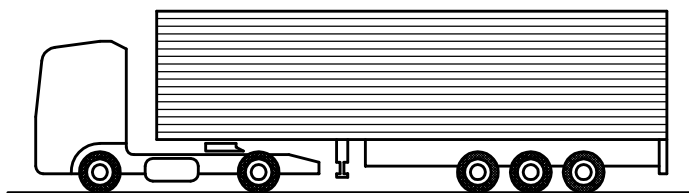
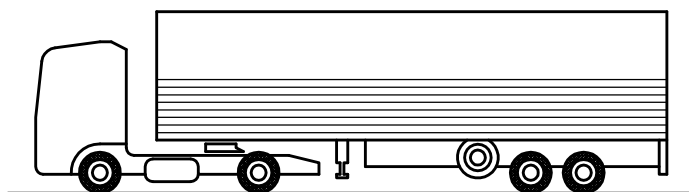
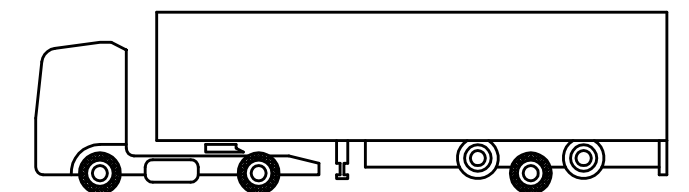




*LIFT AXLE CONTROL SYSTEMS  
AND PNEUMATIC VALVES  
FOR TRAILERS*

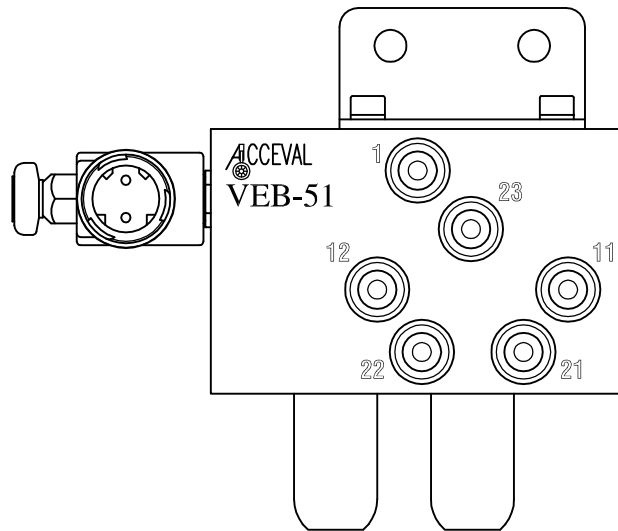


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# *Acceval* VEB-51



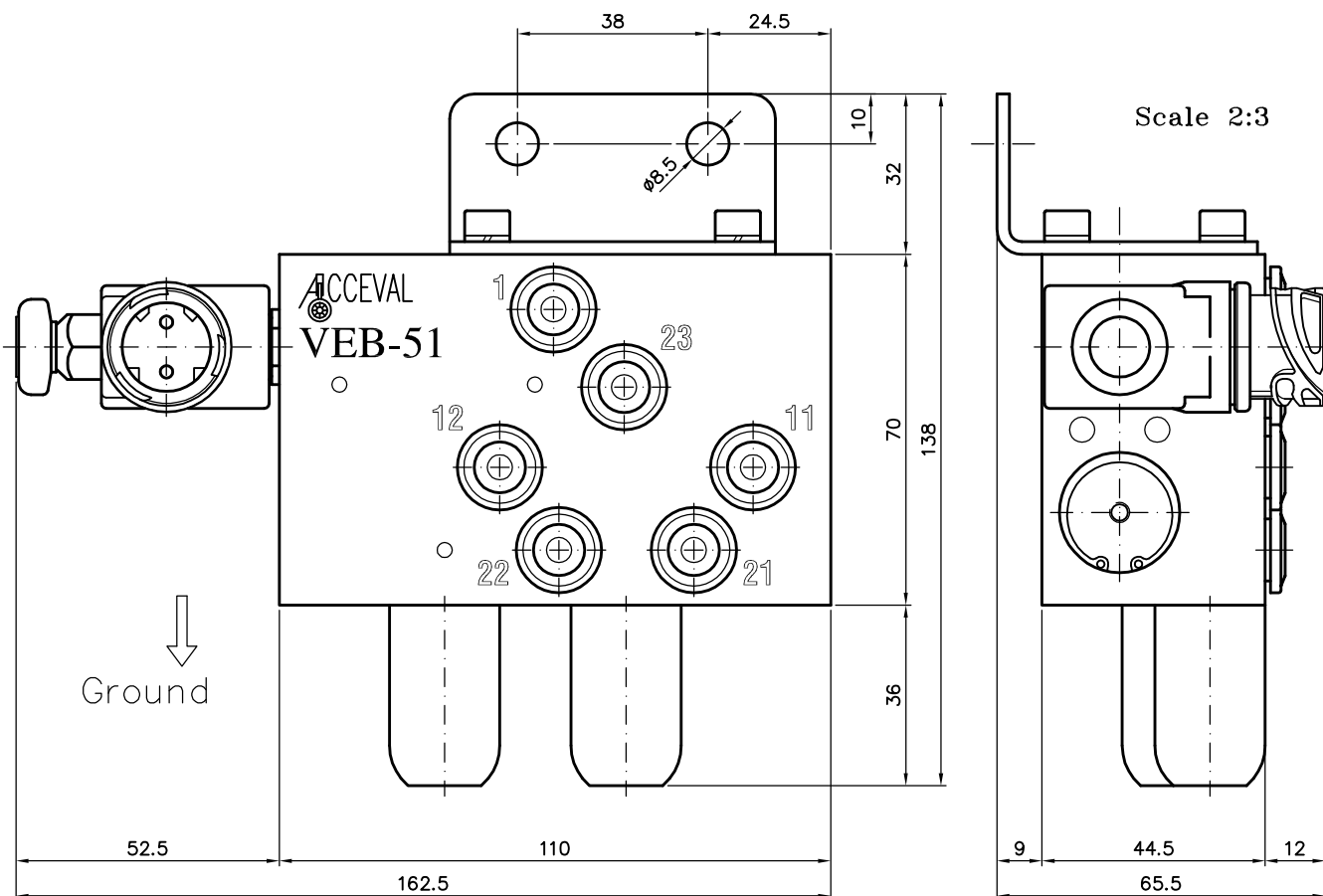
Lift Axle Control Valve  
Electrically Commanded  
From EBS System

For Suspensions with  
Double Circuit

# ACCEVAL VEB-51

LIFT AXLE CONTROL VALVE  
FOR EBS SYSTEM  
(SUSPENSION: DOUBLE CIRCUIT)

## EXTERNAL DIMENSIONS



### WORKING SPECIFICATIONS

- \* Pneumatic Scheme: See Drawing.
- \* Max. Working Pressure: 10 bar.
- \* Safe Static Pressure: 15 bar.
- \* Temp. Range: from  $-35^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .
- \* Solenoid: 24VDC 6W or 12VDC 9W.
- \* Electrical Duty: 100%.
- \* Solenoid with Industrial Connector DIN43650 (IP65) or Bayonet Connector DIN72585-A1-2.1 (IP68)
- \* Electromagnetic compatibility (EMC) according to 89/336/EEC.
- \* Low voltage equipment (LVD) according to 73/23/EEC.

### PNEUMATICAL CONNECTIONS

Ports n.1, 11, 12, 21, 22 and 23

- \* Insertable push-in fittings for 8mm, 10mm, 5/16", or 3/8" tubes.

Port n.3 (Exhaust) and Breathing

- \* Filter + filter cover.

Exhaust port of solenoid valve

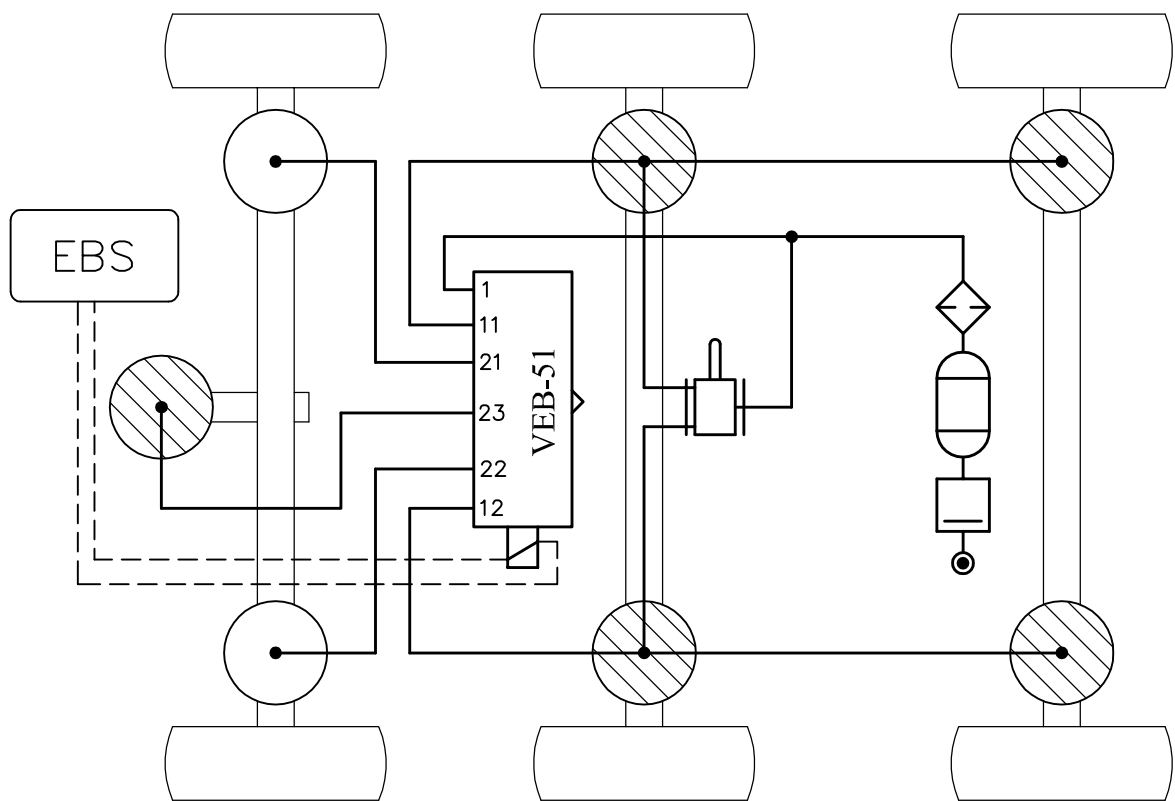
- \* Rubber cup protection.

Installation

- \* Port n.1: Air Pressure Inlet.
- \* Ports n.11, n.12: Suspension Lines.
- \* Ports n.21, n.22: Lift Axle AirSprings.
- \* Port n.23: Axle Lift.

