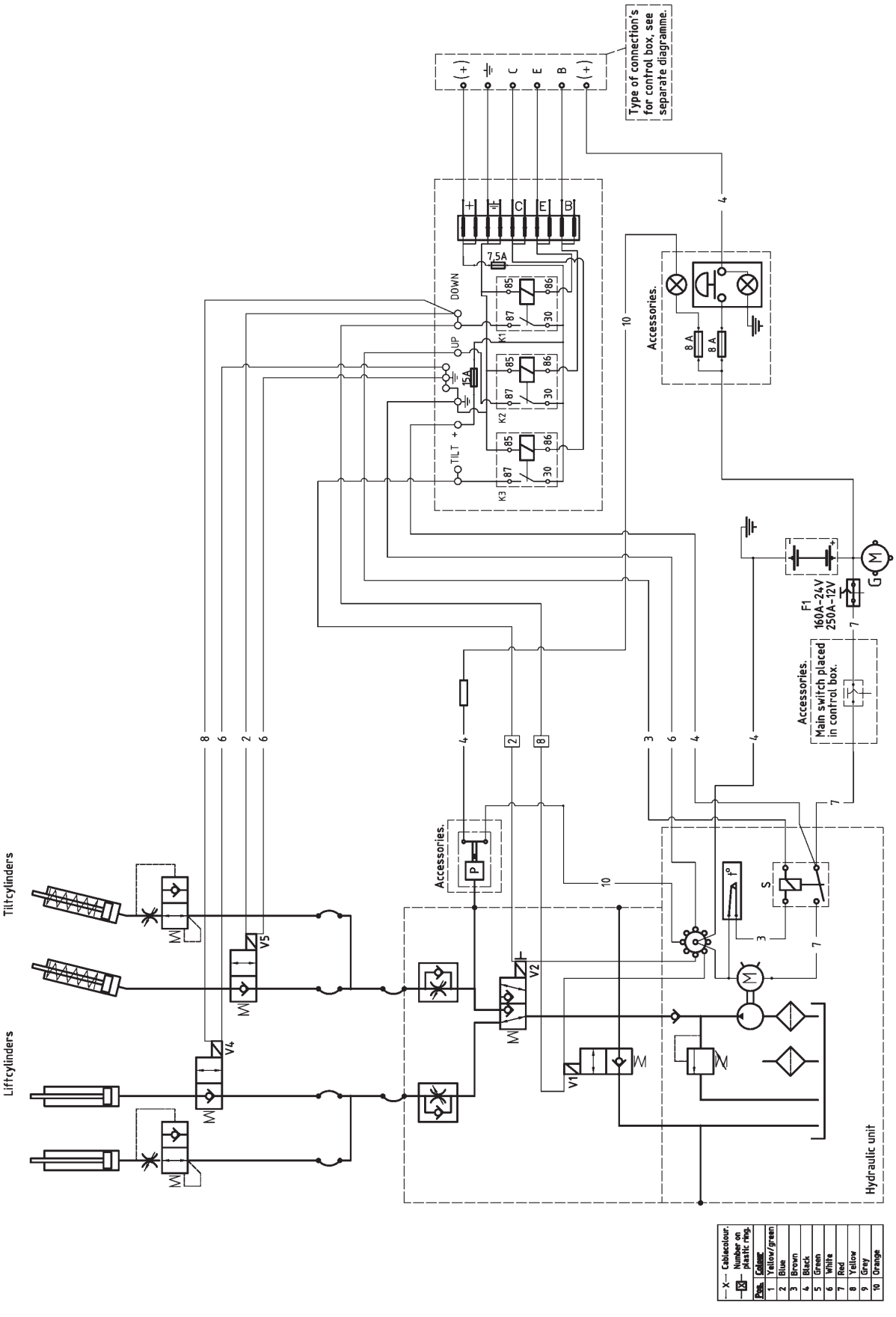
*Pressure guard on the tilting system.
*Cable to the dashboard.
*Fuse.
*Warning lamp 12 or 24 V
Testing
Switch the starter key on when the lift platform is tilted up and pressed against the back side. The warning lamp shall not be actuated.
Tilt the platform out a little from the back. The lamp shall light.
Switch the start key off. The lamp shall darken.
Switch the starter key on and the lamp shall be actuated.
Shut the platform very well and the lamp shall darken.





