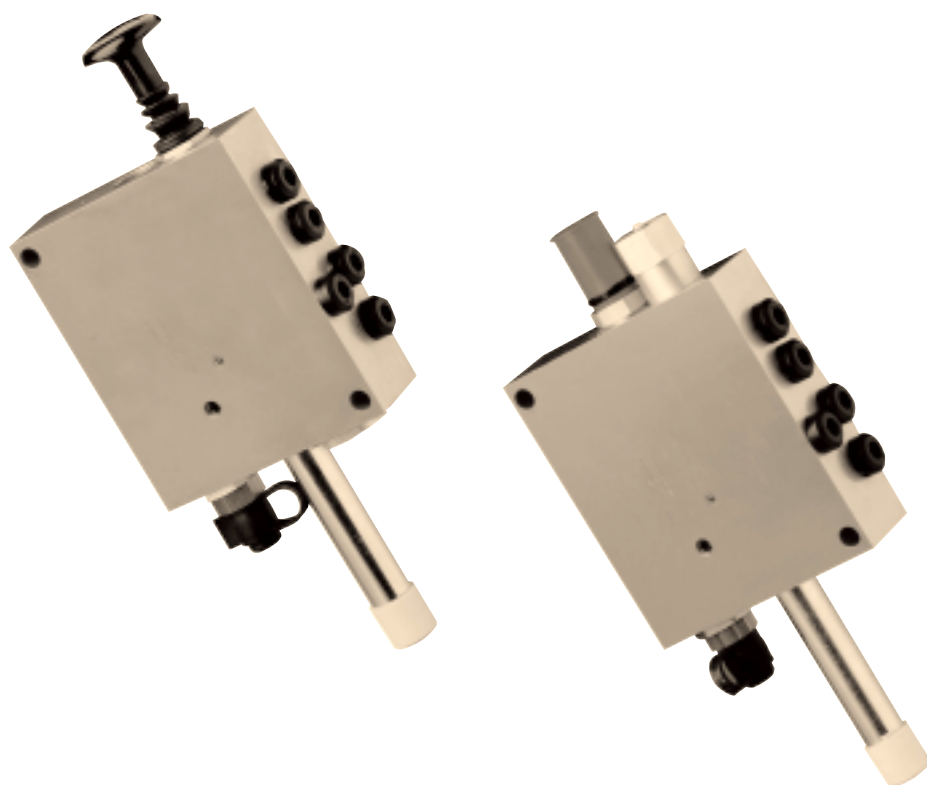


**Innovation**

**Safety**

**Quality**

**Performance**



# INSTALLATION INSTRUCTIONS **ILAS<sup>®</sup> III**

**Integrated Lift - Axle - System**

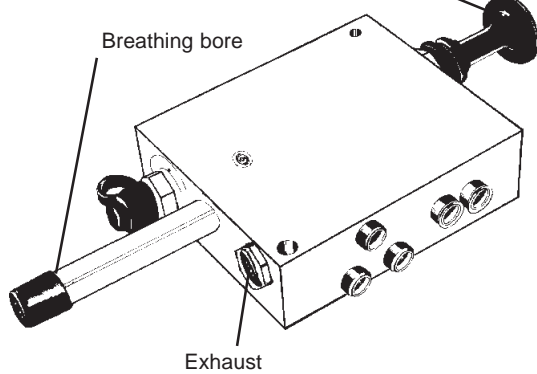
352 0.. ...



352 047 ...

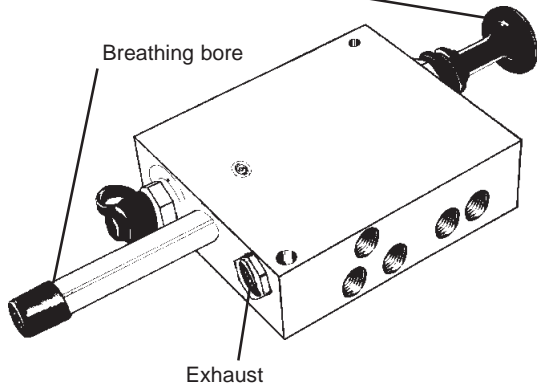
Control button

**1**



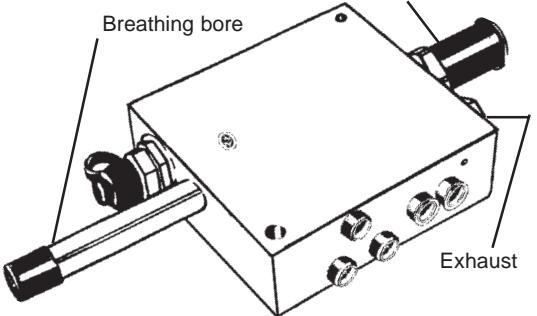
352 049 ...

Control button

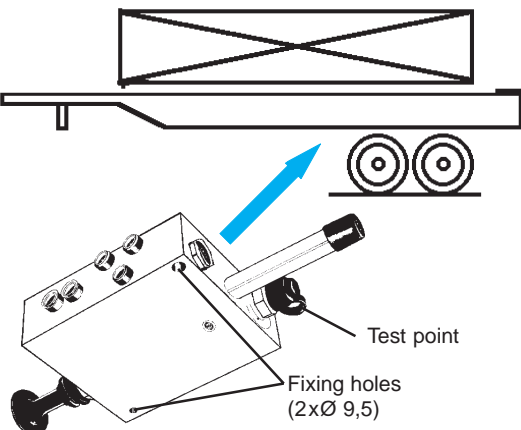


352 051 ...

Control valve pneum.operated



**2**



**Use**

Depending on the type, for controlled lowering and lifting of one or several lift axles depending on the load.

**Function 1**

**Type: 352 047 ... and 352 049 ... :**

Lifting or lowering the lift(s) axle by means of a [control button](#) with no load.