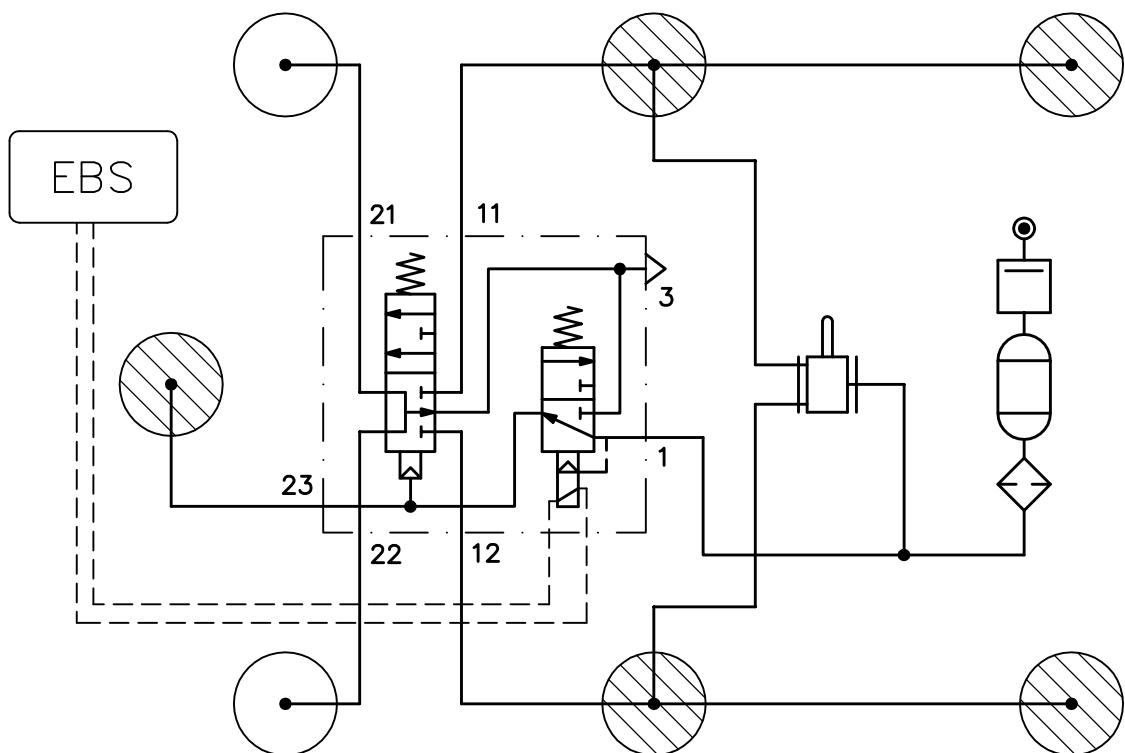
## ACCEVAL VEB-51

BASICAL CONNECTIONS SCHEME  
(Suspension: Double Circuit)



## ACCEVAL VEB-51

PNEUMATICAL SCHEME  
(Suspension: Double Circuit)



# ACCEVAL VEB-51

## VERSIONS AND ANCHORING ORIENTATION

### VERSIONS

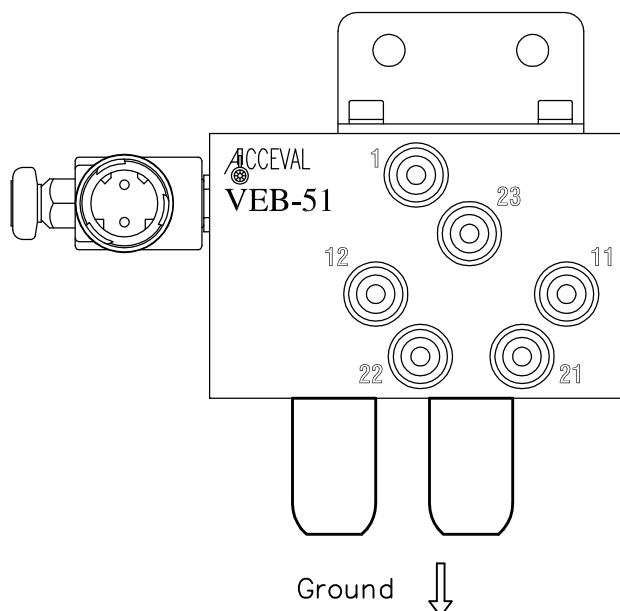
Valve Code	Push-in Fittings for:				Solenoid Voltage		Solenoid Connector	
	8mm tube	10mm tube	5/16" tube	3/8" tube	24 VDC	12 VDC	Industrial type	Bayonet type
VEB51-0824I								
VEB51-1024I								
VEB51-0824B								
VEB51-1024B								
VEB51-0812I								
VEB51-3812I								

### ANCHORING ORIENTATION

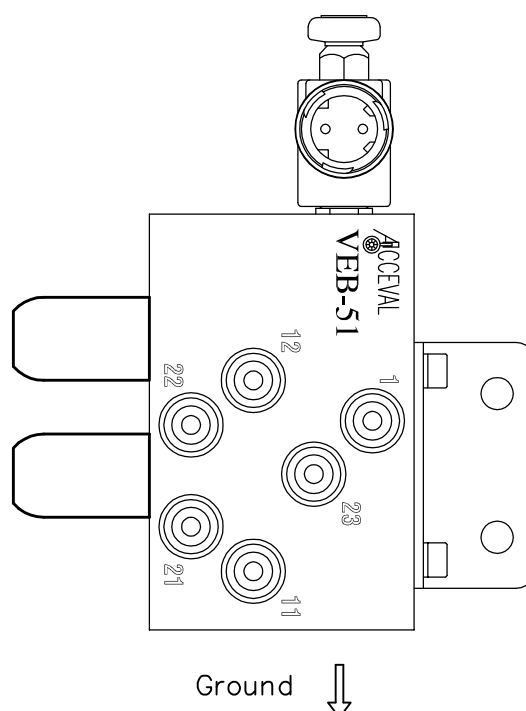
- \* The best orientation: Filters looking down.
- \* Acceptable orientation: Filters in horizontal position.
- \* Non-acceptable orientation: Filters looking up.

#### THE BEST ORIENTATION

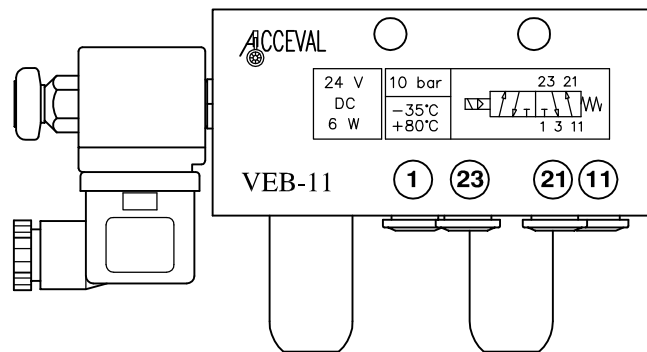
(Filters looking down)



#### ACCEPTABLE ORIENTATION



# *Acceval* VEB-11



Lift Axle Control Valve  
Electrically Commanded  
From EBS System

For Suspensions with  
Single Circuit



# ACCEVAL VEB-11

## LIFT AXLE CONTROL VALVE FOR EBS SYSTEM

(SUSPENSION: SINGLE CIRCUIT)

Scale 3:5

### WORKING SPECIFICATIONS

- \* Pneumatic Scheme: See Drawing.
- \* Max. Working Pressure: 10 bar.
- \* Safe Static Pressure: 15 bar.
- \* Temp. Range: from  $-35^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .
- \* Solenoid: 24VDC 6W or 12VDC 9W.
- \* Electrical Duty: 100%.
- \* Solenoid with Industrial Connector DIN43650 (IP65) or Bayonet Connector DIN72585-A1-2.1 (IP68).
- \* Electromagnetic compatibility (EMC) according to 89/336/EEC.
- \* Low voltage equipment (LVD) according to 73/23/EEC.

### PNEUMATICAL CONNECTIONS

Ports n.1, n.23, n.21 and n.11

- \* Insertable push-in fittings for 8mm, 10mm, 5/16", or 3/8" tubes.

Port n.3 (Exhaust) and Breathing

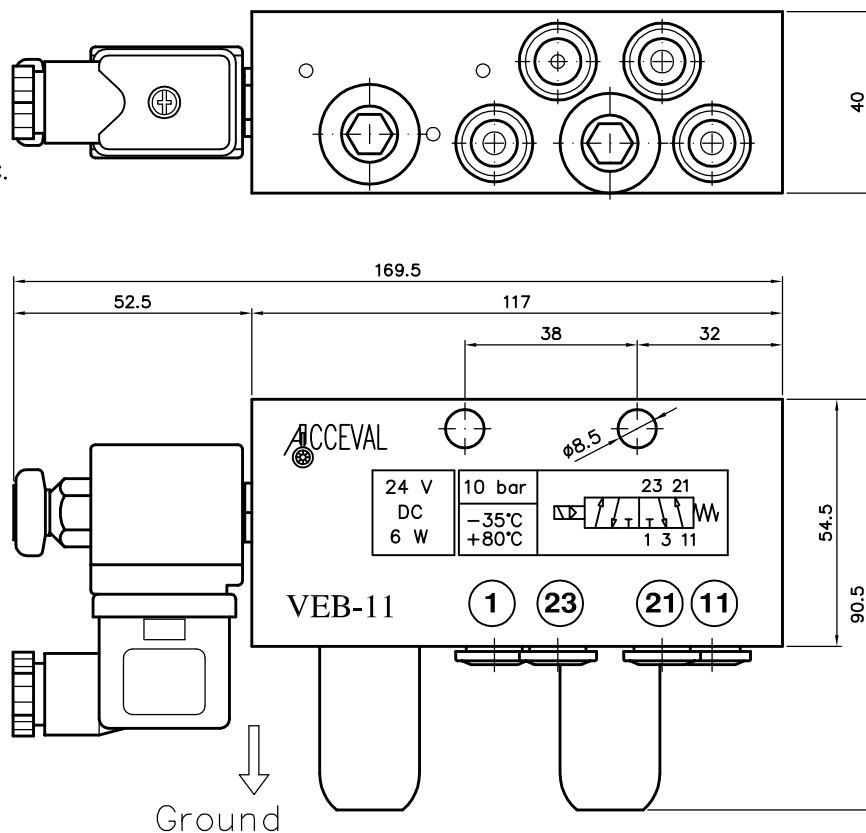
- \* Filter + filter cover.

Exhaust port of solenoid valve

- \* Rubber cup protection.

### Installation

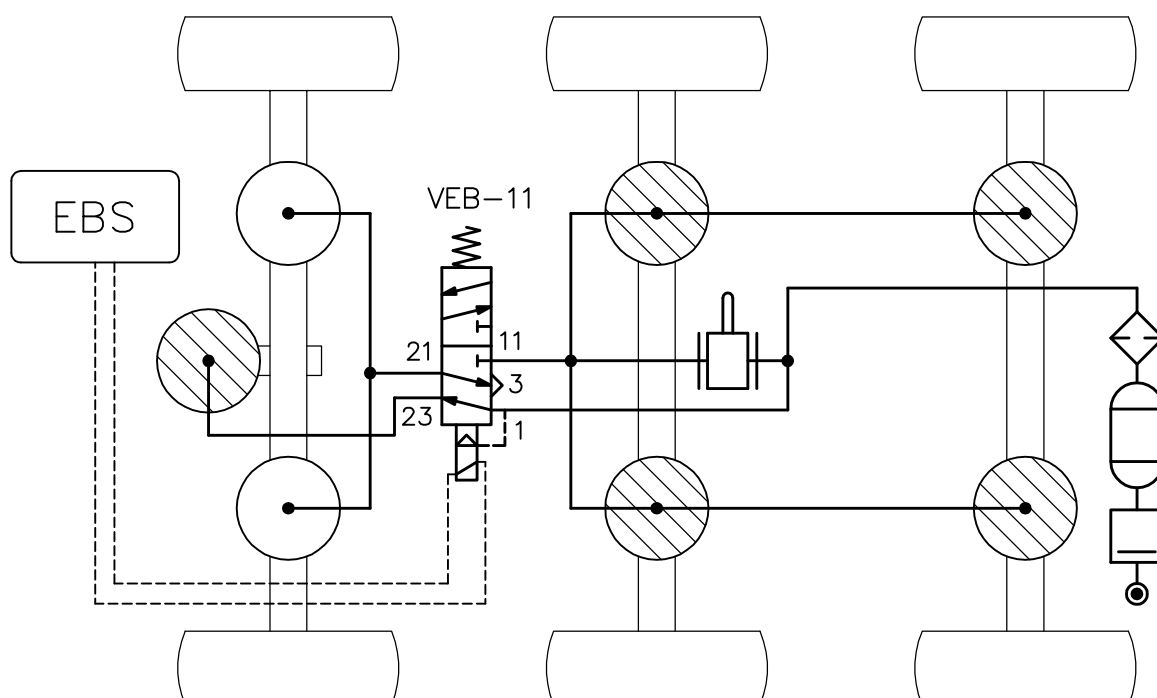
- \* Port n.1: Air Pressure Inlet.
- \* Port n.11: Suspension Line.
- \* Port n.21: Lift Axle AirSprings.
- \* Port n.23: Axle Lift.