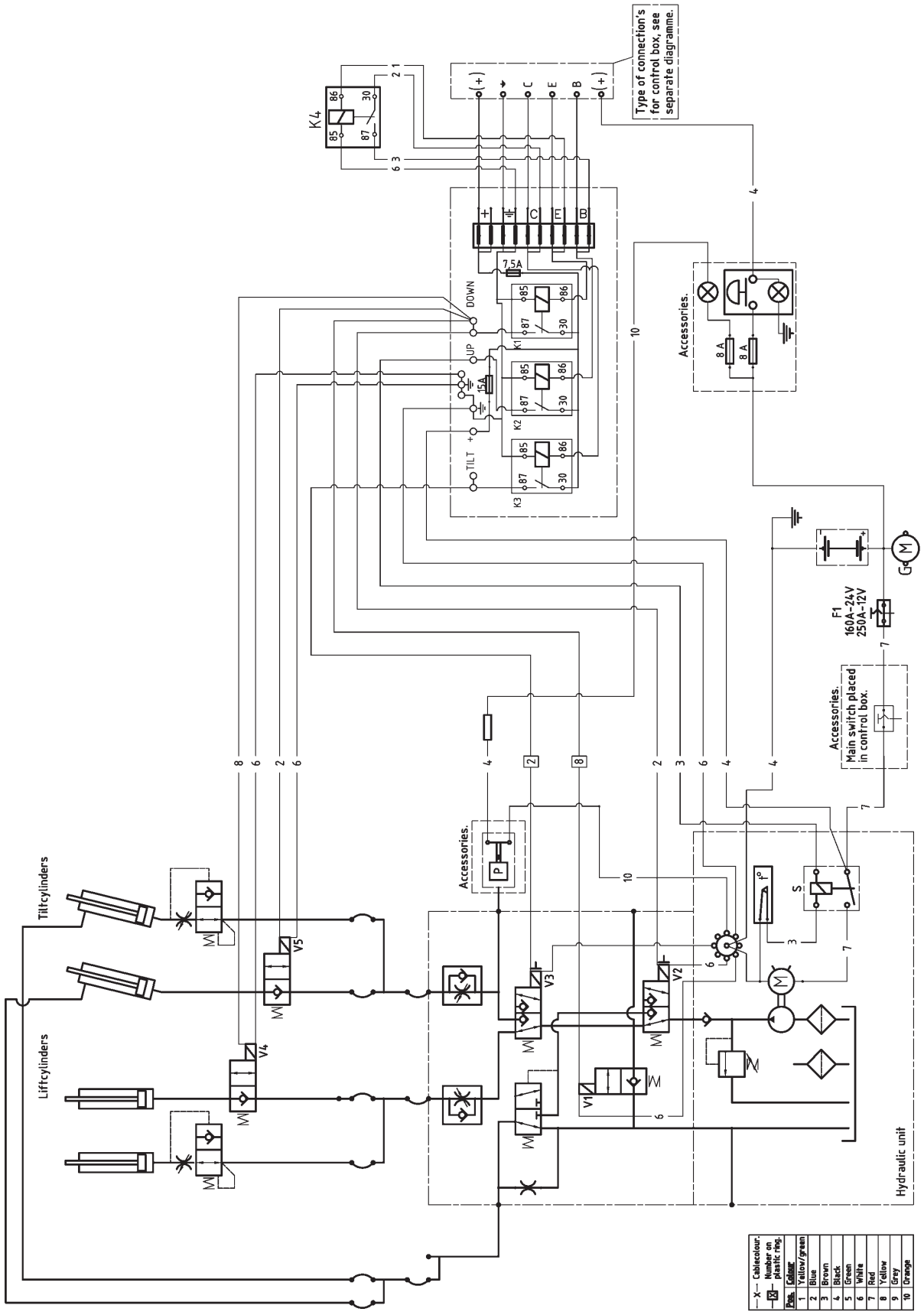
5. Electric and hydraulic diagram

BZ-10/15-130/149, BZ-20-131/152



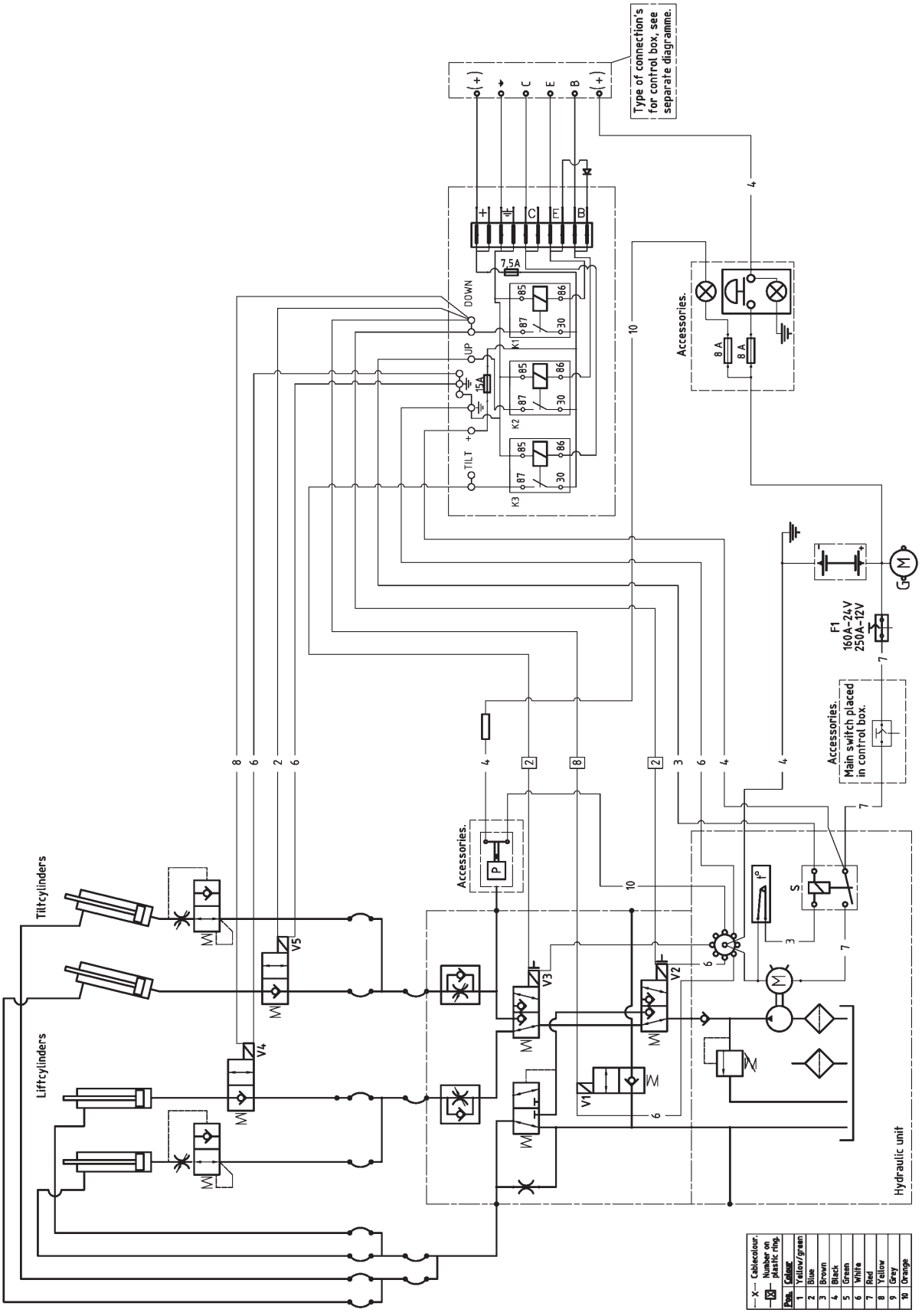
5. Electric and hydraulic diagram

BZ-20-150

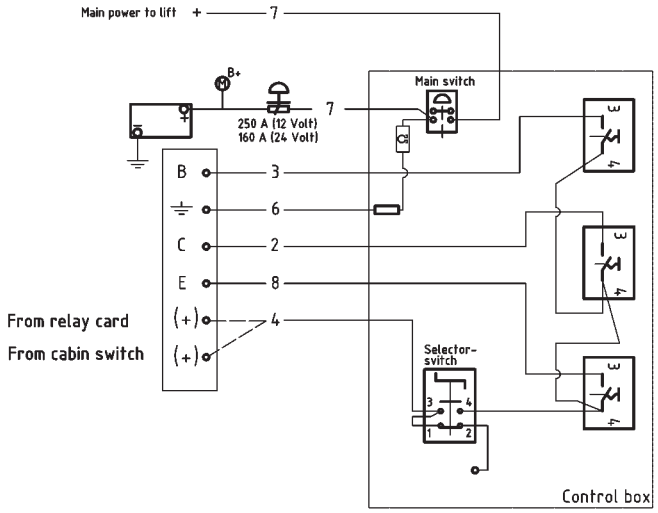


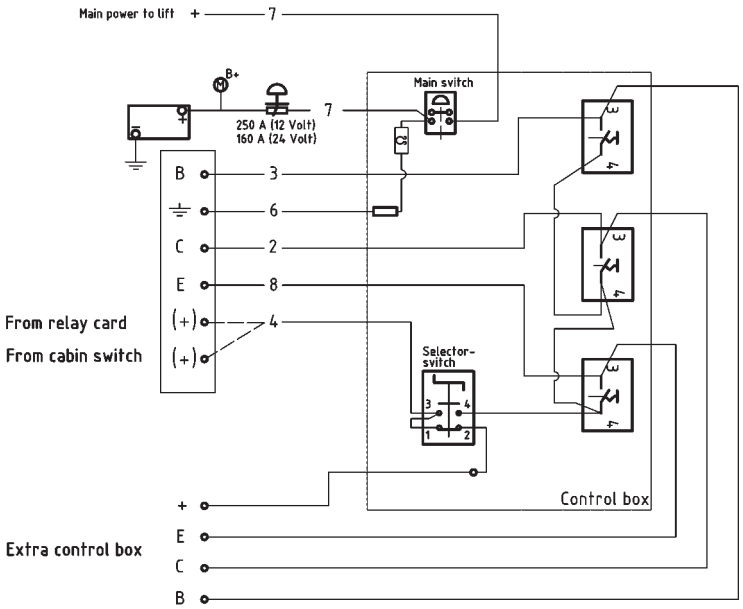
5. Electric and hydraulic diagram

BZ-15/20-154

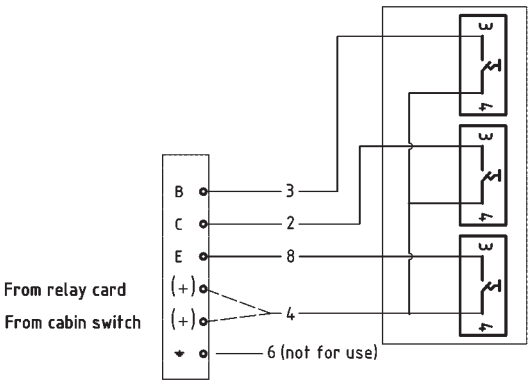


5. Electric and hydraulic diagram

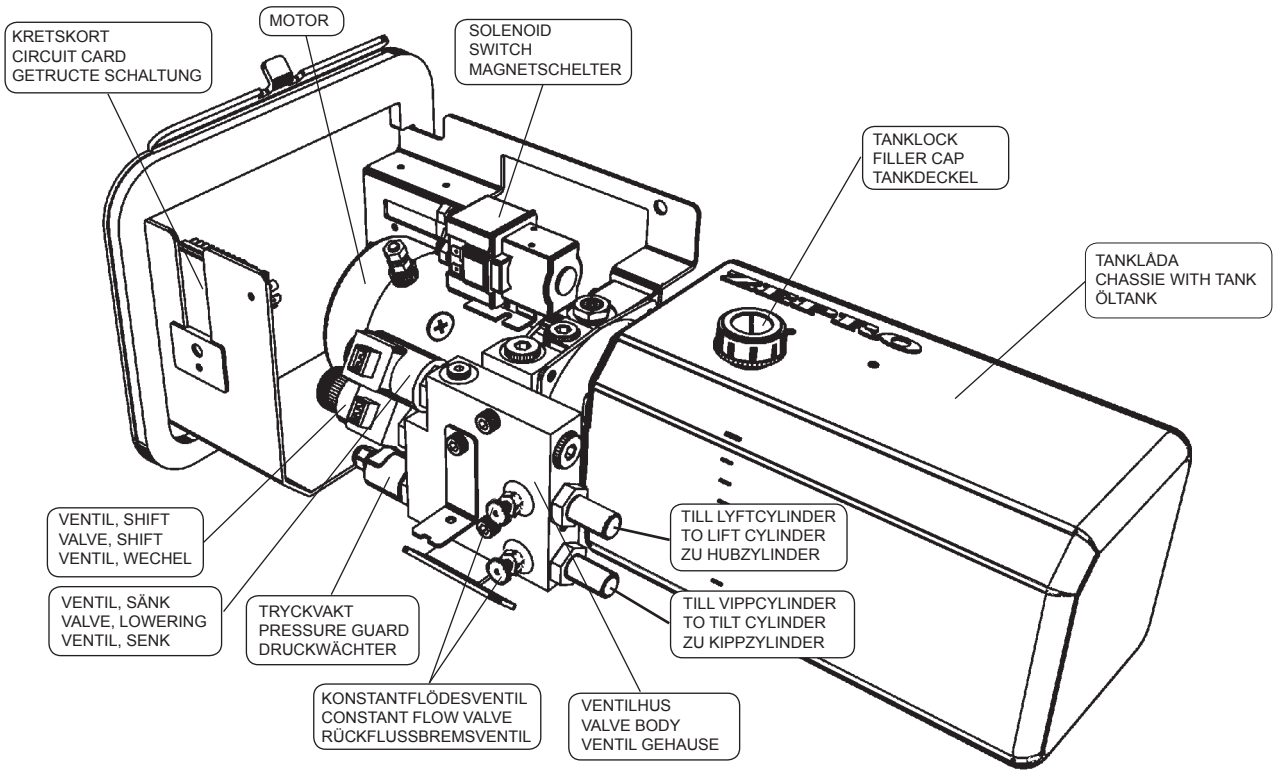




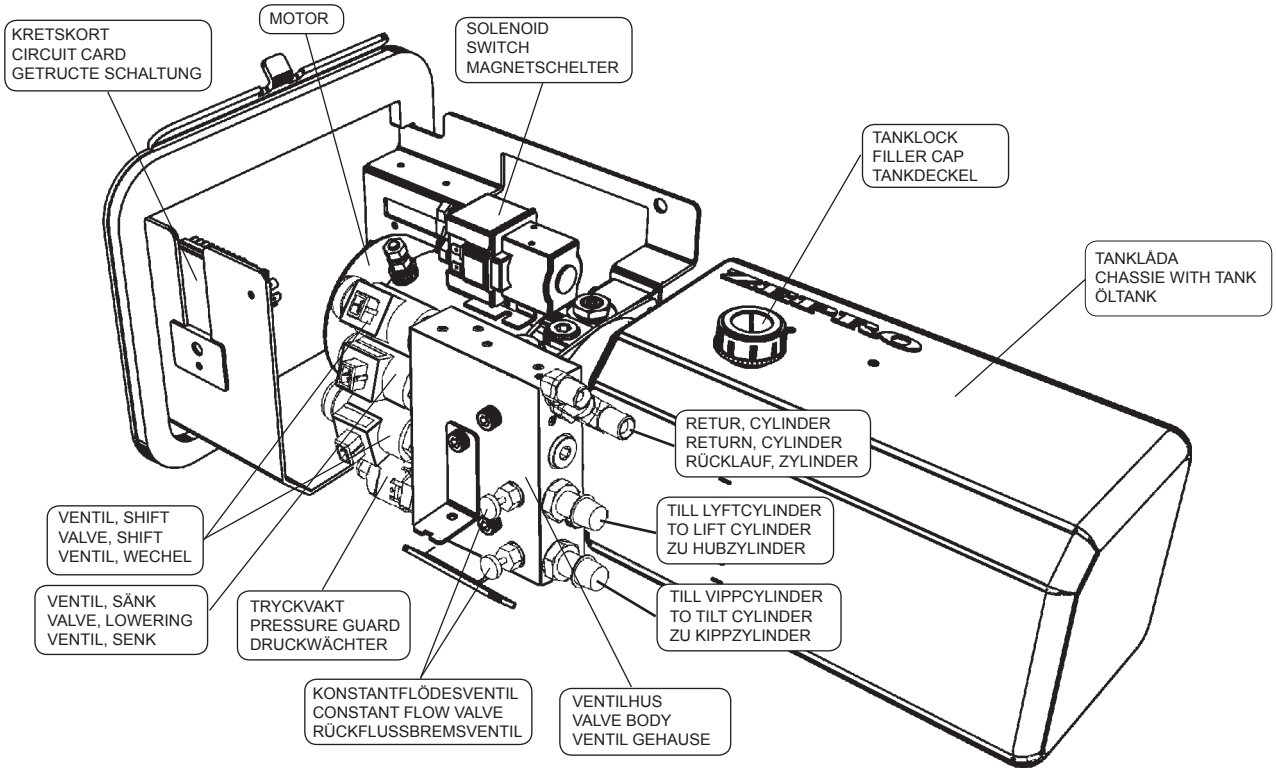
Nr. /No.	Färg / Color/Farbe
1.	Gul / Grön, Yellow / Green, Gelb / Grün
2.	Blå / Blue / Blau
3.	Brun / Brown / Braun
4.	Svart / Black / Schwarz
5.	Grön / Green / Grün
6.	Vit / White / Weiß
7.	Röd / Red / Rot
8.	Gul / Yellow / Gelb
9.	Grå / Grey / Grau
10.	Orange / Orange / Orange



Hydraulic unit BZ single acting



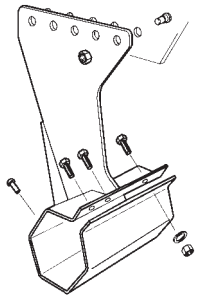
Hydraulic unit BZ double acting

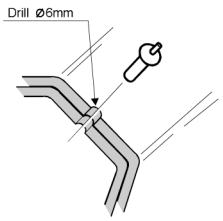


6 Bumper bar installation

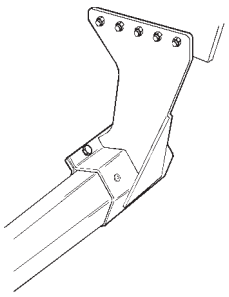
For the standard bumper bar.Test install the bumper bar. Begin with only one bracket and on one arm. Fasten the bracket temporarily with two screws on the arm. The bracket can be turned as in picture 5. Adjust the bracket's position so that the bumper bar is max 550 mm from the ground and max 215 mm from the vertical line of the platform axle centre. **See picture 6**.
The bumper bar may be positioned lower or further back if you want. Also check that the bumper bar doesn´t reach the ground when the truck is loaded to its max. and the platform touches the ground.
When you have found the correct position, fasten both brackets. Adjust the width of the bumper bar and fasten it. 5 pcs Ø=16 mm (special) 8.8 screws for each arm, torque 80 Nm. 3 pcs M10 8.8 clamp screws, torque 50 Nm at every bracket. One 6 mm pop rivet in one bracket. Install the bar end caps with the logo turned upwards when platform is in transport position **Bag 5**.
See pictures 7, 8, 9.