[Automatic lowering](#) of the raised lift axle(s) after reaching the predefined control pressure  $p_s 1$  (bellow pressure) set on the control valve via spring force after the loading process (overload). Control pressures-see types **9**

**Type 352 051 ... :**

Automatic load-dependent lifting and lowering of the lift axle(s) after reaching the control pressure  $p_s 1$  and  $p_s 2$  (see table examples of assembly). **16**

**Set-up**

- Control valve, adjustable
- 3/2 directional control valve, pneumatically controlled
- One way restrictor
- Damping storage (volume)
- Test connection
- Connections for K tube  $\varnothing = 8$  mm (not for 352 049 ...)
- Connection facility for additional storage (volume)

**352 047 ... , 1 with:**

- Control button
- Push-in fittings

**352 049 ... , 1 with:**

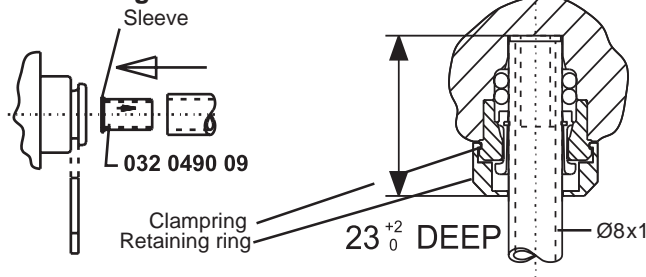
- Control button
- Thread M 12 x 1.5

**352 051 ... , 1 with:**

- Control valve pneumatically operated
- Push-in fittings

**3**

**Push-in fitting**

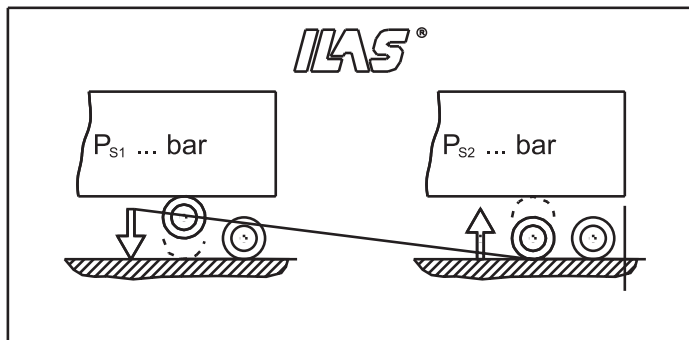


**Assembly guidelines**

Installation takes place on the holes which are provided. **2** Installation is to be done that **ILAS III** is not in the spray or splash water area and it is protected against high pressure cleaning. The control button (if available) must be easily accessible. It should be noted that when pulled out this does not project over the edge of the vehicle. Corresponding protection should be provided by the vehicle manufacturer against unintentional activation.

**4**

**Plate 028 0355 09**



The pneumatic connections can take place in accordance with diagrams **7, 11, 13, 17, 21**

A **plastic tube** in accordance with DIN 74 324-8x1 should be used for the versions with push-in fittings. When assembling the pneumatic pipes, care should be taken to ensure that the pipes are cut square, to the required length and are free from burrs.

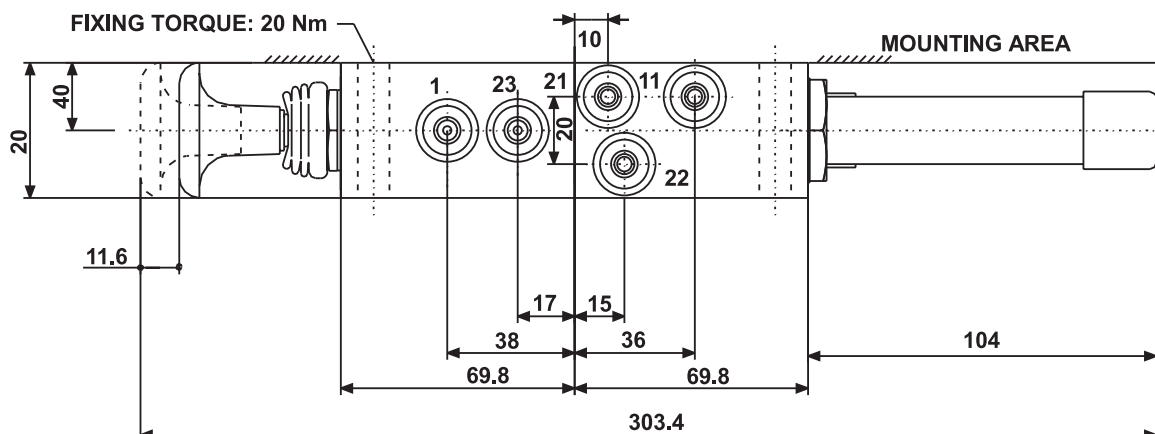
Before inserting the pipes in the push-in fittings support sleeves, e.g. in accordance with HALDEX order number 032 0490 09 in the ends of the pipes. Pipes are to be inserted **at least 23 mm** deep in the connections. \* **3**

In the event of paint/coating work all open connections, the ventilation hole and the exhaust **1** are to be protected by suitable means to avoid penetration of the paint/coating. After successful assembly the control pressures  $p_{s1}$  (lowering) and  $p_{s2}$  (lifting) are to be checked and entered on the enclosed plate 028 0355 09. **4** This plate is to be fixed so that it is **visible** in the area of the lift(s) axle.

\*) After removal of the retaining ring it is possible to remove the plastic pipe by pushing the clamping in.

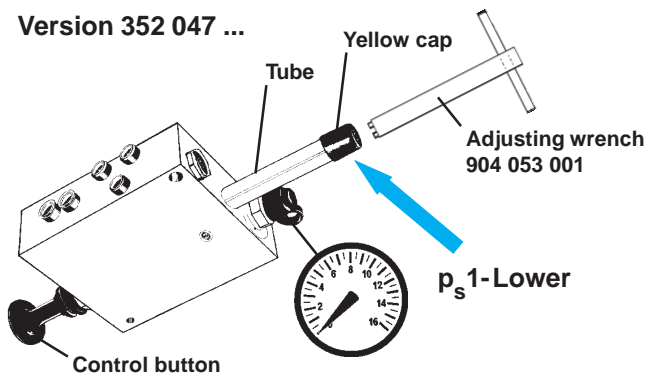
**5**

**Installation drawing 352 047 ...**



**6**

Version 352 047 ...



**Setting the control pressure  $p_s 1$ -lowering**

For setting with an empty vehicle it is recommended to install a gauge regulator into port 11 e.g. 318 048 001. **7**

The control pressure  $p_s 1$  for automatic lowering of a lifted axle is set as follows by using an adjusting wrench (HALDEX order number 904 053 001):

- control button pressed in
- connect test connection with pressure gauge
- remove **yellow** cap on the tube
- slowly increase pressure on the gauge regulator **7** until the switching pressure –lower axle – is reached and switching noises can be heard. In this process, the control button is pushed outwards. If the switching pressure is not reached then adjust the nut in the tube by means of the adjusting wrench:

**Turning to the right = higher control pressure  $p_s 1$**

**Turning to the left = lower control pressure  $p_s 1$**

- check the control pressure  $p_s 1$  again
- enter the control pressure value  $p_s 1$  in the enclosed plate 028 0355 09 **4** and fix this in the area of the lift axle so that this is **visible**.
- press the yellow cap loosely on the tube and make sure this engages.
- remove the pressure gauge from the test connection and replace the protective cap.