# ACCEVAL VEB-11

## PNEUMATICAL SCHEME

(Suspension: Single Circuit)



# ACCEVAL VEB-11

## VERSIONS AND ANCHORING ORIENTATION

### VERSIONS

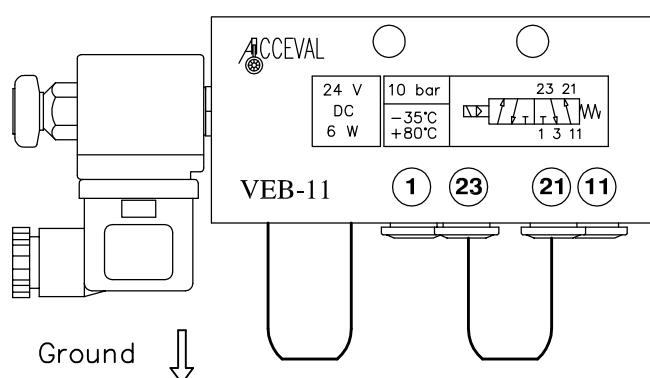
Valve Code	Push-in Fittings for:				Solenoid Voltage		Solenoid Connector	
	8mm tube	10mm tube	5/16" tube	3/8" tube	24 VDC	12 VDC	Industrial type	Bayonet type
VEB11-0824I								
VEB11-1024I								
VEB11-0824B								
VEB11-1024B								
VEB11-0812I								
VEB11-3812I								

### ANCHORING ORIENTATION

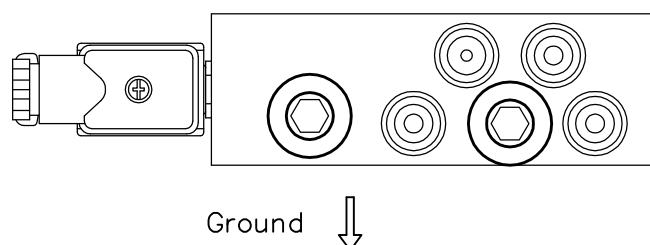
- \* The best orientation: Filters looking down.
- \* Acceptable orientation: Filters in horizontal position.
- \* Non-acceptable orientation: Filters looking up.

#### THE BEST ORIENTATION

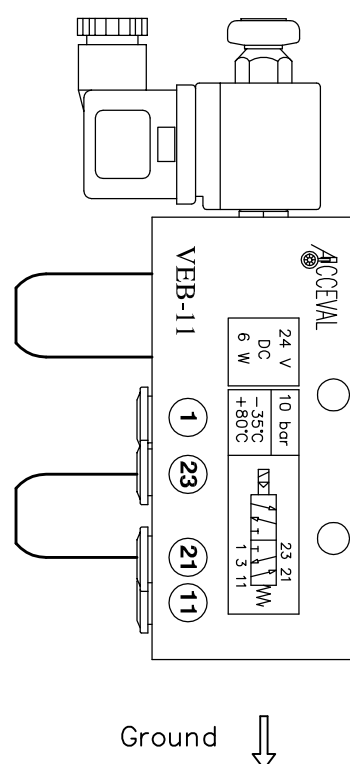
(Filters looking down)



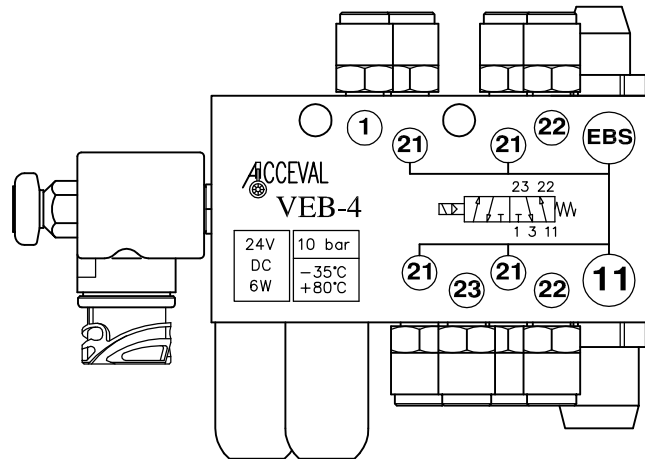
#### ACCEPTABLE ORIENTATION



#### ACCEPTABLE ORIENTATION



# *Acceval* VEB-4



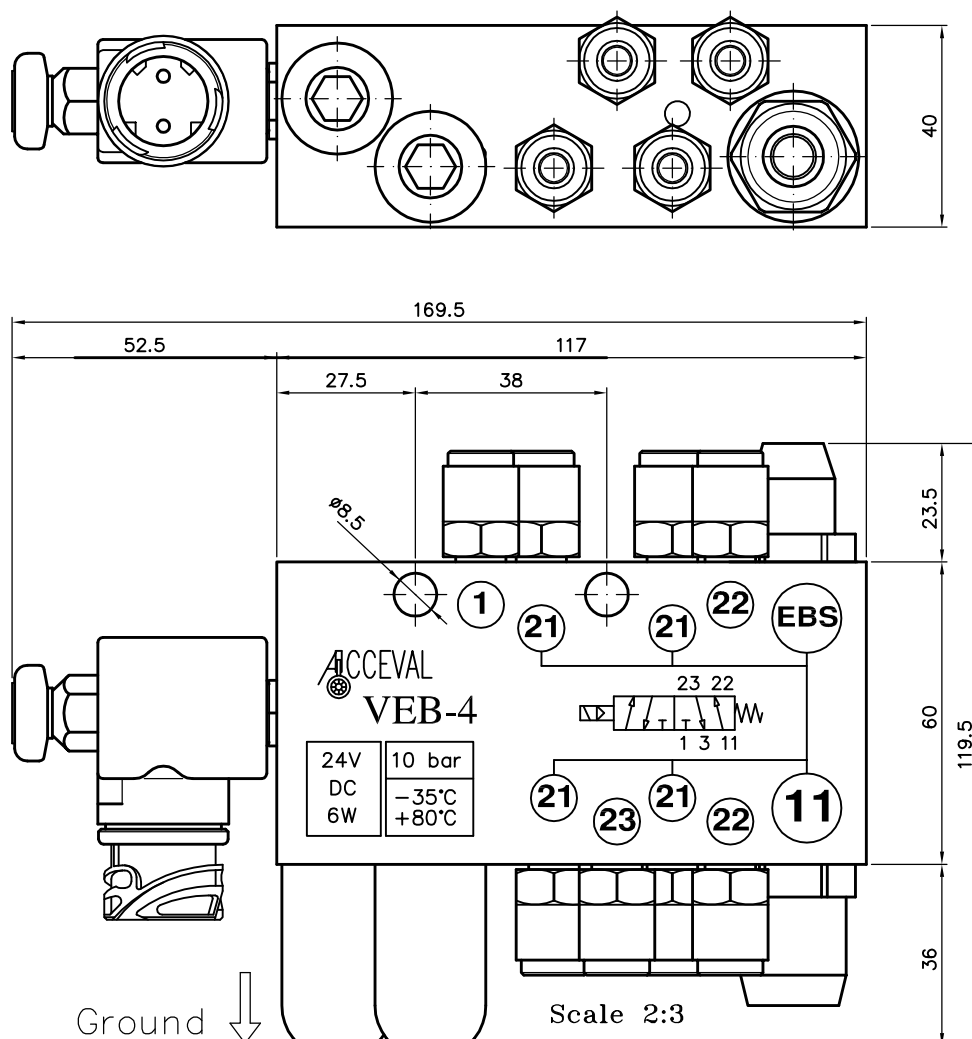
Lift Axle Control Valve  
Electrically Commanded  
From EBS System

For Suspensions with  
Single Circuit

Air Suspension  
Distribution Block

# ACCEVAL VEB-4

AIR DISTRIBUTION BLOCK  
WITH LIFT AXLE CONTROL  
VALVE FOR EBS SYSTEM  
(SUSPENSION: SINGLE CIRCUIT)



## WORKING SPECIFICATIONS

- \* Pneumatical scheme: see drawing.
- \* Max. working pressure: 10 bar.
- \* Safe static pressure: 15 bar.
- \* Temp. range: from  $-35^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .
- \* Electrical details: 24V DC 6W.
- \* Electrical Duty: 100%.
- \* Solenoid with bayonet connector DIN72585-A1-2.1 (IP-68).
- \* Electromagnetic compatibility (EMC) according to 89/336/EEC.
- \* Low voltage equipment (LVD) according to 73/23/EEC.
- \* Optional: Solenoid with industrial connector DIN43650 (IP-65).

## PNEUMATICAL CONNECTIONS

Ports n.1, n.21, n.22 and n.23

- \* Automotive push-in fittings T-8mm.

Port n.11

- \* Automotive push-in fittings T-12mm.

Port n.3 (Exhaust) and breathing

- \* Filter + filter cover.

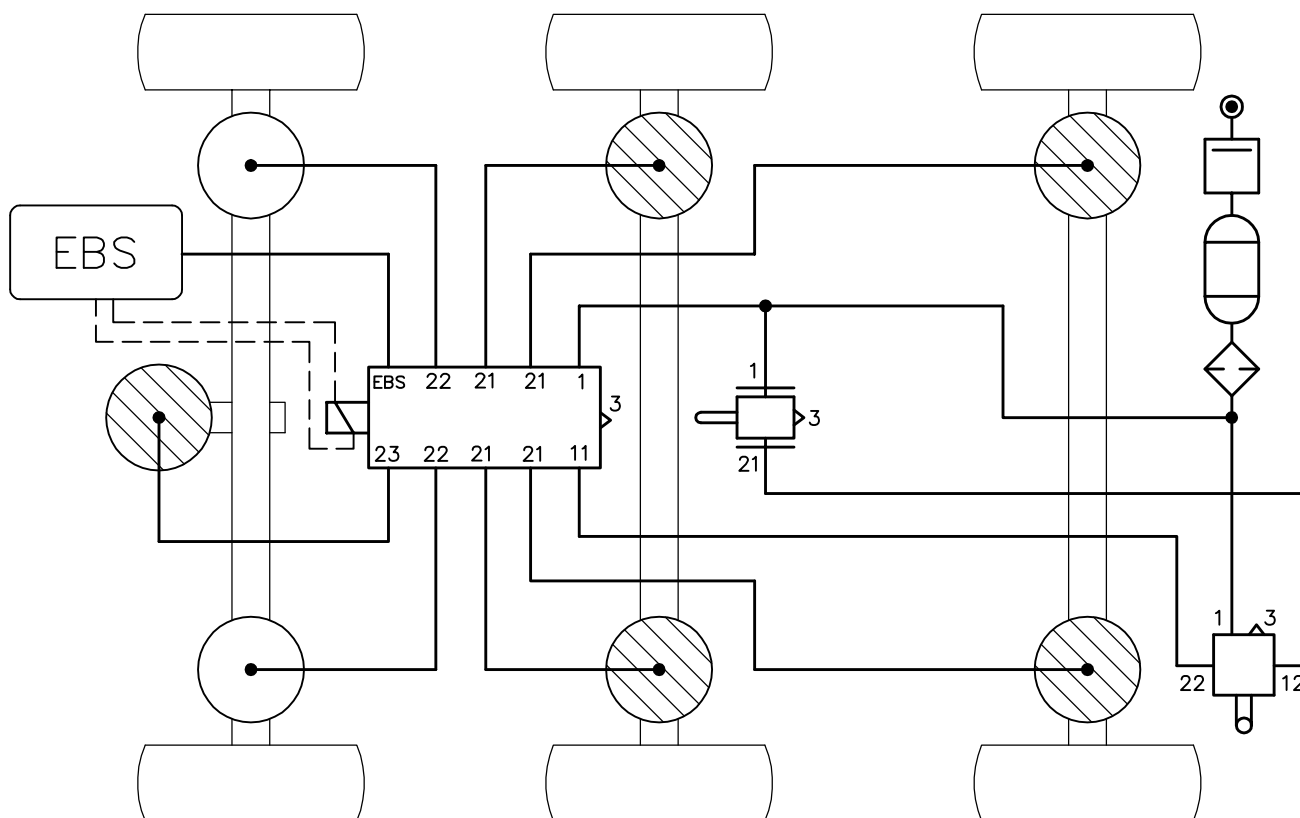
Exhaust port of solenoid valve

- \* Rubber cup protection.