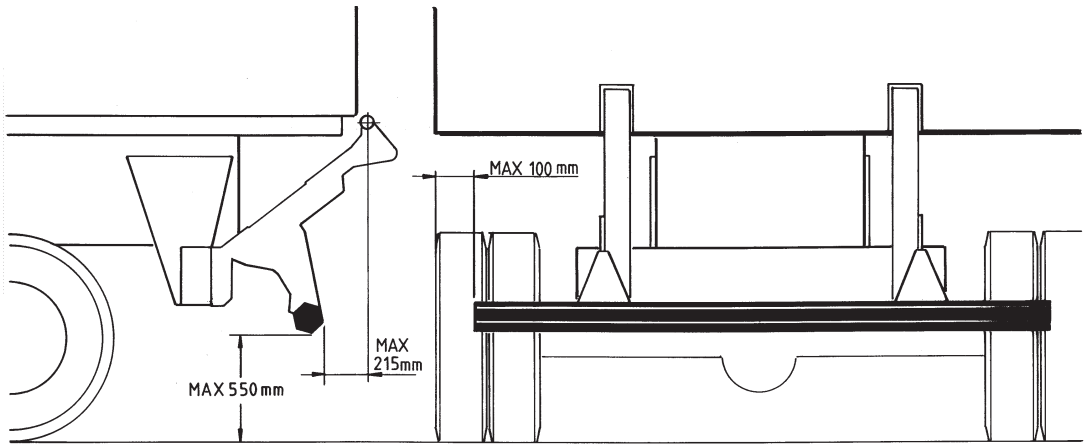
Note! It could sometimes be adviseable to shift bumper bar brackets beween lift models as they are exchangeable, this can help to optimise ground clearance in some cases. **See picture 10**.


Pict. 7

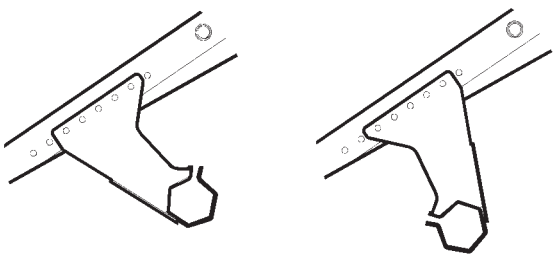


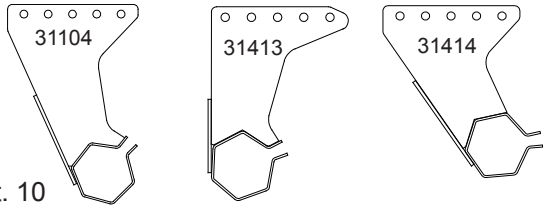
Pict. 8


Pict. 9



Pict. 6

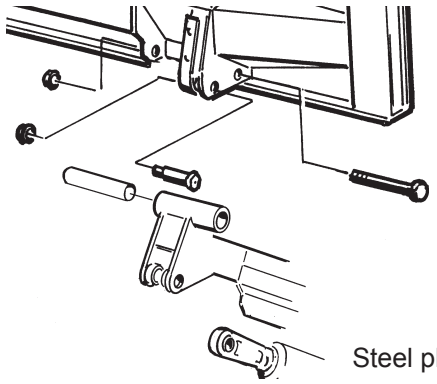

Pict. 5



Pict. 10

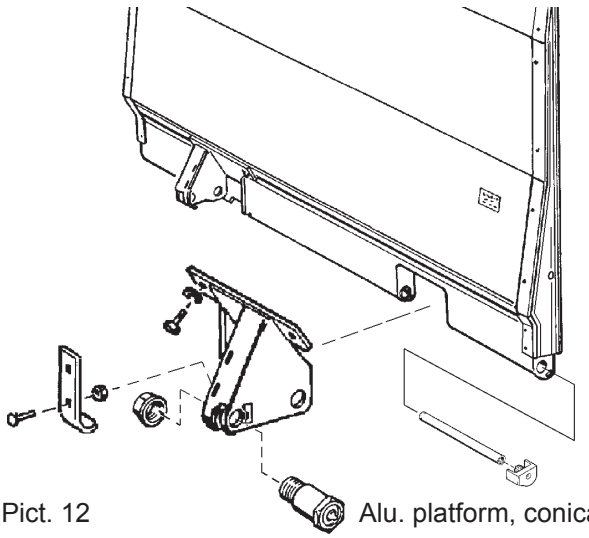
Steel platform installation

Install the platform on the arms and bolt the tilt cylinders to the platform. **Axels 31283+ 31284.**
See picture 11.

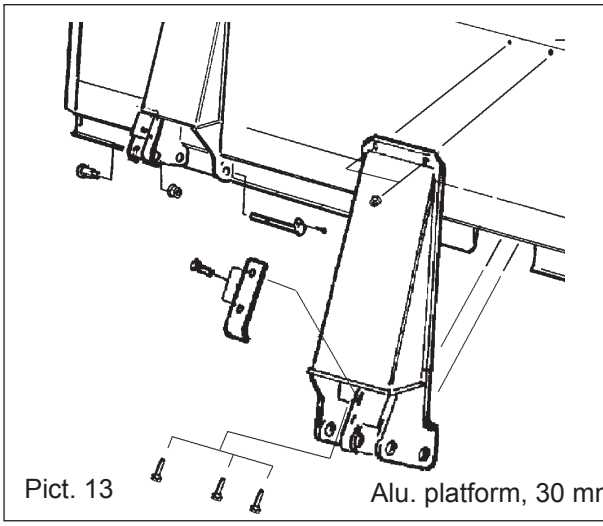


Pict. 11 Steel platform

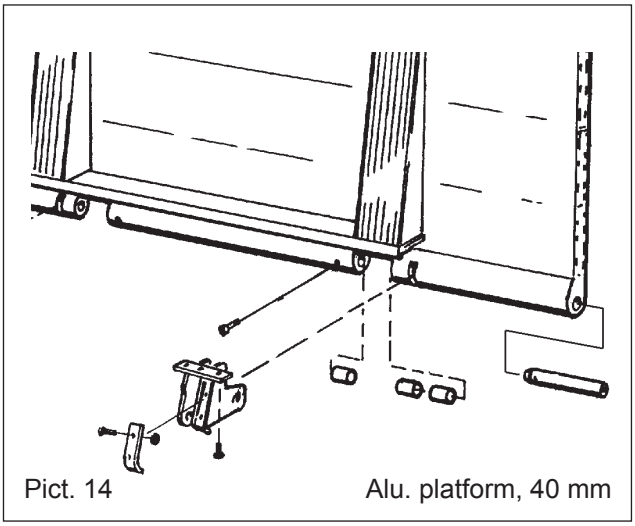
For Aluminium platforms. Screw the steel platform brackets to the platform, then thread in the axle bolts and fix them with the locking screws, the lift arms and the tilt cylinders can then be bolted to the platform, **see picture 12, 13, 14.**



Pict. 12 Alu. platform, conical

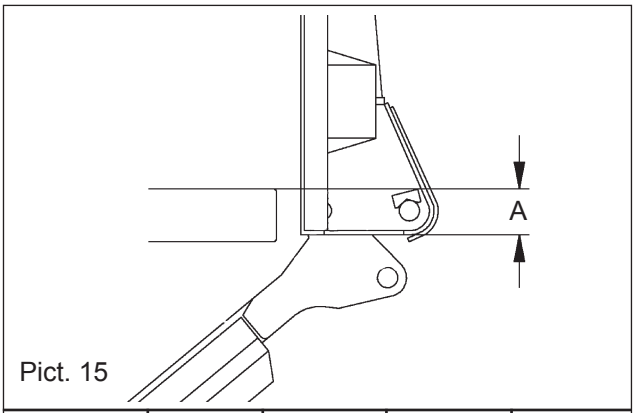


Pict. 13 Alu. platform, 30 mm



Pict. 14 Alu. platform, 40 mm

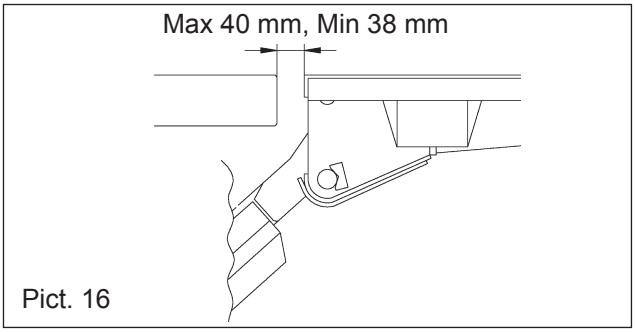
The platform´s overlap (A) is dependent on the type of platform. Please note the values below which are particulary relevant when installing a rubber seal on the body at the top of the platform.