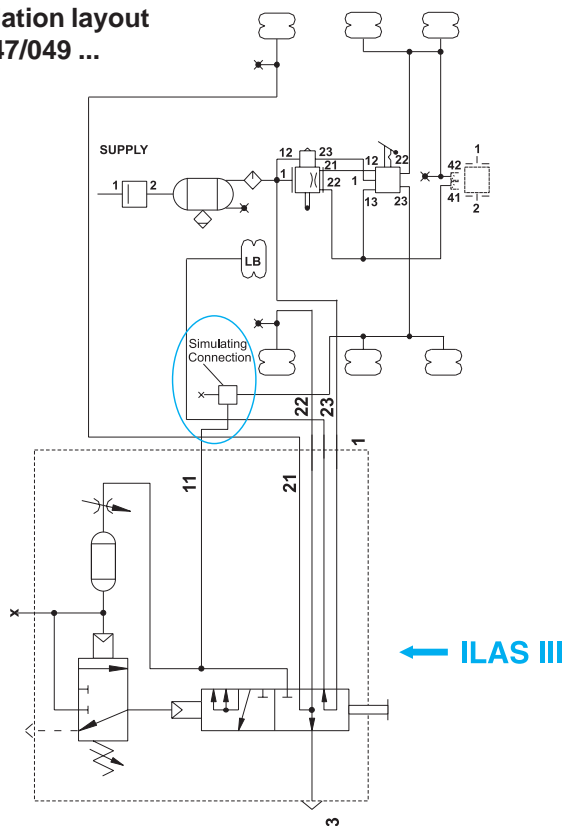


**PRECAUTION-DANGER**

Automatic lowering of lift axle(s) after reaching the switching pressure. Do not stay in the area of the lift axle.

**7**

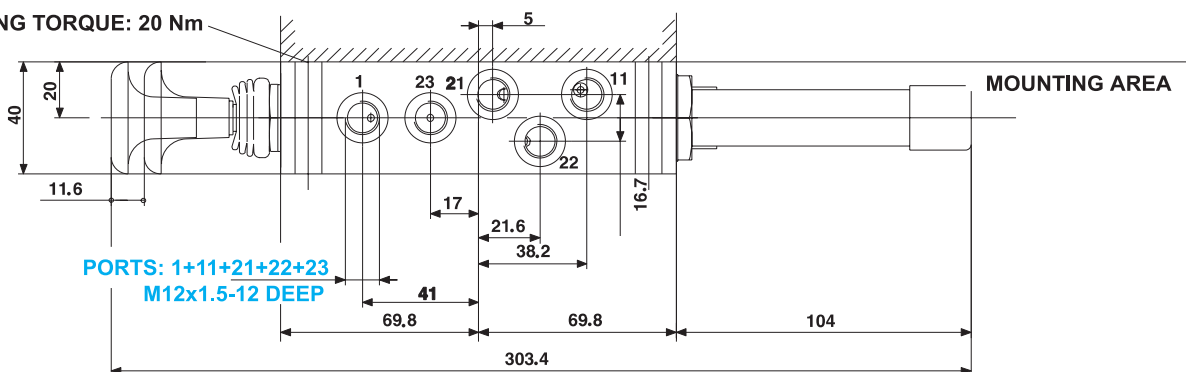
Installation layout 352 047/049 ...



Installation drawing 352 049 ...

**8**

FIXING TORQUE: 20 Nm



### Versions

Control pressures  $p_s$  1 (lowering) are to be set within the range of the table below.

9

PARTNO.	Controlpress. $p_s$ 1 lower
352 047/049 200 setable	1,5 - 2,9 bar
352 047/049 100 setable	3,0 - 5,3 bar
352 047/049 000 setable	3,6 - 6,0 bar

### Accessories (supplied with this)

Plate: 028 0355 09 1x **4**

### Assembling Kit (only 352 047 ...) 003 6166 09

consists of :

Sleeve 8 mm: 032 0490 09 5x **3**

### To be ordered separately:

Key for control pressure: 904 053 001 **6**

Damping reservoir\*: 016 3650 09

Simulating connection: 318 048 001 **7**

Pressure protection valve\*\*: 314 013 ... **11, 17**

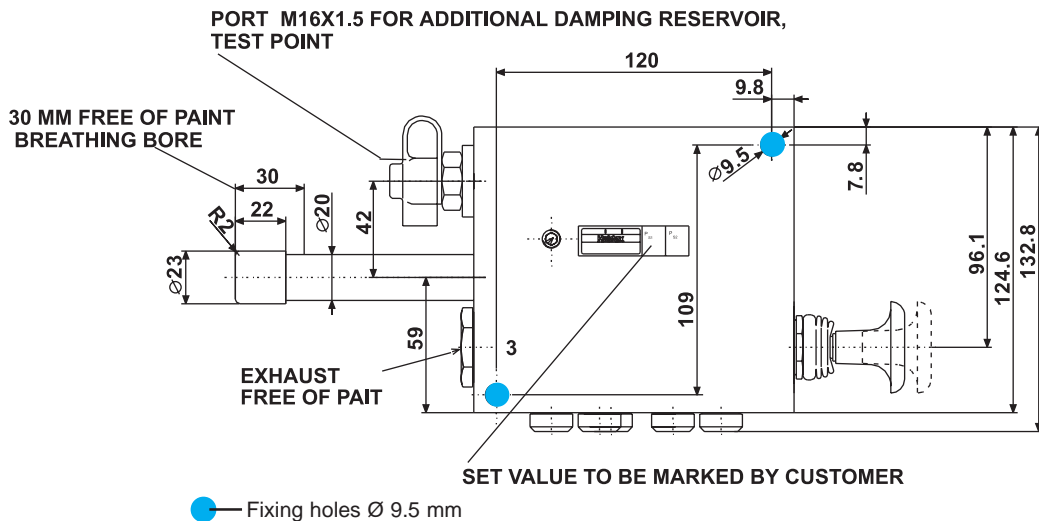
Pressure limiting valve\*\*: 357 ... ... **11, 17**

\* = Additional volume (85 cm<sup>3</sup>), if internal damping volume (100 cm<sup>3</sup>) is not enough.

\*\* = Setting by vehicle manufacturer in according of datas from axle manufacturer!