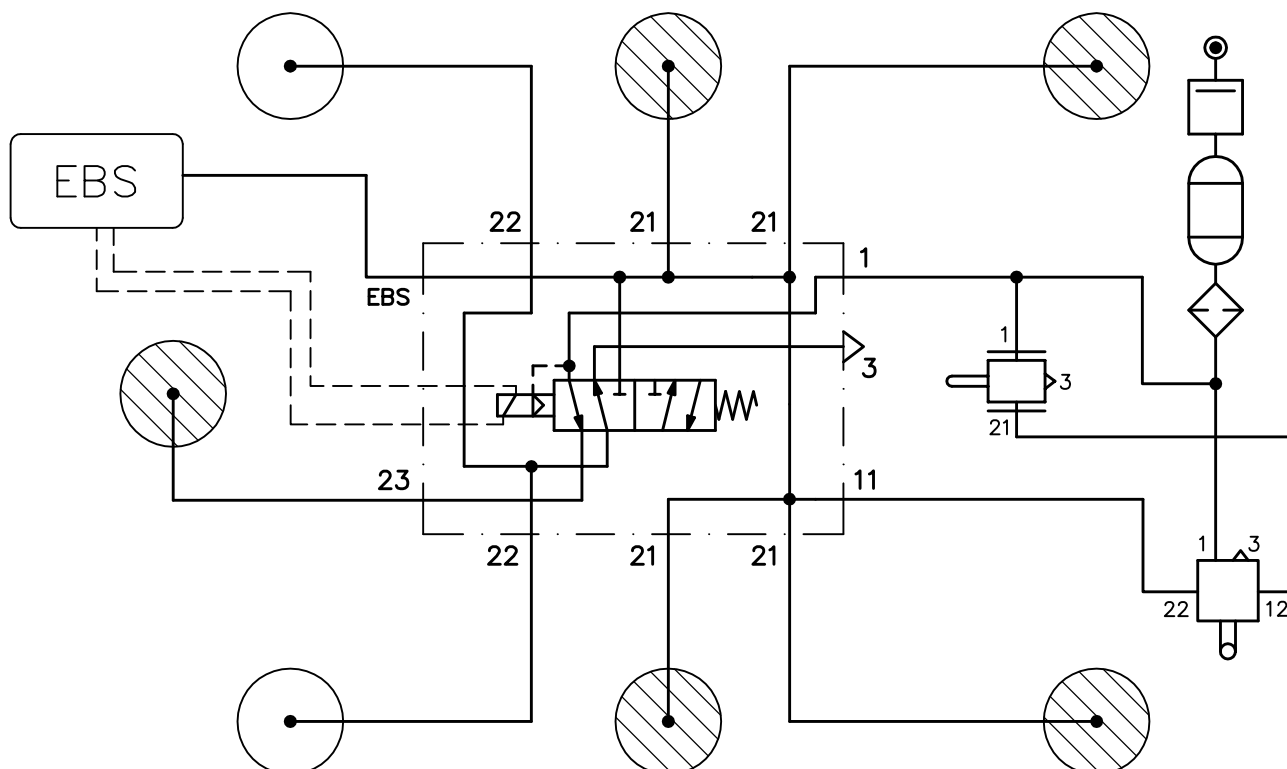
Installation

- \* Port n.1: Air pressure inlet.
- \* Port n.11: From raise/lower valve.
- \* Port n.21: To non-lift axle bellows.
- \* Port n.22: To lift axle bellows.
- \* Port n.23: To lifter.
- \* Port "EBS": To EBS pressure sensor.

**ACCEVAL VEB-4**  
 BASIC CONNECTIONS SCHEME  
 (Suspension: Single Circuit)



**ACCEVAL VEB-4**  
 PNEUMATICAL SCHEME  
 (Suspension: Single Circuit)



# ACCEVAL VEB-4

## OPTIONS AND ANCHORING ORIENTATION

### OPTIONS

#### 1) Electrical connector:

##### \* Standard:

Solenoid with bayonet connector DIN72585-A1-2.1 (IP-68).

##### \* Optional:

Solenoid with industrial connector DIN43650 (IP-65).

#### 2) Connection for EBS pressure sensor:

\* Standard: With M16x1,5-T8mm fitting in port "EBS".

\* Optional: Without fitting in port "EBS".

#### 3) Passage diameter of port N.23:

\* Standard:  $\varnothing 1.6$  mm.

\* Optional:  $\varnothing 3.0$  mm.

### ANCHORING ORIENTATION

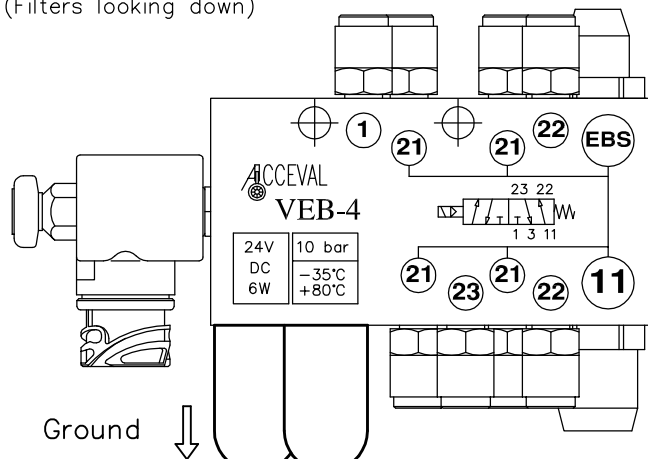
\* The best orientation: Filters looking down.

\* Acceptable orientation: Filters in horizontal position.

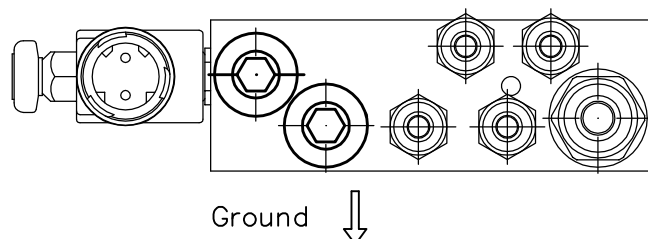
\* Non-acceptable orientation: Filters looking up.

#### THE BEST ORIENTATION

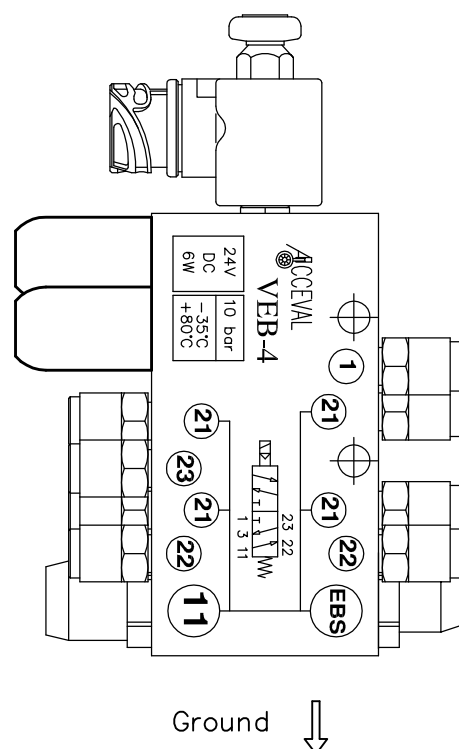
(Filters looking down)



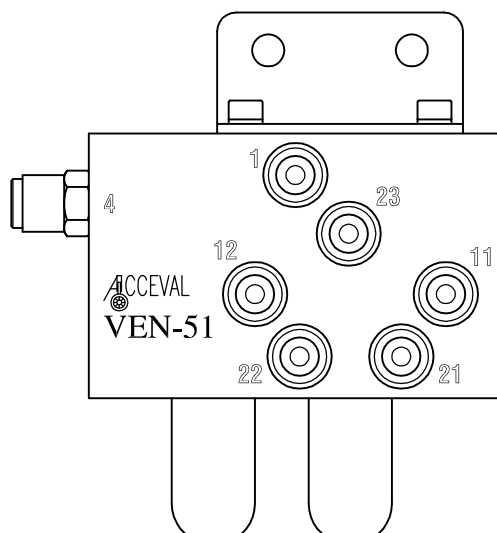
#### ACCEPTABLE ORIENTATION



#### ACCEPTABLE ORIENTATION



# *Acceval* VEN-51



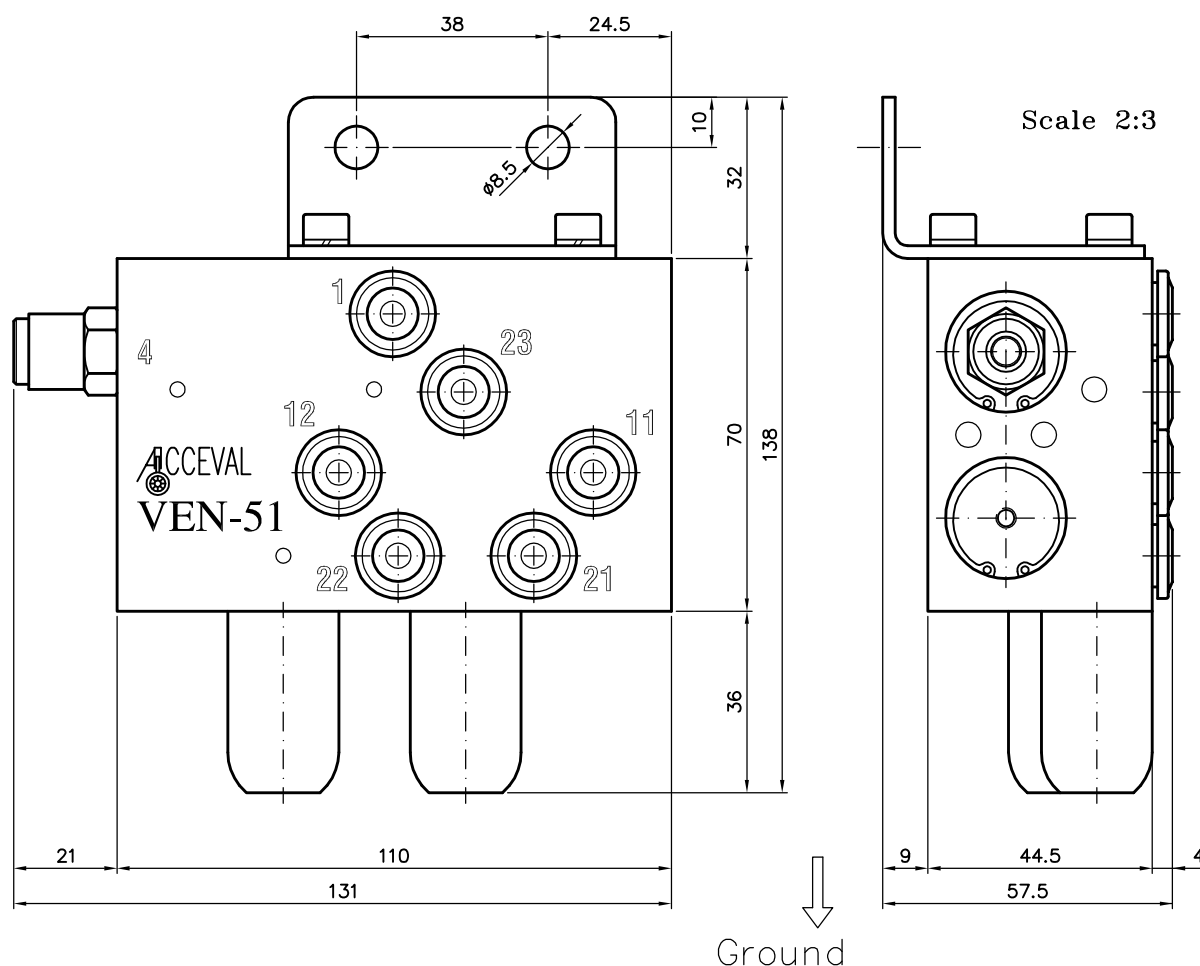
Lift Axle Control Valve  
Pneumatically Commanded  
From EBS System

For Suspensions with  
Double Circuit

# ACCEVAL VEN-51

LIFT AXLE CONTROL VALVE FOR  
EBS SYSTEM WITH AIR OPERATION  
(SUSPENSION: DOUBLE CIRCUIT)

## EXTERNAL DIMENSIONS



### WORKING SPECIFICATIONS

- \* Pneumatic Scheme: See Drawing.
- \* Max. Working Pressure: 10 bar.
- \* Safe Static Pressure: 15 bar.
- \* Temp. Range: from  $-35^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .

### VERSIONS

Valve Code	Push-in Fittings for:			
	8mm tube	10mm tube	5/16" tube	3/8" tube
VEN51-0808				
VEN51-1008				
VEN51-0808				
VEN51-3808				

### PNEUMATICAL CONNECTIONS

Ports n.1, 11, 12, 21, 22 and 23

- \* Insertable push-in fittings for 8mm, 10mm, 5/16", or 3/8" tubes.

Port n.3 (Exhaust) and Breathing

- \* Filter + filter cover.

Exhaust port of solenoid valve

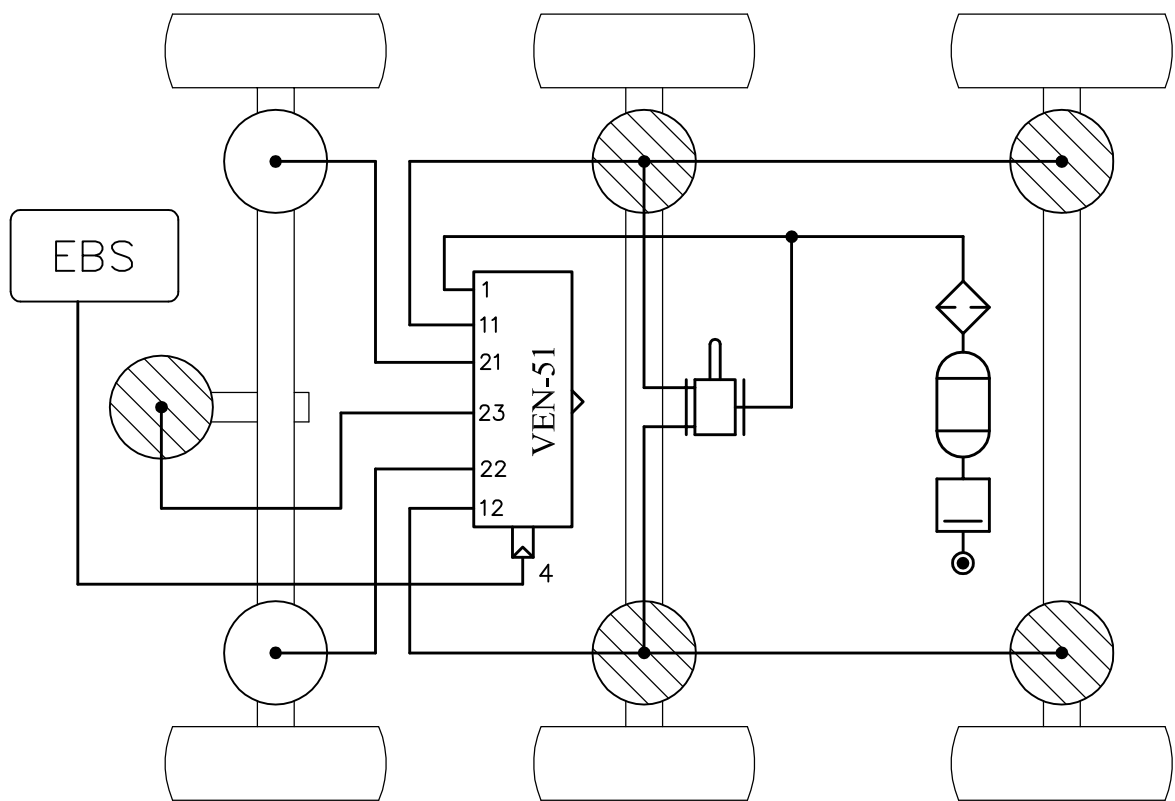
- \* Rubber cup protection.

### Installation

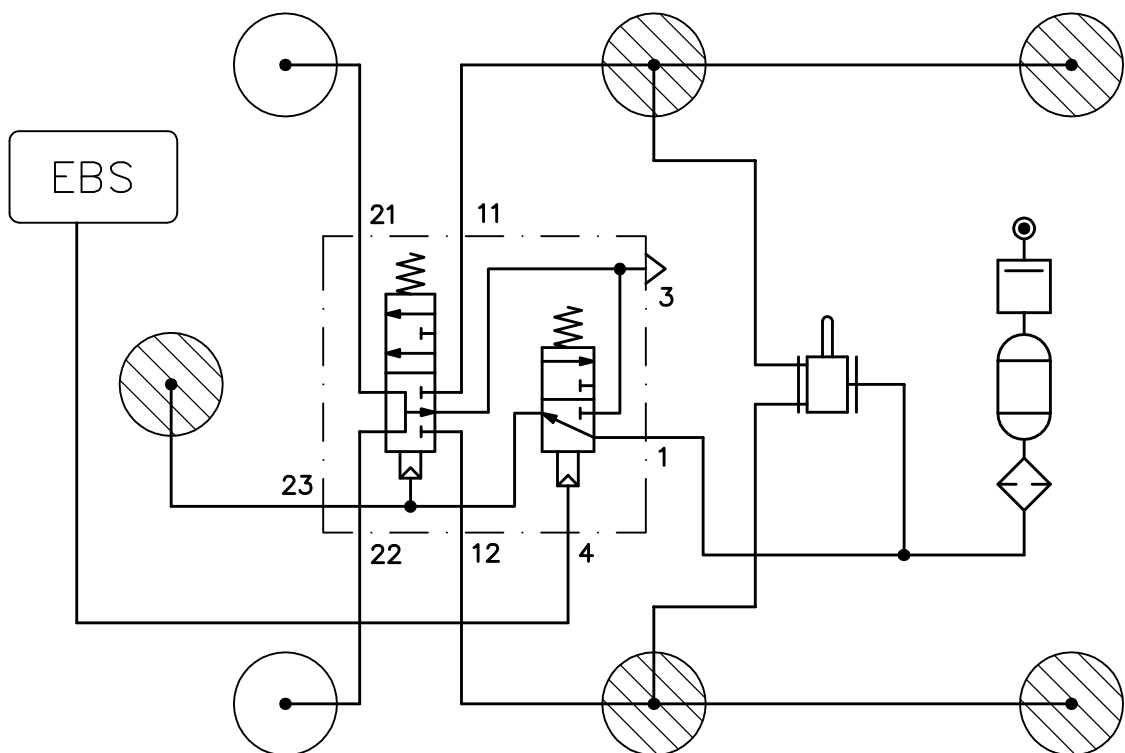
- \* Port n.1: Air Pressure Inlet.
- \* Ports n.11, n.12: Suspension Lines.
- \* Ports n.21, n.22: Lift Axle AirSprings.
- \* Port n.23: Axle Lift.
- \* Port n.4: Air Command from EBS. (8mm - 5/16" Tube)



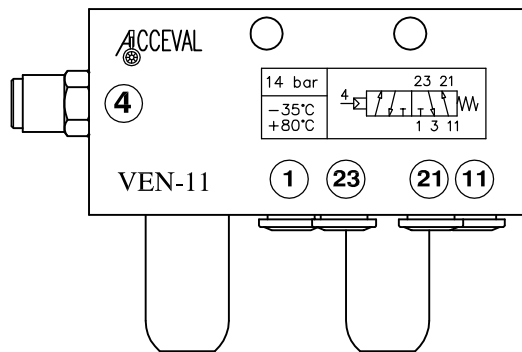
**ACCEVAL VEN-51**  
**BASIC CONNECTIONS SCHEME**  
 (Suspension: Double Circuit)



**ACCEVAL VEN-51**  
**PNEUMATICAL SCHEME**  
 (Suspension: Double Circuit)



# *Acceval* VEN-11



Lift Axle Control Valve  
Pneumatically Commanded  
From EBS System

For Suspensions with  
Single Circuit

# ACCEVAL VEN-11

## LIFT AXLE CONTROL VALVE FOR EBS SYSTEM WITH AIR OPERATION (SUSPENSION: SINGLE CIRCUIT)

### WORKING SPECIFICATIONS

- \* Pneumatic Scheme: See Drawing.
- \* Max. Working Pressure: 10 bar.
- \* Safe Static Pressure: 15 bar.
- \* Temp. Range: from  $-35^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .

### PNEUMATICAL CONNECTIONS

Ports n.1, n.23, n.21 and n.11

- \* Insertable push-in fittings for 8mm, 10mm, 5/16", or 3/8" tubes.

Port n.3 (Exhaust) and Breathing

- \* Filter + filter cover.

Exhaust port of solenoid valve

- \* Rubber cup protection.

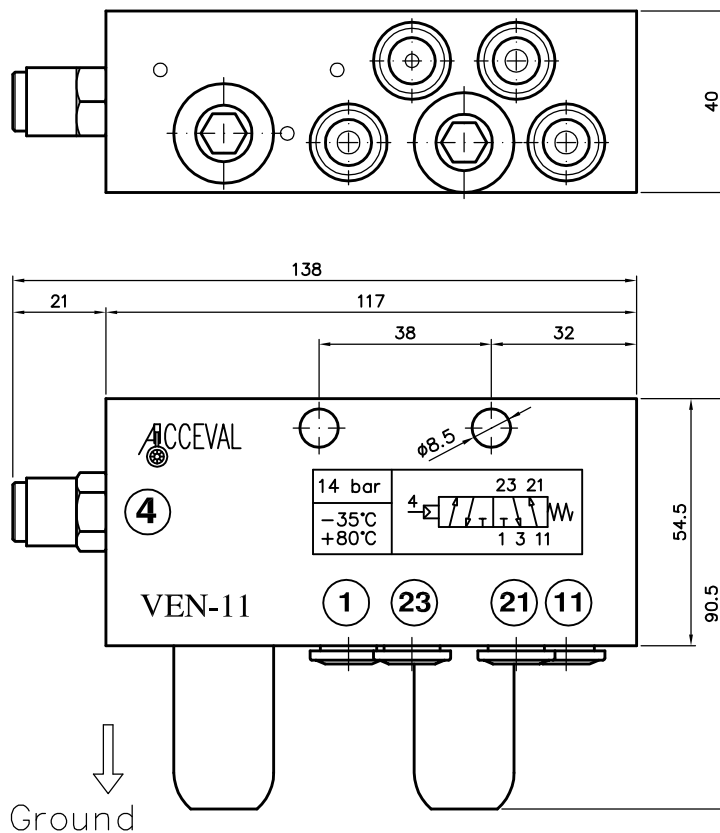
### Installation

- \* Port n.1: Air Pressure Inlet.
- \* Port n.11: Suspension Line.
- \* Port n.21: Lift Axle AirSprings.
- \* Port n.23: Axle Lift.
- \* Port n.4: Air Command from EBS.  
(8mm - 5/16" tube)