Pict. 15

Type	Steel	Conical	30mm	40mm
A (mm)	69	80	74	77

When the platform is installed you should test run the lift carefully. Remember that the lift is only fastened to the frame temporarily. Check the platform position at rear beam. Adjust the position of the lift if necessary. **See picture 15.**

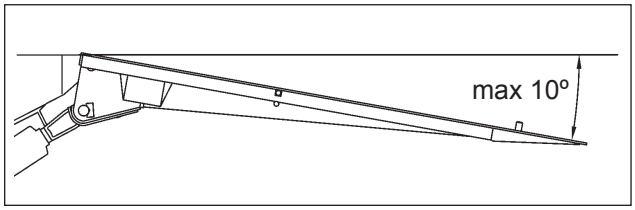


Pict. 16

Tighten all nuts (see section 4). Weld the square shaped washers to the brackets. 8 bolts at every bracket.

6. Installation, others

Note! The platform must not be tilted down more than max 10° below the horizontal.



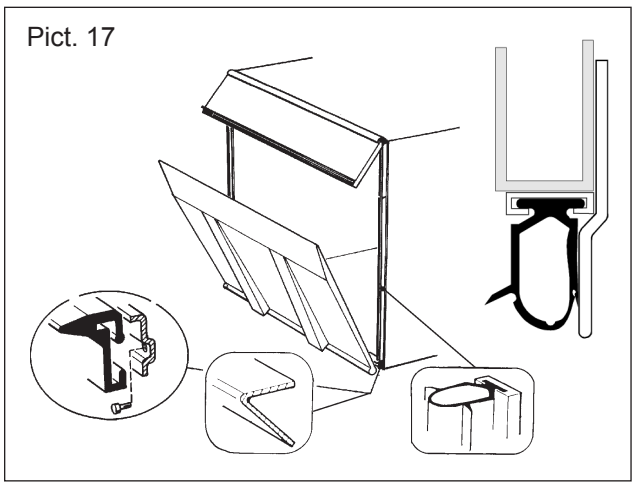
Sealing system (horizontal)
Install the horizontal aluminium or steel guide bar. Self-tapping screws delivered. Drill 7.2 mm holes. Mitre the rubber against the side seal. **Bag 3. See pictures 17**

Sealing system (vertical)
Install the rails for the vertical sealing strips. Note the position of the lock ears.
They can be fastened with screws, rivets or welding. The rubber strips are installed after the lock ears.

The rubber strips are locked by pressing the rails together.

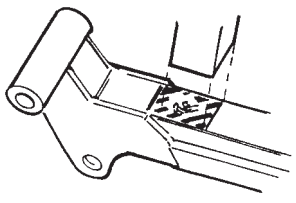
If upper seal must be installed you must mitre 45 degrees against vertical stripes.

Pict. 17



Armstops
Install armstops for both arms at the rear beam. The stops must reach the arm where the special stickers have been placed.
See picture 18.

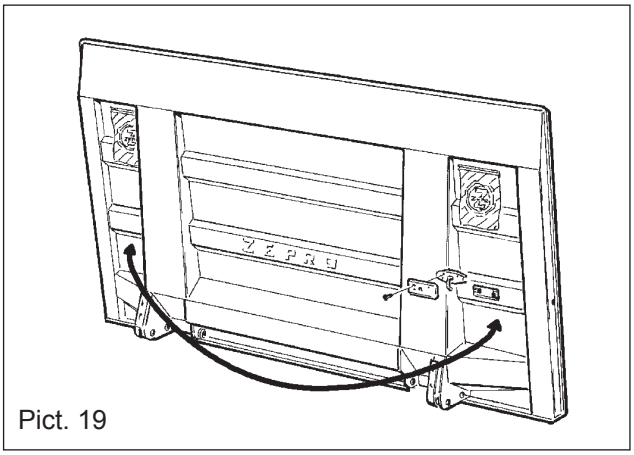
Pict. 18



Transport lock
For CE marked lifts with 1000 kg max lifting capacity and over ZEPRO provides platforms without transport lock. For other lifts transport lock are installed on the platforms right side.

If necessary the transport lock can be moved on the platforms left side. **See picture 19**.

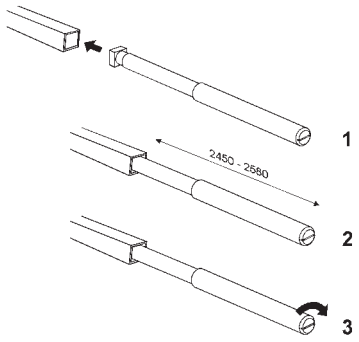
Electric safety valves can serve as transport locks for platforms. The lock opens automatically when the down button of the control unit is pressed.
The valves are one-way valves which allow oil to flow into the cylinders but not out from them unless current has been supplied to them via the lowering valves. The platform is hence hydraulically locked under transport.



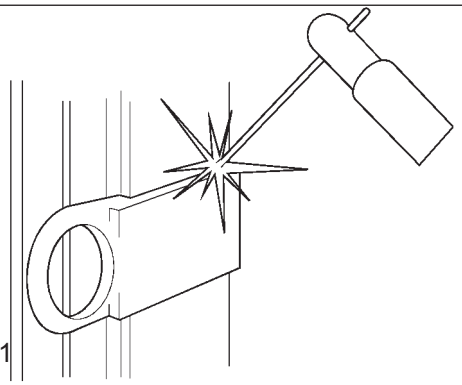
Pict. 19

6. Installation, others

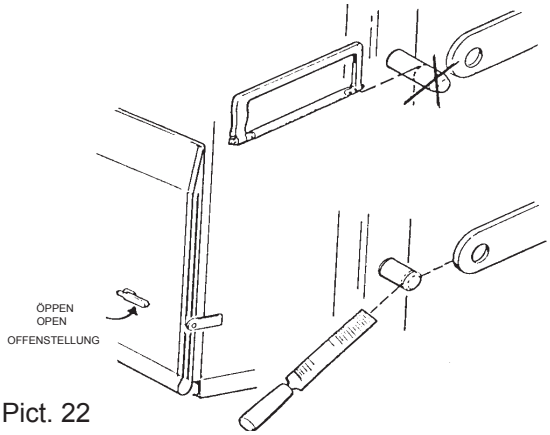
Adjust the lock bar of the steel platform.
See picture 20. Lift the platform up to the stops and tilt it fully up. Install the lock ears, you can screw or weld them. **See picture 21**.



Pict. 20


Pict. 21

For aluminium platforms. After the lock ears have been attached to the truck walls pull the lock handle to the unlocked position and check that the lock bar is free from the ears. If this is not so it must be cut. When the handle is turned to lock the bar should protrude (each side) through the lock ears with a safe margin (**see picture 22**).

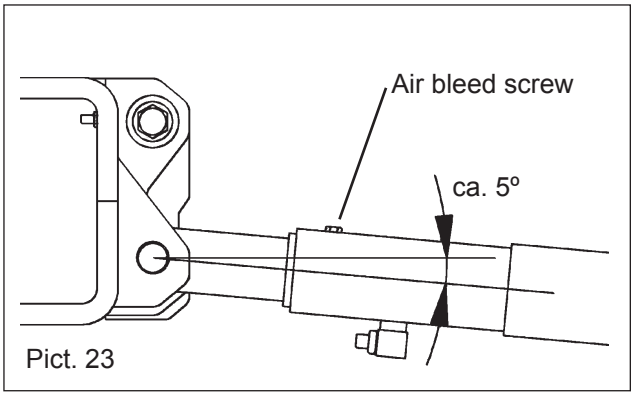


Pict. 22

Bleeding the cylinders
For all lift cylinder models.
Fully lower the platform a few times. You may have to lift the truck to fully lower the platform.

Concerning tiltcylinder models S & D
Tilt cylinder can be purged of air by closing the platform up against the vehicle body abd then opening and tilting all the way down.