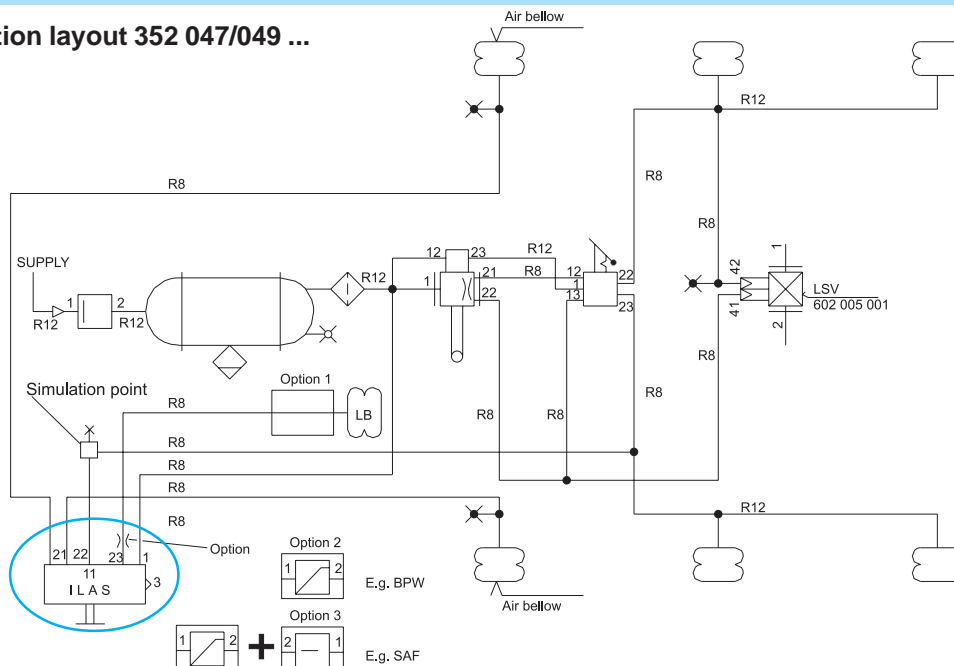
10

### Installation drawing 352 047 ...

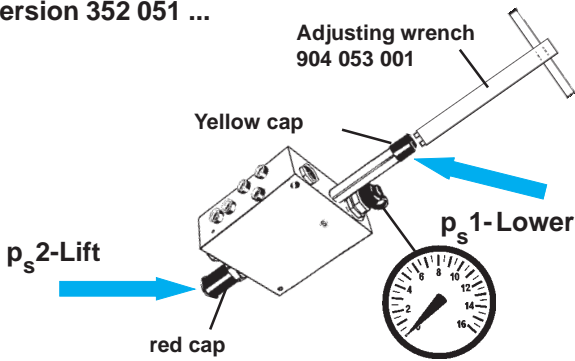


11

### Installation layout 352 047/049 ...



Version 352 051 ...



**12**

**Setting the control pressure  $p_s$  1-lowering **12****

For setting with an empty vehicle it is recommended to install a gauge regulator into port 11 e.g. 318 048 001. **13**

The control pressure  $p_s$  1 for automatic lowering of a lifted axle **16** is set as follows by using an adjusting wrench (HALDEX order number 904 053 001):

- control button pressed in
- connect test connection with pressure gauge
- remove yellow cap on the tube
- slowly increase pressure on the gauge regulator **13** until the switching pressure –lower axle – is reached and switching noises can be heard. If the switching pressure is not reached then adjust the nut in the tube by means of the adjusting wrench:

Turning to the right = higher control pressure  $p_s$  1

Turning to the left = lower control pressure  $p_s$  1

- check the control pressure  $p_s$  1 again
- enter the control pressure value  $p_s$  1 in the enclosed plate 028 0355 09 **4** and fix this in the area of the lift axle so that this is visible.
- press the yellow cap loosely on the tube and make sure this engages.
- remove the pressure gauge from the pressure connection and replace the protective cap.

Setting possibilities see fig. **16**

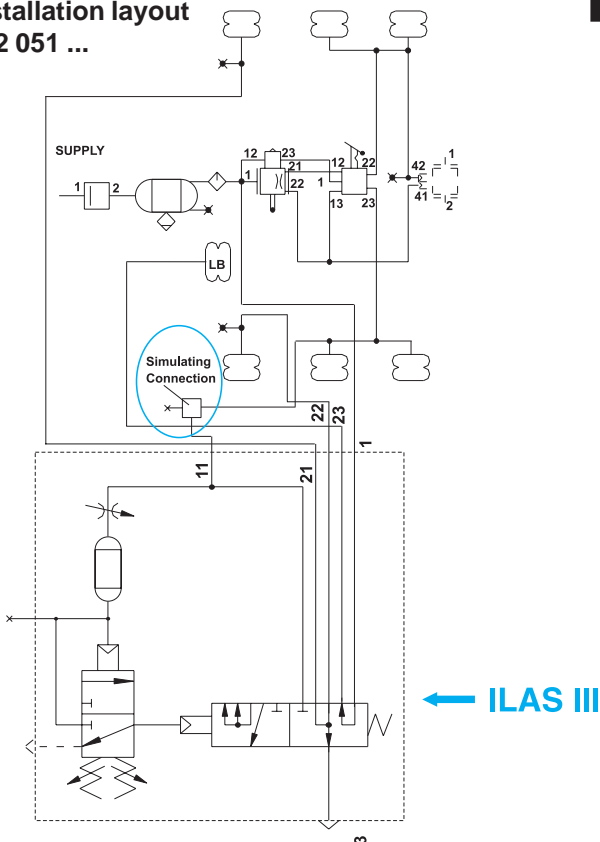
**Setting the control pressure  $p_s$  2 – lifting **12****

For setting on an empty vehicle a gauge and regulator is to be installed into port 11 e.g. 318 048 001. **13**

The control pressure  $p_s$  2 -see pressure diagramm for automatic lifting of the lift axle is set as follows: **16**

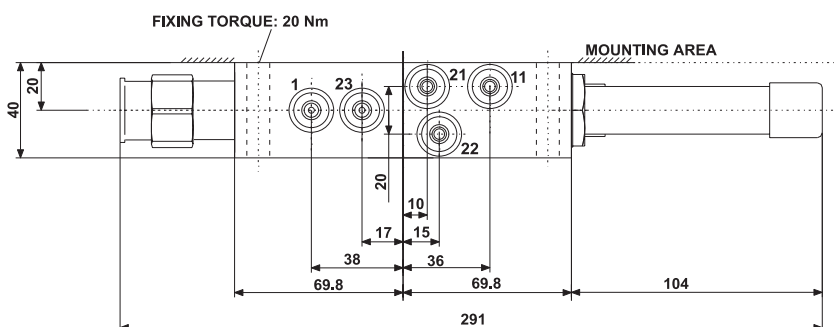
- connect test connection with pressure gauge
- remove red cap in order to uncover the knurled nut.
- slowly reduce the pressure on port 11(simulator connection) **13** to control pressure  $p_s$  2 (desired) until switching noises can be heard and the lift axle is raised. If the switching pressure is not reached, then twist the knurled nut:

Installation layout 352 051 ...