### VERSIONS

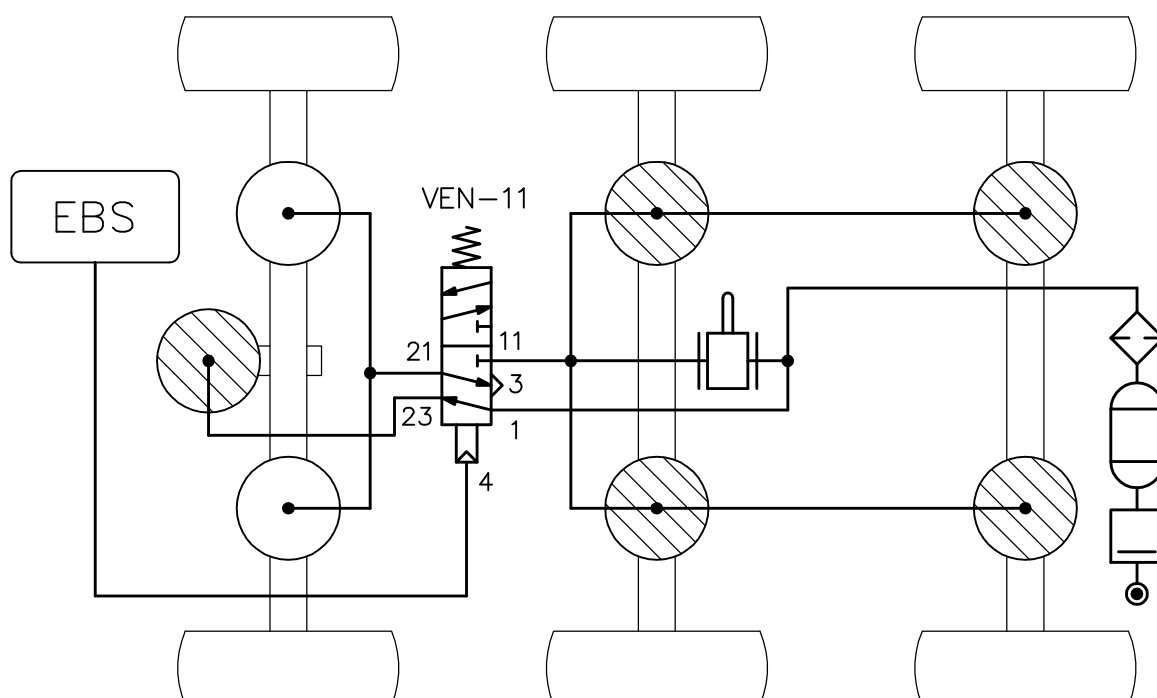
Valve Code	Push-in Fittings for:			
	8mm tube	10mm tube	5/16" tube	3/8" tube
VEN11-0808				
VEN11-1008				
VEN11-0808				
VEN11-3808				

Scale 3:5

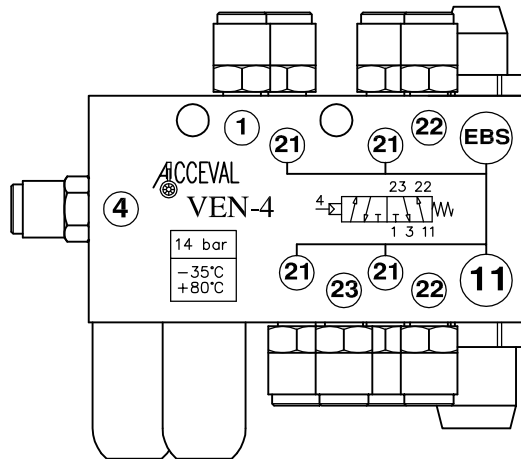


## ACCEVAL VEN-11

### PNEUMATICAL SCHEME (Suspension: Single Circuit)



# *Acceval* VEN-4



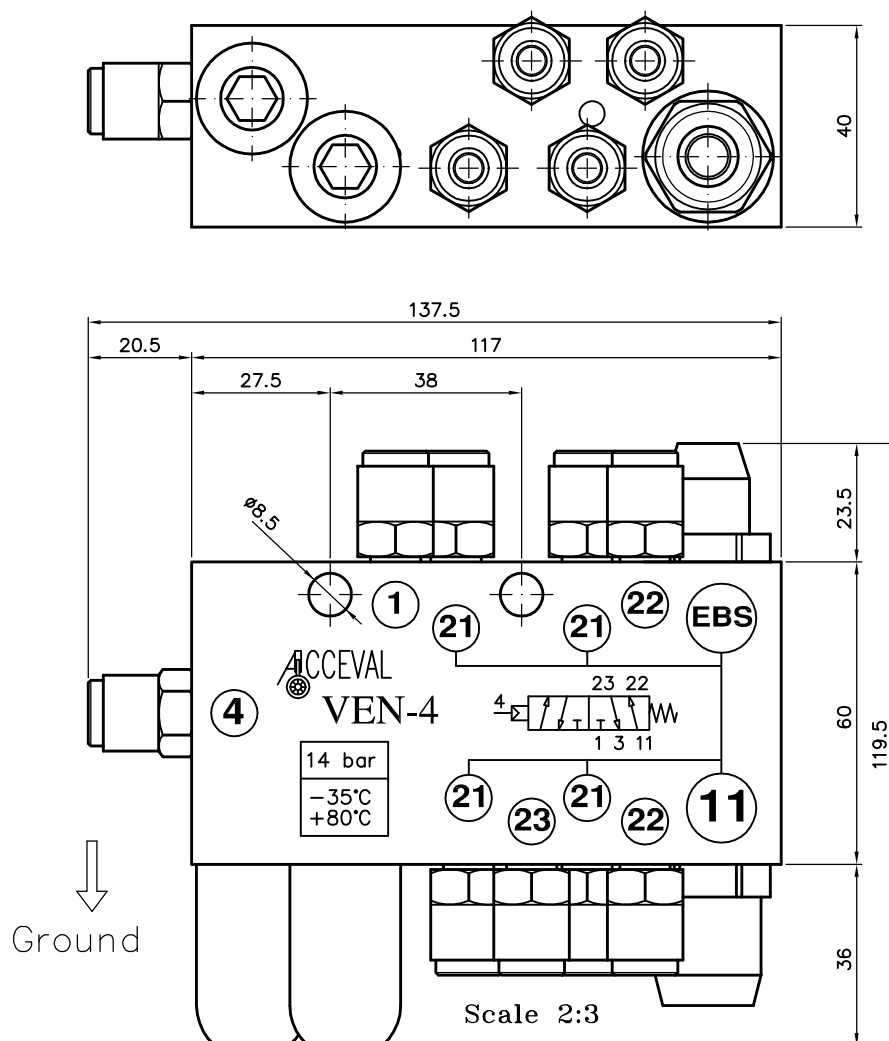
Lift Axle Control Valve  
Pneumatically Commanded  
From EBS System

For Suspensions with  
Single Circuit

Air Suspension  
Distribution Block

# ACCEVAL VEN-4

AIR DISTRIBUTION BLOCK WITH  
LIFT AXLE CONTROL VALVE FOR  
EBS SYSTEM WITH AIR OPERATION  
(SUSPENSION: SINGLE CIRCUIT)



## WORKING SPECIFICATIONS

- \* Pneumatical scheme: see drawing.
- \* Max. working pressure: 14 bar.
- \* Safe static pressure: 20 bar.
- \* Temp. range: from  $-35^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .

## PNEUMATICAL CONNECTIONS

Ports n.1, n.4, n.21, n.22 and n.23

- \* Automotive push-in fittings T-8mm.

Port n.11

- \* Automotive push-in fittings T-12mm.

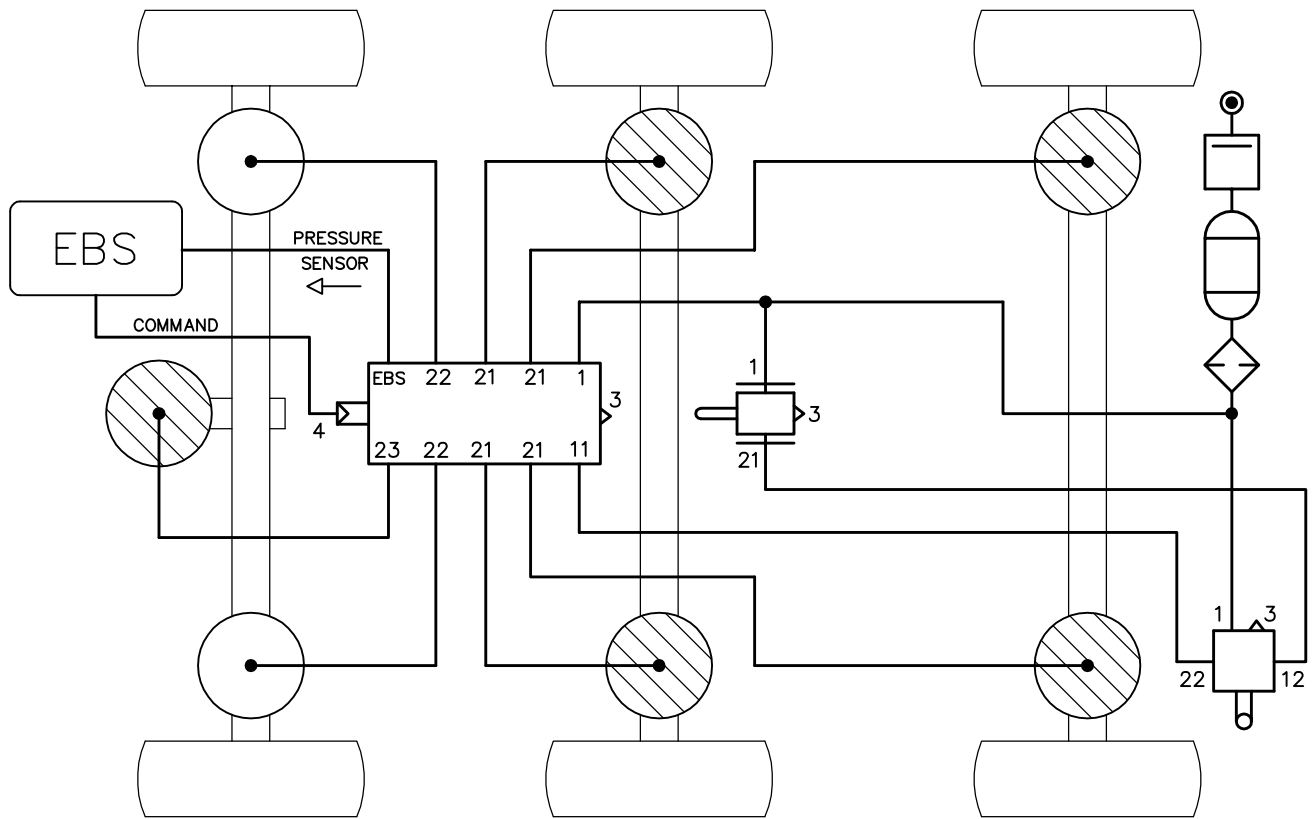
Port n.3 (Exhaust) and breathing

- \* Filter + filter cover.