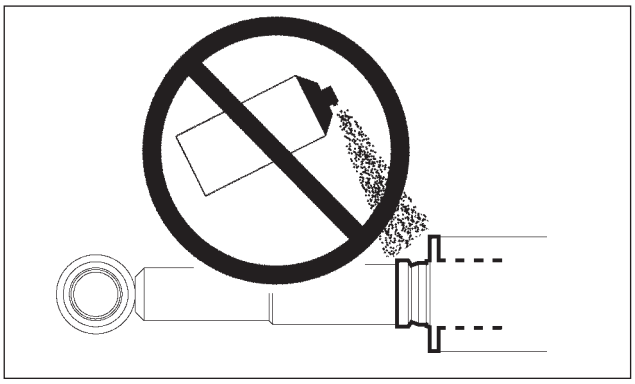
Concerning tiltcylinder model T
Position the cylinder according to picture 23. Purge the right, then the left hand side cylinder. Open the air bleed screw a few turns. Purge air until clean oil without bubbles flows out. If necessary repeat the above procedure.



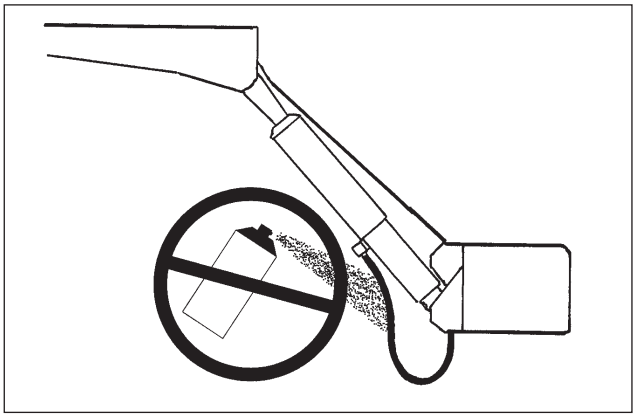
Pict. 23

7. Important information

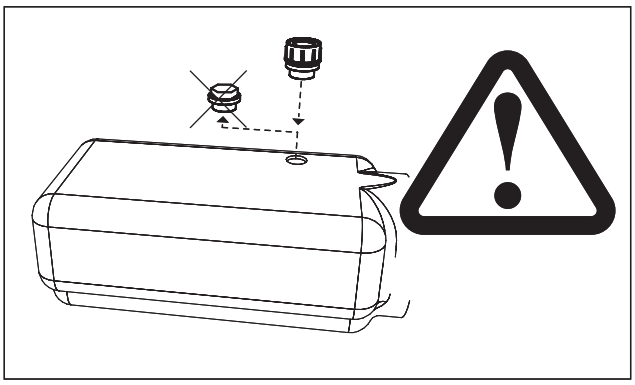
Repainting
NB. If the cylinders are to be repainted, ensure that the cylinder push rod and cover are not painted (this can damage the seals/gaskets).



Hydraulic hoses must not be painted, the paint's solvent can damage the hose's rubber compound and can adversely affect durability

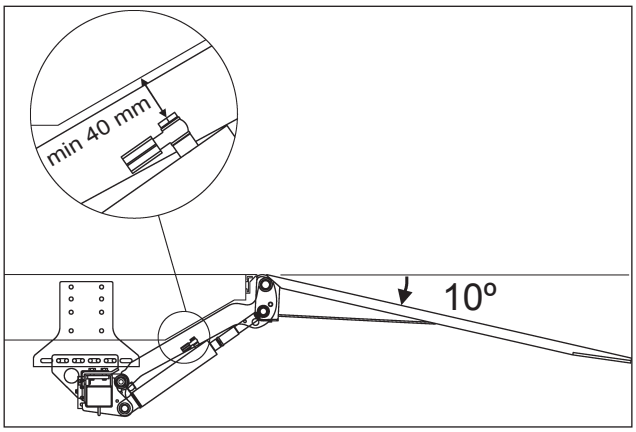


Replace the transport plug
During installation the oil tank transport plug should be removed and replaced



Moveable parts - free movement
When the final post-installation testing is carried out, it is important that there is sufficient clearance between the cylinders working envelopes and all fixed points. During lift operation and cylinder movement there is a risk for conflict with the subframe, truck frame, number plate, lamp holders and even the mounting brackets when the overhang is very limited (due to lift arm angle). Hence it is important to thoroughly check all of these points on both sides.

The final test is performed with the platform at floor height tilted down 10° from the horizontal. The cylinders must have a minimum clearance of 40 mm to all fixed points from this position.



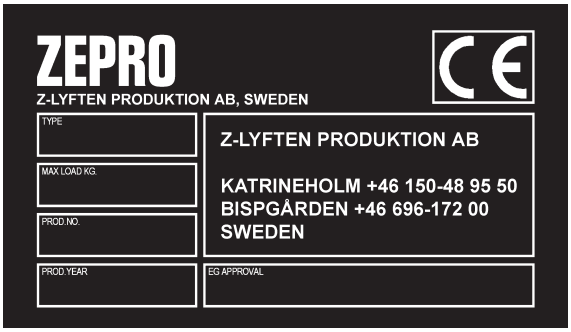
8 Information markings on lift
(see pictures on next page)

The loading diagram plates should be placed near the control unit and in a clearly visible position on the platform. The plate clearly indicates the nominal loading and the diagram shows the maximum permitted loading at different positions on the platform.

The name plate is installed on the support frame of the tail lift and contains the following information:

-Lift type
-Maximum permitted load in kg
-Serial number
-Year of manufacture
-Address and tel. no. of the manufacturer
-Country of manufacture
-EU type no. for bumper bar certificate

Their is also a similar name plate in the form of a decal which is to be affixed to the cabin's door frame to ensure correct product identification.



The mark below represents the manufacturer's guarantee that the tail lift is designed and was supplied according to the requirements laid down in the European Machinery Directive. It is a customer's guarantee of high quality and safety.

CE

A "danger area" decal is also to be placed on the platform warning drivers who are parking cars behind the vehicle that 5m are necessary to allow for platform opening and sufficient manoeuvring space for loading and unloading goods.

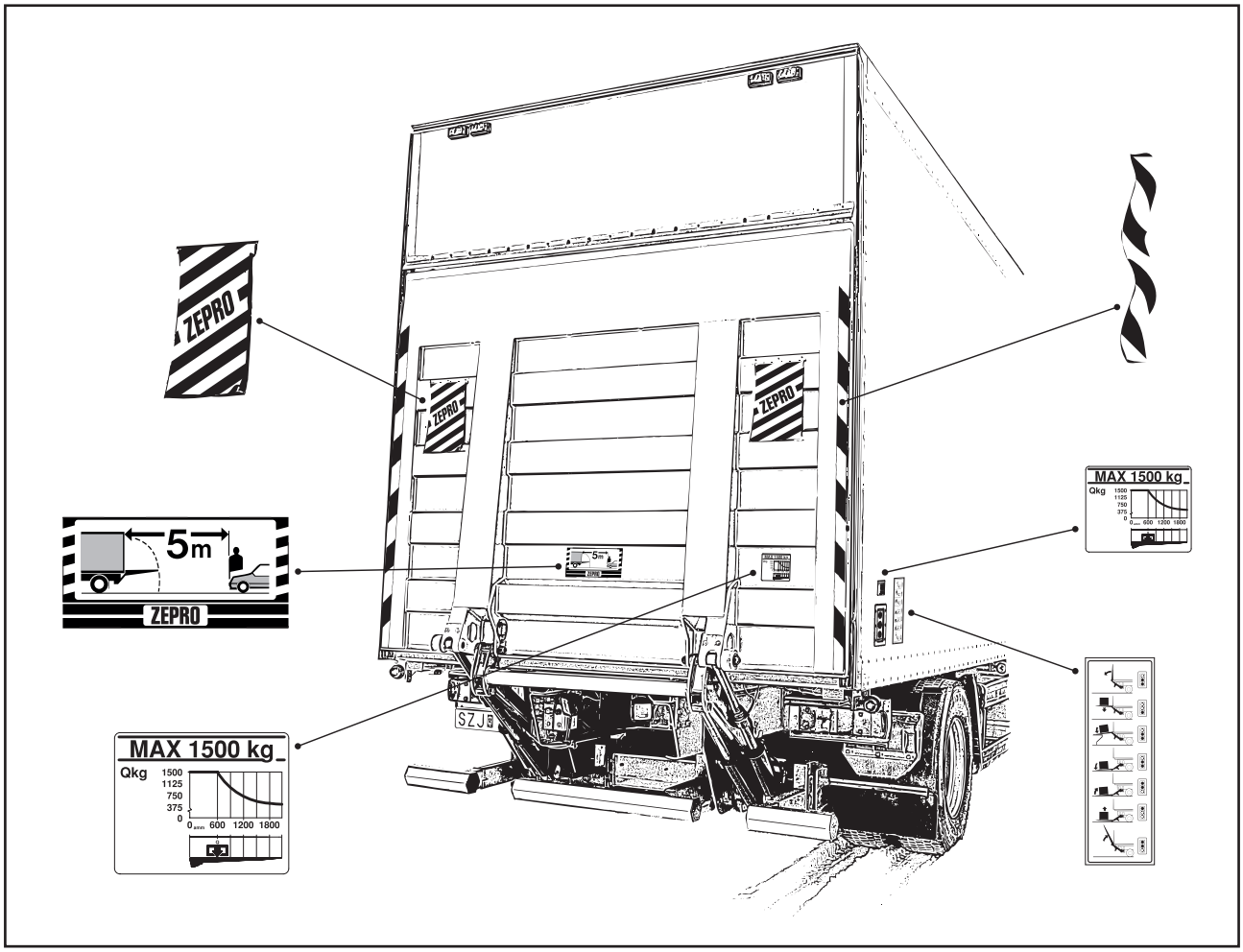
An operating instructions decal should be placed next to the main control unit.