**13**

Installation drawing 352 051 ...



**14**

### Turning to the right = higher control pressure $p_{s2}$

### Turning to the left = lower control pressure $p_{s2}$

- check control pressure  $p_{s2}$  once again.
- enter control pressure  $p_{s2}$  in the enclosed plate 028 0355 09 **4** and **visibly** fix this in the area of the lift axle.
- push in **red** cap until this stops and secure with **blue tie**.
- remove pressure gauge from the test connection and replace protective cap.

### Types and settings

The types and settings can be taken from the diagram-Examples of assembly **16**. It should be noted that the pressure values  $p_{s1}$  (lowering) and  $p_{s2}$  (lifting) must be within the „adjustable area“ for the respective unit. Units only can be set within these tolerance limits.

### Accessories (supplied with this)

Plate: 028 0355 09 1x **4**

### Assembling Kit (only 352 051 ...) 003 6166 09

consists of :

Sleeve 8 mm: 032 0490 09 5x **3**

### To be ordered separately:

Key for control pressure: 904 053 001 **12**

Damping reservoir\*: 016 3650 09

Simulating connection: 318 048 001 **13**

Pressure protection valve\*\*: 314 013 ... **18-21**

Pressure limiting valve\*\*: 357 ... ... **18-21**

\* = Additional volume (85 cm<sup>3</sup>), if internal damping volume (100 cm<sup>3</sup>) is not enough.

\*\* = Setting by vehicle manufacturer in according of datas from axle manufacturer!

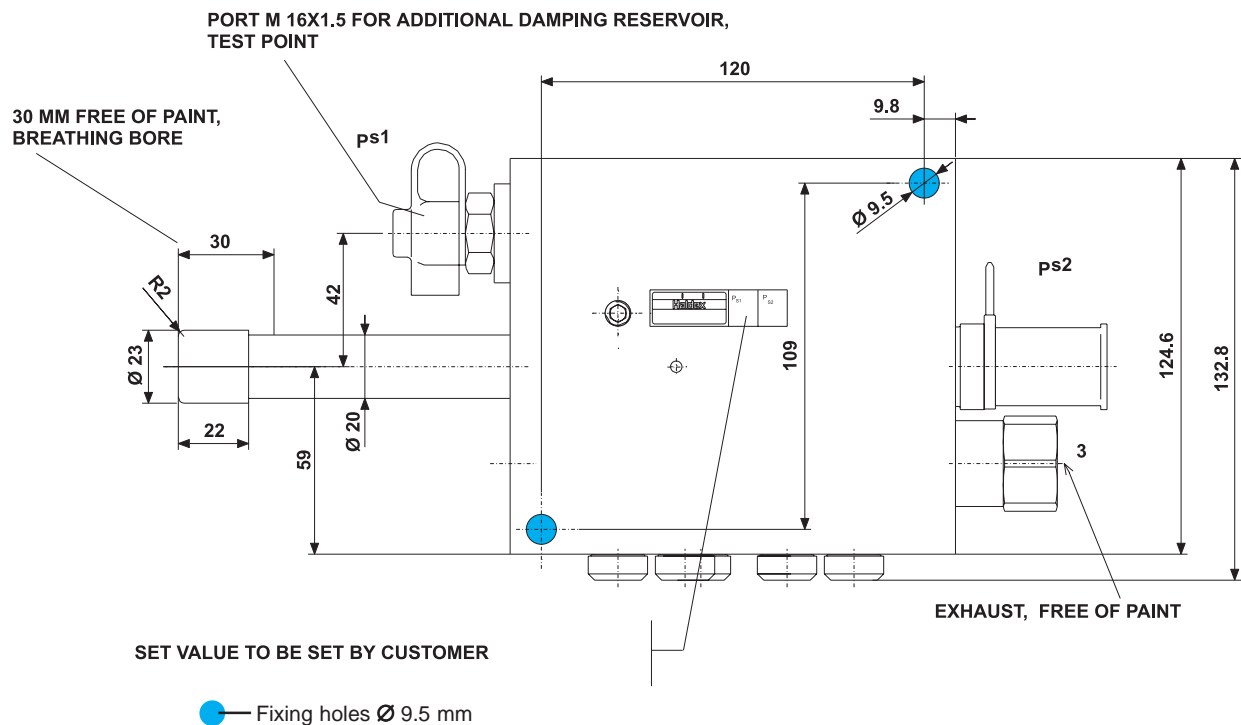


### PRECAUTION-DANGER

Automatic lowering or lifting of lift axle(s) after reaching the switching pressure. Do not stay in the area of the lift axle.