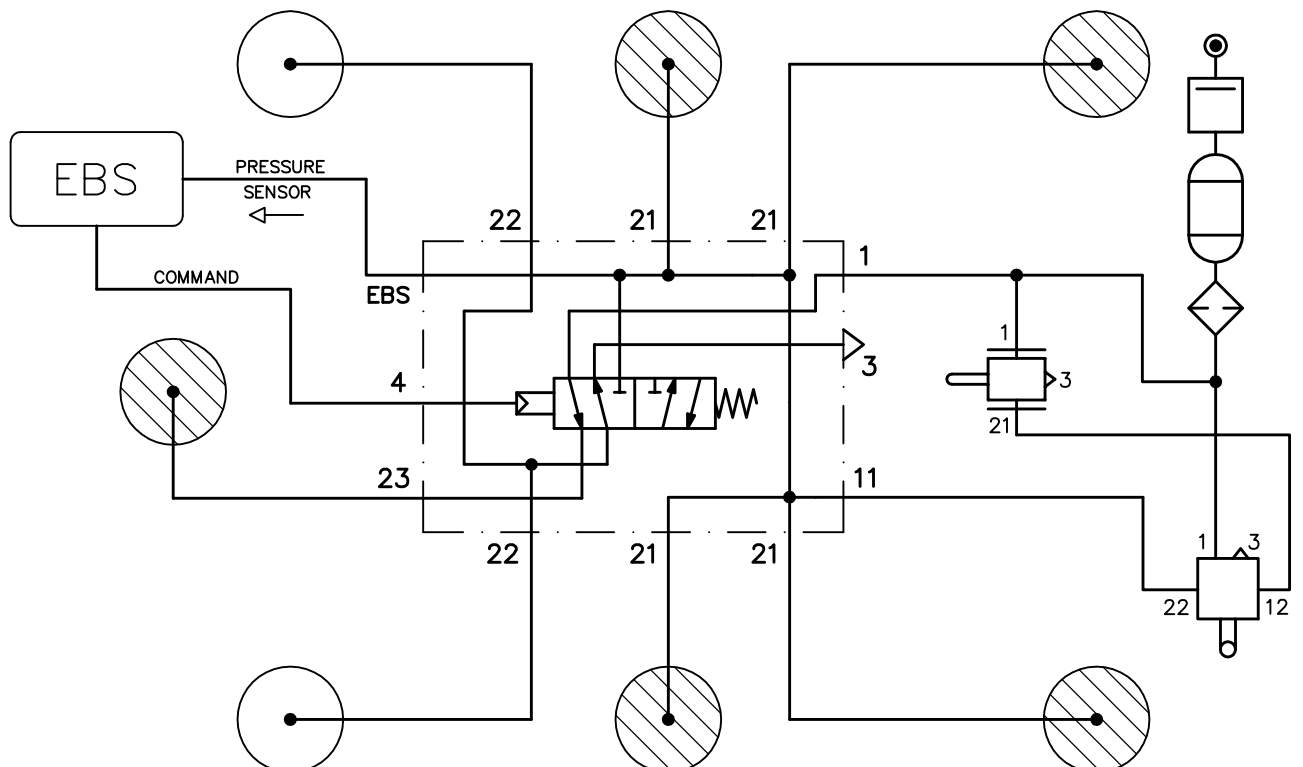
Installation

- \* Port n.1: Air pressure inlet.
- \* Port n.4: Air command from EBS.
- \* Port n.11: From raise/lower valve.
- \* Port n.21: To non-lift axle bellows.
- \* Port n.22: To lift axle bellows.
- \* Port n.23: To lifter.
- \* Port "EBS": To EBS pressure sensor.

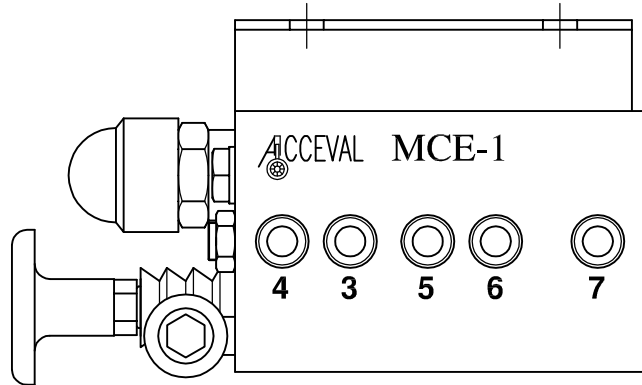
**ACCEVAL VEN-4**  
**BASICAL CONNECTIONS SCHEME**  
 (Suspension: Single Circuit)



**ACCEVAL VEN-4**  
**PNEUMATICAL SCHEME**  
 (Suspension: Single Circuit)



# *Acceval* MCE-1



Lift Axle Control Valve  
With Automatic Drop Function

Independent of EBS System

For Suspensions with  
Double Circuit

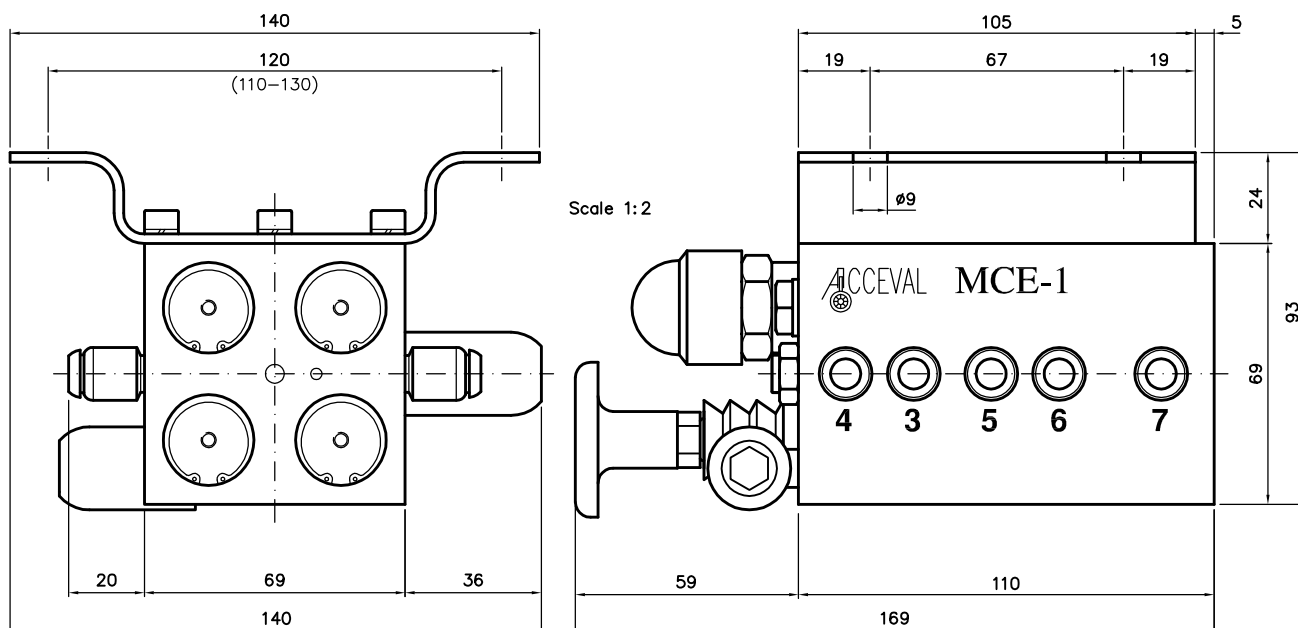
Automatic Drop  
and Manual Lifting

# ACCEVAL MCE-1

SEMI-AUTOMATIC LIFT AXLE CONTROL VALVE  
(Automatic Drop and Manual Lifting)



Nr. 390-0582-96 FBK/B

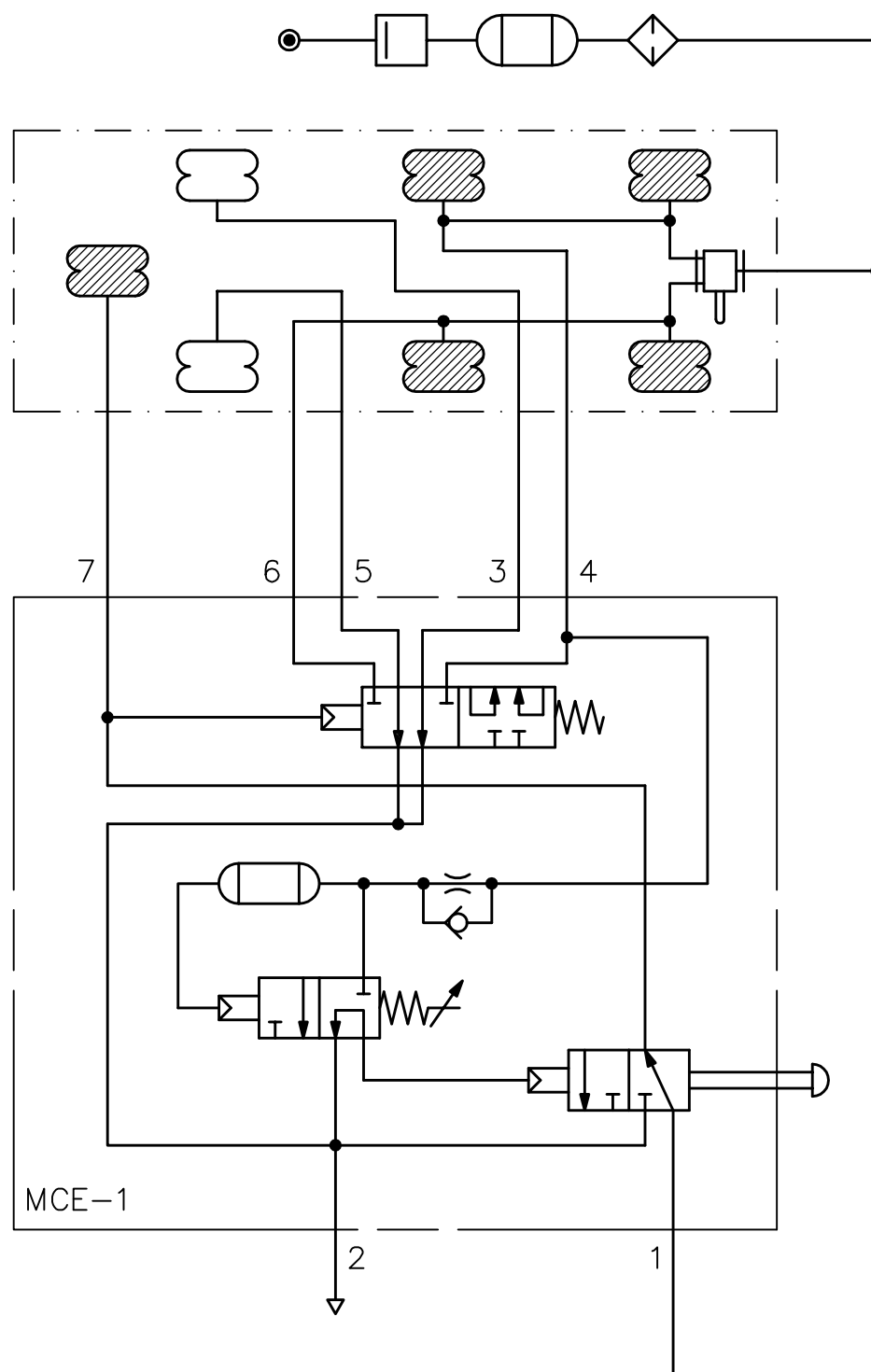


## SPECIFICATIONS

- \* Semi-automatic lift axle control valve for double suspension circuit.
- \* Manual Drop and Lifting.
- \* Automatic Drop.
- \* Fluid to use: Filtered air.
- \* Max. working pressure: 14 bar.
- \* Temperature range: From  $-35^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .
- \* Automatic drop pressure range:
  - From 2.5 bar to 5.8 bar.
- \* Standard fittings:
  - Push-in fittings for 8 mm tube.
- \* Pneumatic Scheme and Piping: See separate document.
- \* Options:
  - Straight fittings for 10 mm tube.
  - Straight fittings for  $3/8''$  tube.
  - Automotive straight fittings for 8 mm tube.
  - Steerable elbow fittings for 8 mm tube.
  - Pressure check tapping.