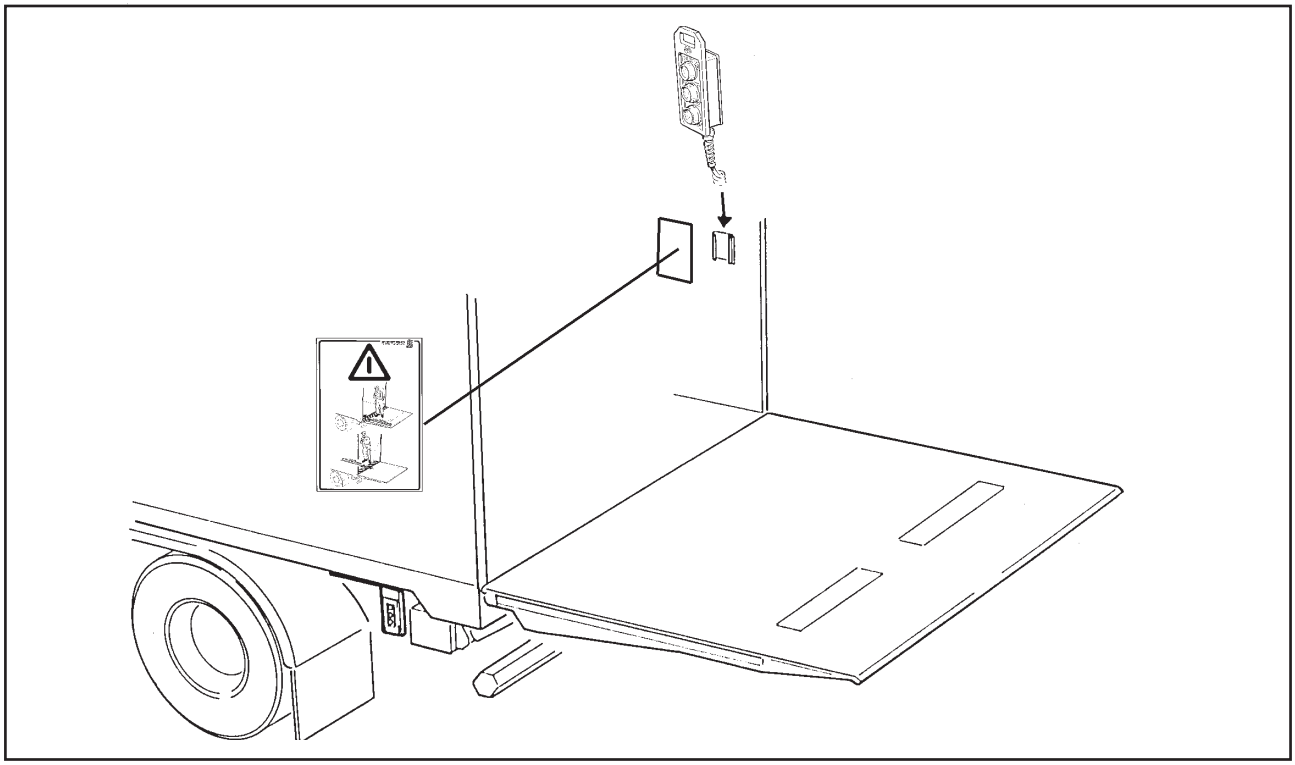
A danger zone decal, warning of the danger area between the platform and the vehicle bed is to be affixed on the inside of the vehicle body near to the spiral cable control, if installed.

We suggest that you stick the yellow/black warning tape along the side edge of the platform to make it more clearly visible when in the horizontal position.

Install the warning flags with reflection strips, as close to the top and to the side of the platform as possible, however, ensure that the flags will not detach when the platform reaches the ground. Crimp the ends of the flag profiles so that the flags stay in position.

8. Markings, decals



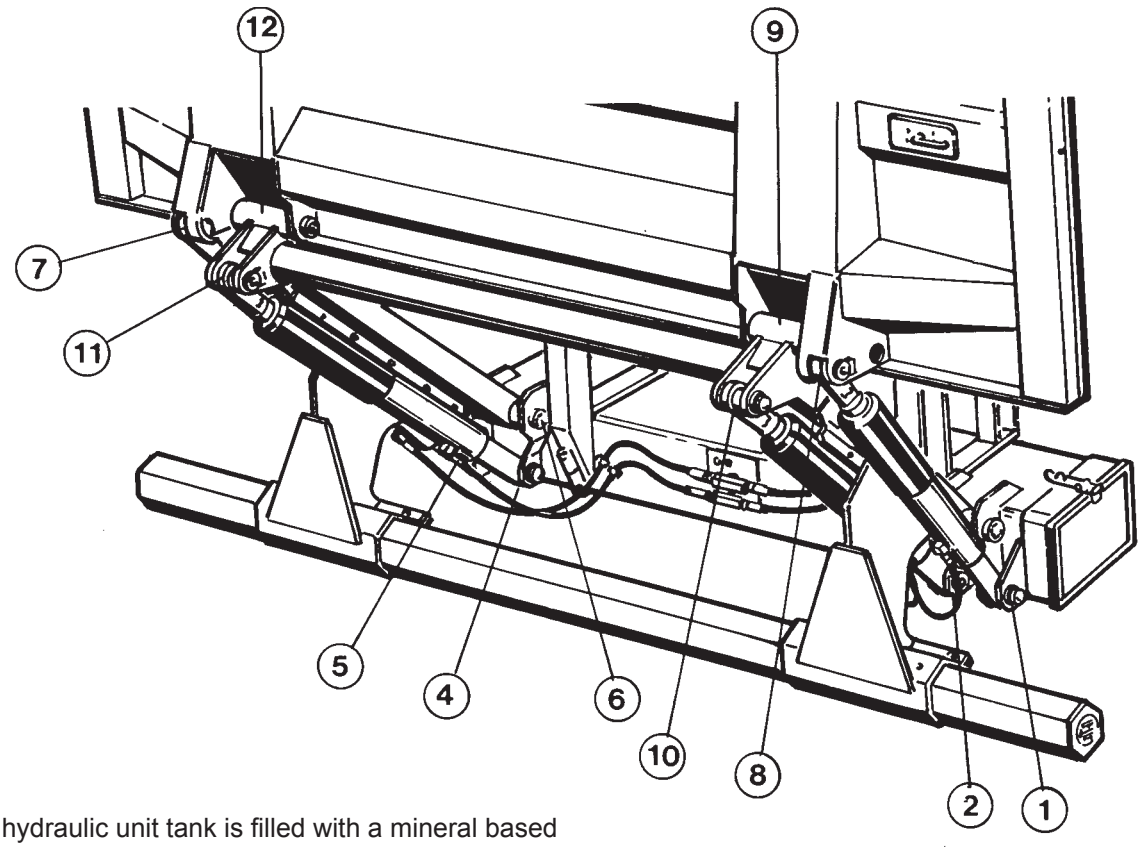


9 Lubrication

Grease all bearings and platform locks with LE lubricant 1233 or equivalent.