### Installation drawing 352 051 ...

**15**



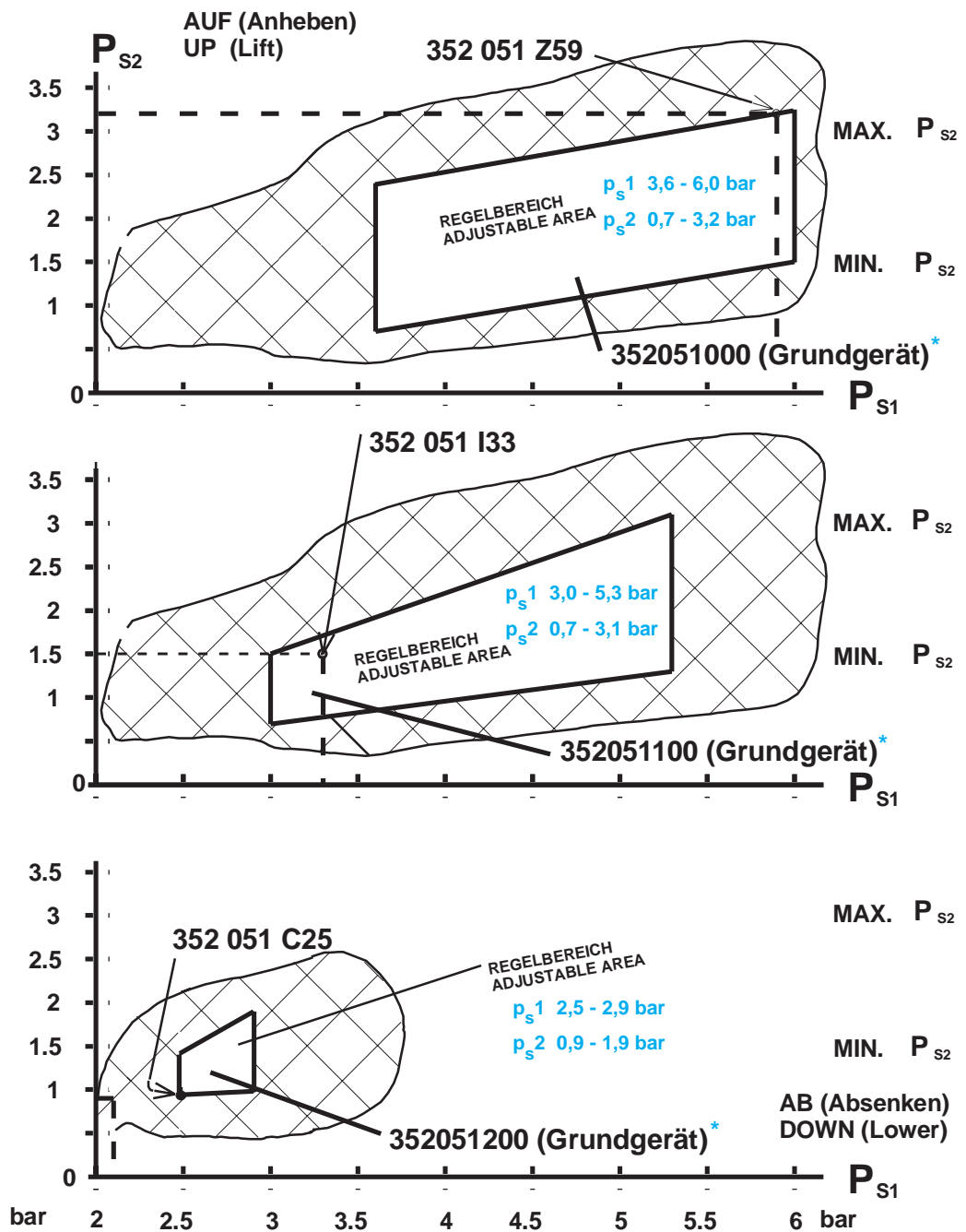
Examples of assembly

Every version is to be setable within the adjustable area. The last 3 digits of the partnumber shows the pressure settings of the valve. The letter is the indicator of the pressure  $p_{s2}$  "Lift". The numbers indicate the pressure  $p_{s1}$  "Lower".

e.g. 352 051 **Z59** → "Lower" at  $p_{s1} = 5.9$  bar  
 → "Lift" at  $p_{s2} = 3.2$  bar. These data are to be marked on the plate  
 028 0355 09.

table for  $p_{s2}$   
 Lift (bar)

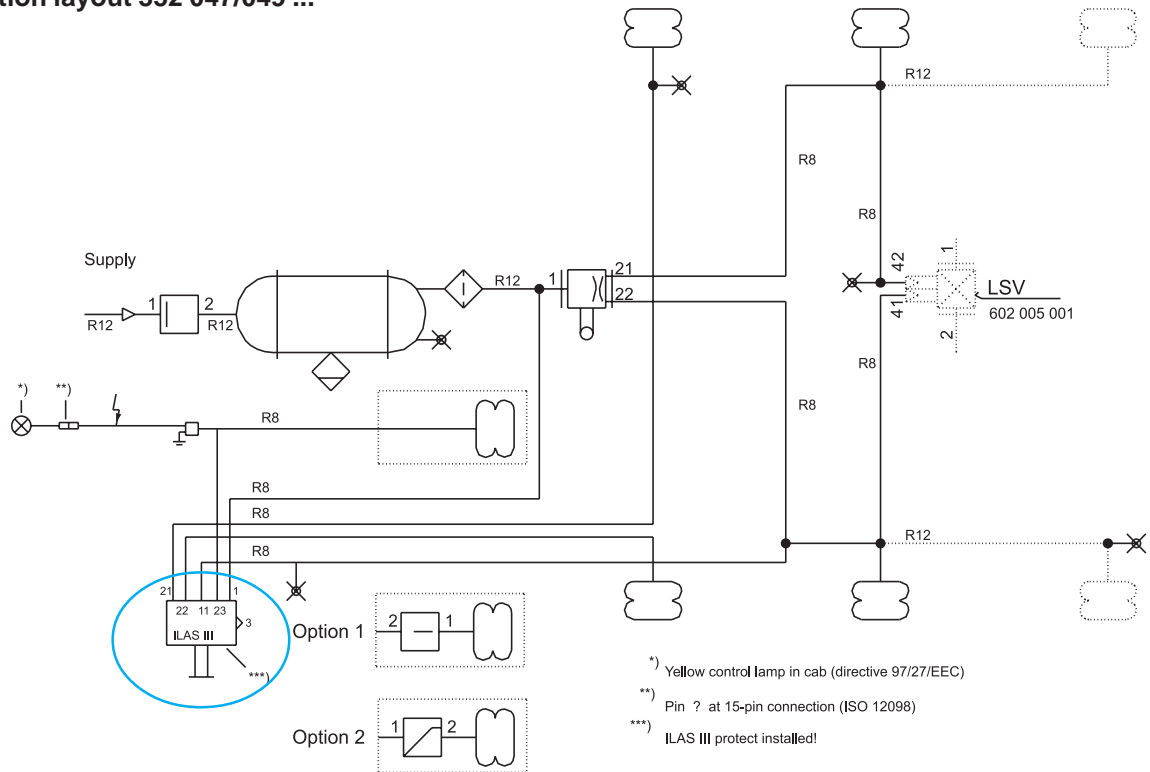
- A = 0,7
- B = 0,8
- C = 0,9
- D = 1,0
- E = 1,1
- F = 1,2
- G = 1,3
- H = 1,4
- I = 1,5
- J = 1,6
- K = 1,7
- L = 1,8
- M = 1,9
- N = 2,0
- O = 2,1
- P = 2,2
- Q = 2,3
- R = 2,4
- S = 2,5
- T = 2,6
- U = 2,7
- V = 2,8
- W = 2,9
- X = 3,0
- Y = 3,1
- Z = 3,2
- Ä = 3,4
- Ö = 3,6
- Ü = 3,8



\* = Basic version



Installation layout 352 047/049 ...



Option 1 = Pressure protection valve w.b. } Installation in according to axle- and vehicle manufacturer  
 Option 2 = Pressure limiting valve

**Maintenance**

In Order to simplify service work a shut off cock (e.g. 334 077 001) **20** can be fitted. Then it is possible to turn off the lift device. In addition you can fit a simulation point to port 11 to the ILAS (e.g. 318 048 001). **7, 11, 13**  
 If defects are noted during vehicle examinations or when driving, then the unit should be exchanged. When working with high pressure cleaners a distance of at least 50 cm should be observed.

**Testing**

Check funtion and leak-tightness of the unit.  
 Check the control pressure ps in accordance with details of the vehicle manufacturer.

**Technical datas**

Operating pressure:	$p_e$ max 8.5 bar
Operating temperature:	-40°C to +80°C
Pressure difference:	$\Delta p_s$ at +22°C
352 047/049 015 ... 029	1.1 ± 0.3 bar
352 047/049 030 ... 060	1.5 ± 0.3 bar

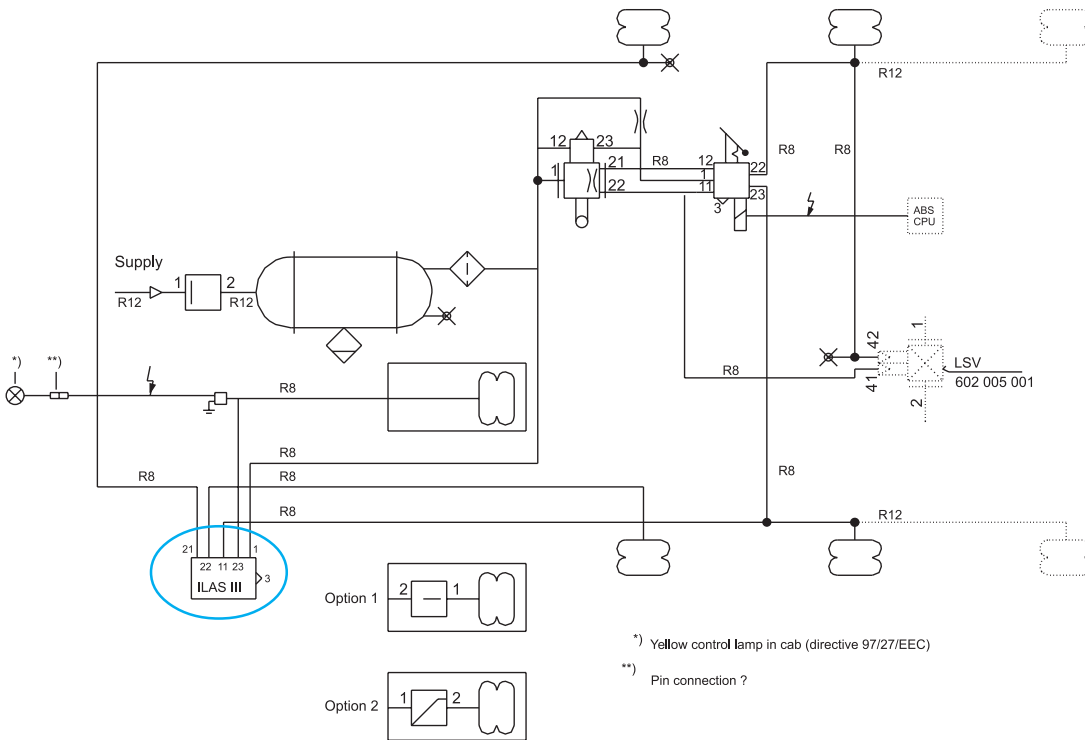
Port description:

- 1 = Supply
- 11 = Air bellows
- 21, 22 = Air bellows (Liftaxle)
- 23 = Lift bellow
- 3 = Exhaust

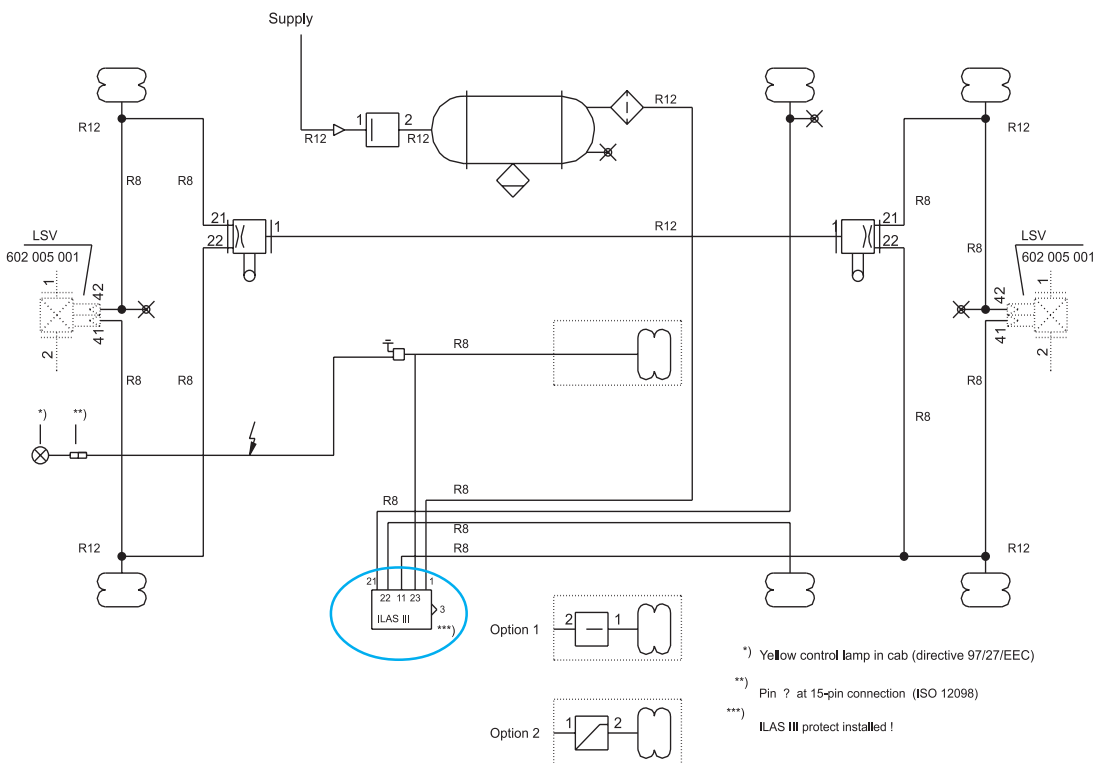
Ports 1, 11, 21, 22, 23 :

- 352 047/051 ... : Push-in-fittings for tube DIN 74324-8x1
- 352 049 ... : M 12 x 1.5