Greasing at least 8 times / year

1. Right tiltcylinder, lower bearing.
2. Right liftcylinder, lower bearing.
3. Liftarm right side, lower bearing.
4. Left liftcylinder, lower bearing.
5. Left tiltcylinder, lower bearing.
6. Liftarm left side, lower bearing.
7. Lift tiltcylinder, upper bearing.
8. Right tiltcylinder, upper bearing.
9. Liftarm right side, upper bearing.
10. Right liftcylinder, upper bearing.
11. Left liftcylinder, upper bearing.
12. Liftarm left side, upper bearing.



The hydraulic unit tank is filled with a mineral based hydraulic oil (art.no 21963 for 1 litre.) or a biodegradable synthetic oil (art.no 22235 for 1 litre). There is a sticker on the hydraulic unit indicating which type of oil is in the tank.

10. Load testing the tail lift

10. Testing the tail lift
Testing and verification of the tail lift.
Carried out in accordance with the installation instruction and delivery check list.

Check that the tail lift chosen corresponds to the vehicle and to its foreseen use.

Static loading test
To be carried out when installation is complete.
Deformation
Position the tail lift with the platform horizontal about half way between the ground and the vehicle floor. Measure the distances A,B,C,D as shown in the diagram. Place a test load on the platform according to the table (for the corresponding tail lift model and loading capacity). Remove the load from the platform. Repeat the measurements of A,B,C,D and check that there is no permanent deformation to the tail lift or its brackets.

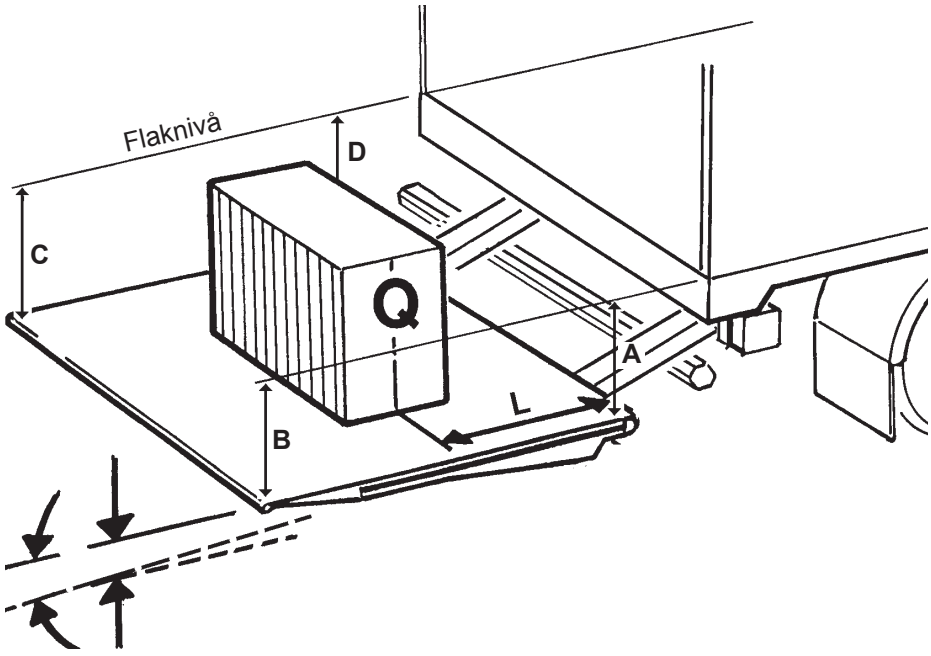
Deflection
Place a test load on the platform according to the table (for the corresponding tail lift model and loading capacity). Remove the load from the platform. Repeat the measurements of A,B,C,D and check that there is no permanent deformation to the tail lift or its brackets.
Measure the distances A,B,C,D as shown in the diagram. Leave the test load on the platform for 15 minutes. Repeat the measurements of A,B,C,D and check that the platform´s deflection is not more than 15mm vertically and that it is not more than 2º in angular deflection.

Static loading (Test load 1,25 x tail lift loading capacity). For tail lifts with load centre of 600 mm

Capacity	Load 500 kg	Load 1000 kg
	Distance out in platform (L)	
450 kg	(450 kg) 675 mm	-
500 kg	750 mm	-
700 kg	1050 mm	-
750 kg	1125 mm	-
1000 kg	1500 mm	750 mm
1500 kg	2250 mm	1125 mm
2000 kg	(3000 mm)	1500 mm

Static loading (Test load 1,25 x tail lift loading capacity). For tail lifts with load centre of 750 mm

Capacity	Load 500 kg	Load 1000 kg
	Distance out in platform (L)	
1500 kg	(2815) mm	1410 mm
2000 kg	(3750 mm)	1875 mm



Max 2º, Max 15 mm

10. Load testing the tail lift

Dynamic load testing
Test with nominal load
Place a test load on the platform according to the table for the respective tail lift model and lifting capacity. Check that the tail lift operates correct in the normal range of movement allowed ie. up, down, tilting at the ground level and tilting at the vehicle floor level.

Test with over load.
Place a test load on the platform according to the table for the respective tail lift model and lifting capacity. The test load should be 1,25 x the lift models max load. Check that the tail lift cannot lift this load (it may, however, be possible to operate the tilting movement). Remove the test load from the platform.

Dynamic load (Test load 1,0 x tail lift loading capacity). For tail lifts with load centre of 600 mm

Capacity	Load 500 kg	Load 1000 kg
	Distance out in platform (L)	
450 kg	600 mm	-
500 kg	600 mm	-
700 kg	800 mm	-
750 kg	900 mm	-
1000 kg	1200 mm	600 mm
1500 kg	1800 mm	900 mm
2000 kg	(2400 mm)	1200 mm

Dynamic load (Test load 1,0 x tail lift loading capacity). For tail lifts with load centre of 750 mm

Capacity	Load 500 kg	Load 1000 kg
	Distance out in platform (L)	
1500 kg	1975 mm	1200 mm
2000 kg	(3000 mm)	1475 mm

Test of safety functions
The tail lifts safety functions must be tested
Check:

- That the red lamp in the vehicle cabin turns off when the platform is completely closed against the body and that it turns on when the platform is opened (where applicable).

- That the tail lift will not operate if the cabin switch is in the off position.

- That the tail lift cannot be operated when the main current fuse is removed (where applicable).

- That the overflow valve is activated when the lift is run up to the floor level or armstops.

- That the tail lift cannot be lowered or tilted down respectively if the electrical connector from the lift and tilt cylinders respectively electric safety valve is removed.

-That the platforms max load marking has been included and is correctly positioned according to the loading diagram for the tail lift model concerned.

- That the warning flags are installed and fulfill their function correctly.

- That all safety and operating stickers are installed in their specified position.

- That the platform´s mechanical lock functions correctly (where applicable).

- That the Operator´s Handbook has been left in the driver´s cabin.

- That the declaration of CE conformity has been filled in (where applicable).

11. Dismantling

DISMANTLING

1. Should it be necessary to take the tail lift away from the rear of the truck either for installation onto another vehicle, for storage or for modification to the truck please follow the following instructions.
2. Tilt down the platform to horizontal and attach the grab from a ceiling crane with the capacity to hold the platform's weight. See weights chapter.
3. Tilt up the platform to about 20° from the horizontal and lower the platform towards the ground but leave space for access to the pivot bolts and nuts.
4. Bring a wheeled jack or a palette lift under the platform and raise the forks to support the platform. Unscrew the lock bolt in the tilt cylinder pivot bolt's pear shaped head and lower the tilt cylinder to the ground. Repeat for other tilt cylinder.
5. Repeat point 11.4 for the pivot bolts between the platform and the lift arm.
6. Lower the platform to the horizontal and support it with the palette truck and crane.
7. Hammer out the pivot bolts one by one until the platform is free from the lift and can be carried away.
8. Bring palette truck under support frame to provide support. Unscrew all bolts attaching the mounting bracket to the lift.
9. After ensuring that the battery is disconnected, unscrew the electrical cable providing current from the battery and the cables running from the hydraulic unit to the control units. Lower the support frame away from the vehicle chassis and take away.
10. Unscrew control units and their holders from both inside and outside the vehicle.