**Installation layout 352 051 ... with COLAS**



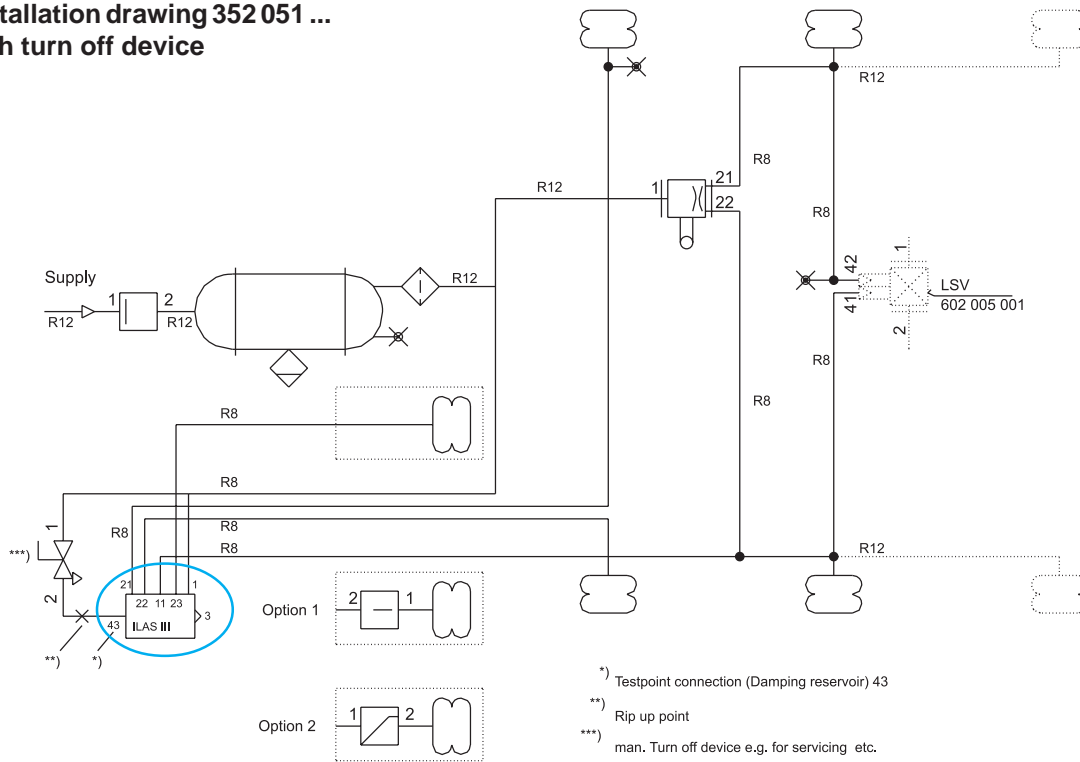
**Installation layout 352 051 ... for full trailer**



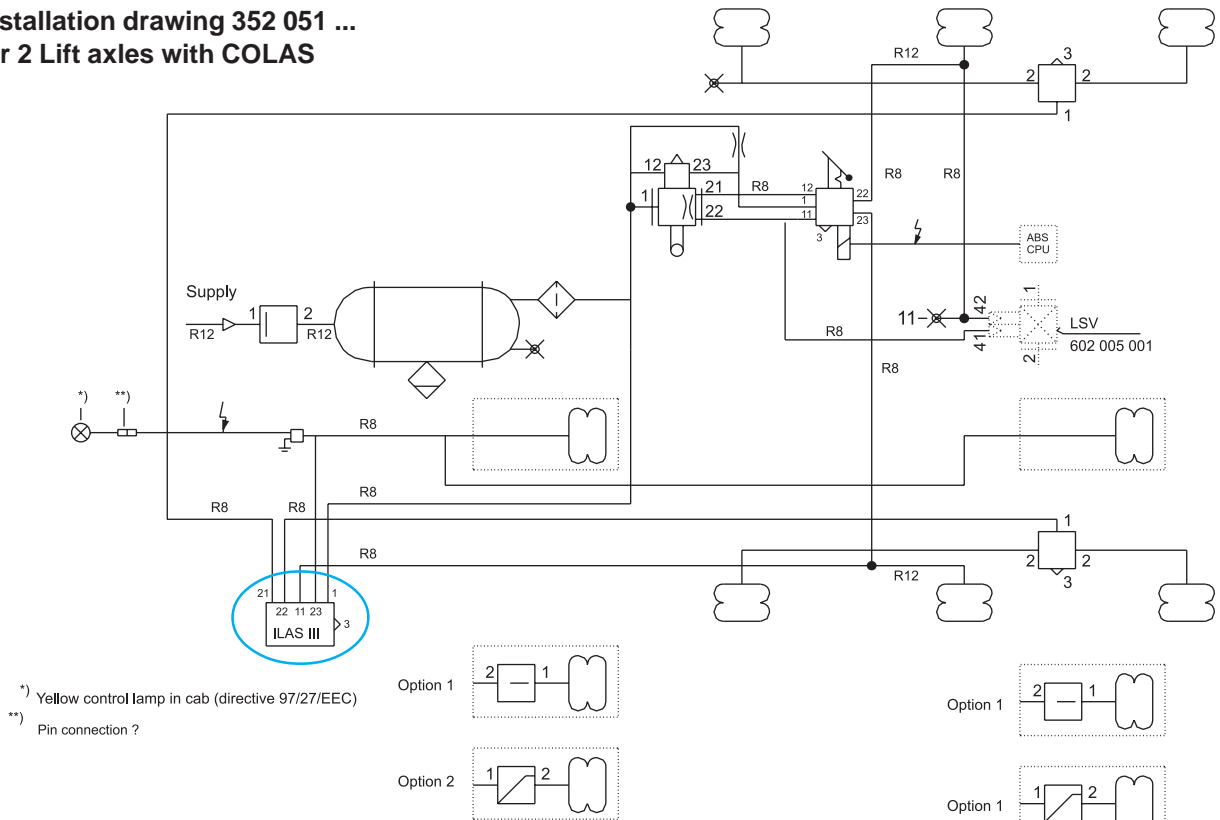
Option 1 = Pressure limiting valve  
Option 2 = Pressure limiting valve + Pressure protection valve w.b.

} Installation in according to axle- and vehicle manufacturer

Installation drawing 352 051 ...  
with turn off device



Installation drawing 352 051 ...  
for 2 Lift axes with COLAS



Option 1 = Pressure limiting valve  
 Option 2 = Pressure limiting valve + Pressure protection valve w.b. } Installation in according to axle- and vehicle manufacturer

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