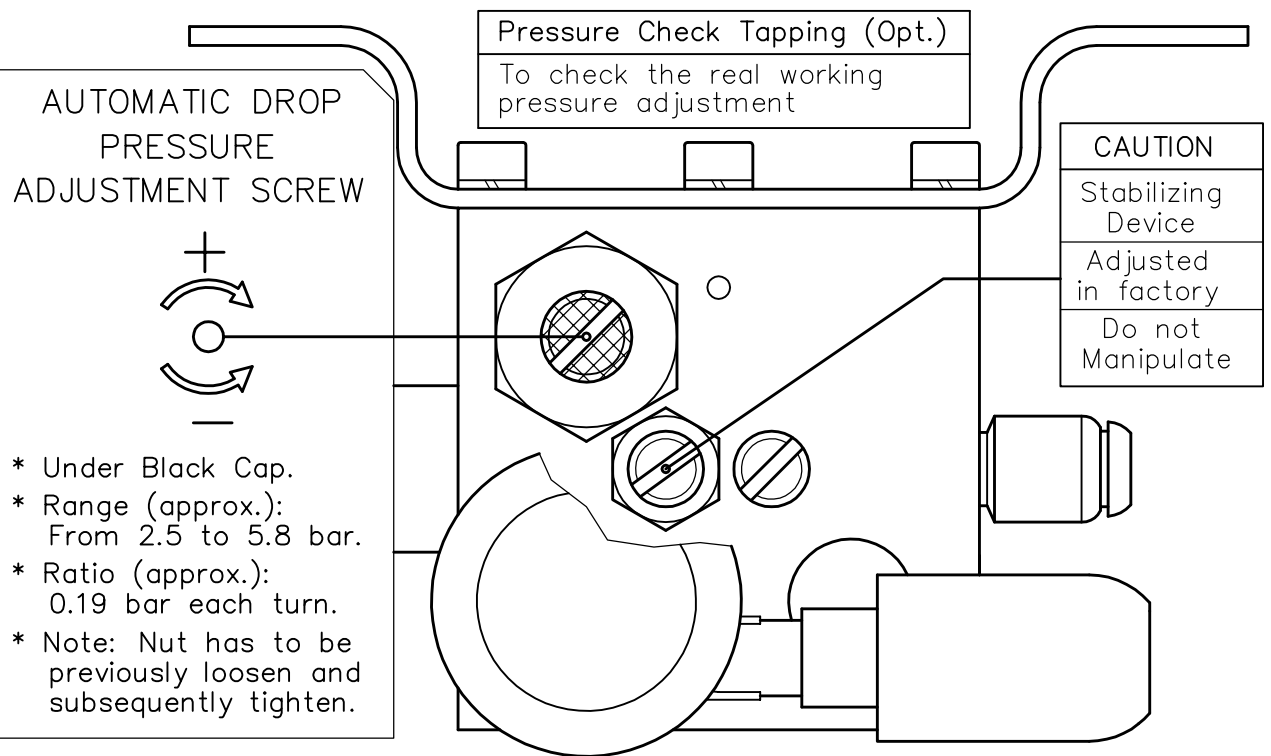


# ACCEVAL MCE-1 PENUMATICAL SCHEME



## ACCEVAL MCE-1 ADJUSTMENT SCREWS

### AUTOMATIC DROP PRESSURE



## ACCEVAL MCE-1 PRACTICAL SETTING VALUES

Automatic drop pressure of MCE-1 valve has to be adjusted according to specific characteristics of the used suspension.

Customers can order MCE-1 valves with the exactly settings, according to load/pressure graph of the used suspension, or they can use a reduced group of practical settings to cover all the different cases, in a functional and safe way (Note: Each case has to be previously calculated and validated).

For MCE-1 valves and vehicles with only one lift axle, we can get it with two different setting values, corresponding to the following two order codes:

#### A. MCE1-3200

VEHICLE WITH 360 MM SUSPENSION BELLOWS

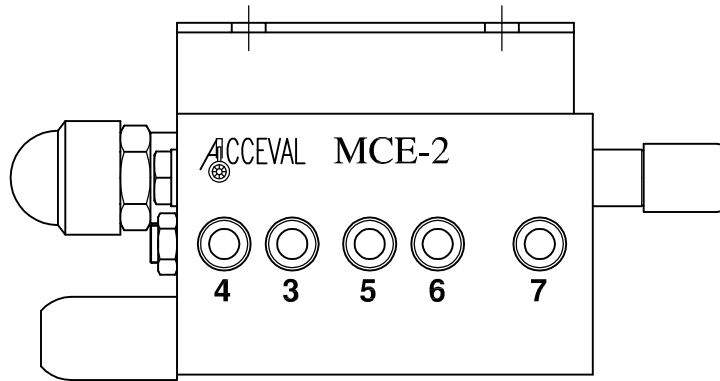
\* Automatic Drop Pressure: 3.2 Bar

#### B. MCE1-4500

VEHICLE WITH 300 MM SUSPENSION BELLOWS

\* Automatic Drop Pressure: 4.5 Bar

# *Acceval* MCE-2



Lift Axle Control Valve  
With Automatic Drop Function

Independent of EBS System

For Suspensions with  
Double Circuit

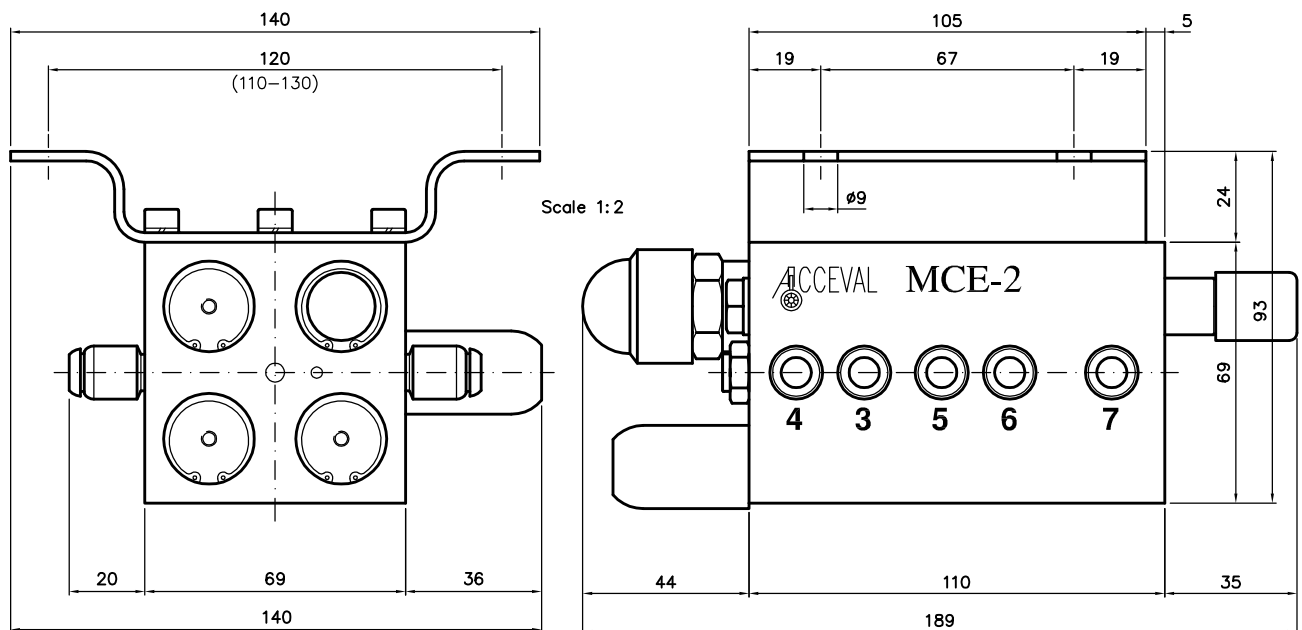
Full Automatic

# ACCEVAL MCE-2

FULL AUTOMATIC LIFT AXLE CONTROL VALVE  
(Automatic Drop and Lifting)



Nr. 390-0582-96 FBK/B

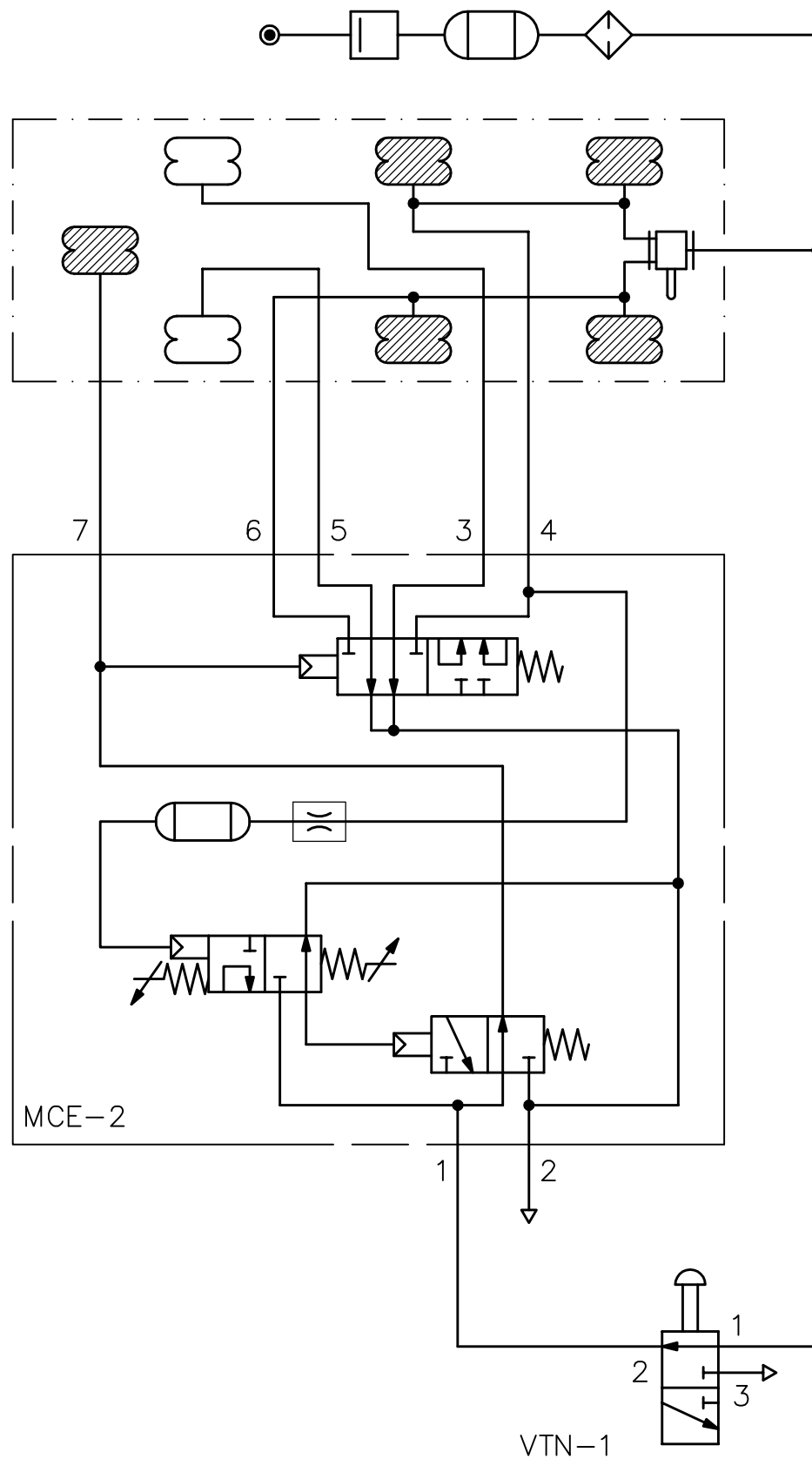


## SPECIFICATIONS

- \* Full automatic lift axle control valve for double suspension circuit.
- \* Automatic Drop and Lifting.
- \* Manual Drop by means of an optional 3/2 push-pull valve (Ref.: VTN-1)
- \* Fluid to use: Filtered air.
- \* Max. working pressure: 14 bar.
- \* Temperature range: From  $-35^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .
- \* Automatic drop pressure range:
  - From 2.5 bar to 5.8 bar.
- \* Hysteresis range:
  - From 1.2 bar to 2.6 bar.
  - (Differential between drop and lifting pressures)
- \* Standard fittings:
  - Push-in fittings for 8 mm tube.
- \* Pneumatic Scheme and Piping: See separate document.
- \* Options:
  - Straight fittings for 10 mm tube.
  - Straight fittings for 3/8" tube.
  - Automotive straight fittings for 8 mm tube.
  - Steerable elbow fittings for 8 mm tube.
  - Pressure check tapping.
  - Anti-vacuum connection in main exhaust.

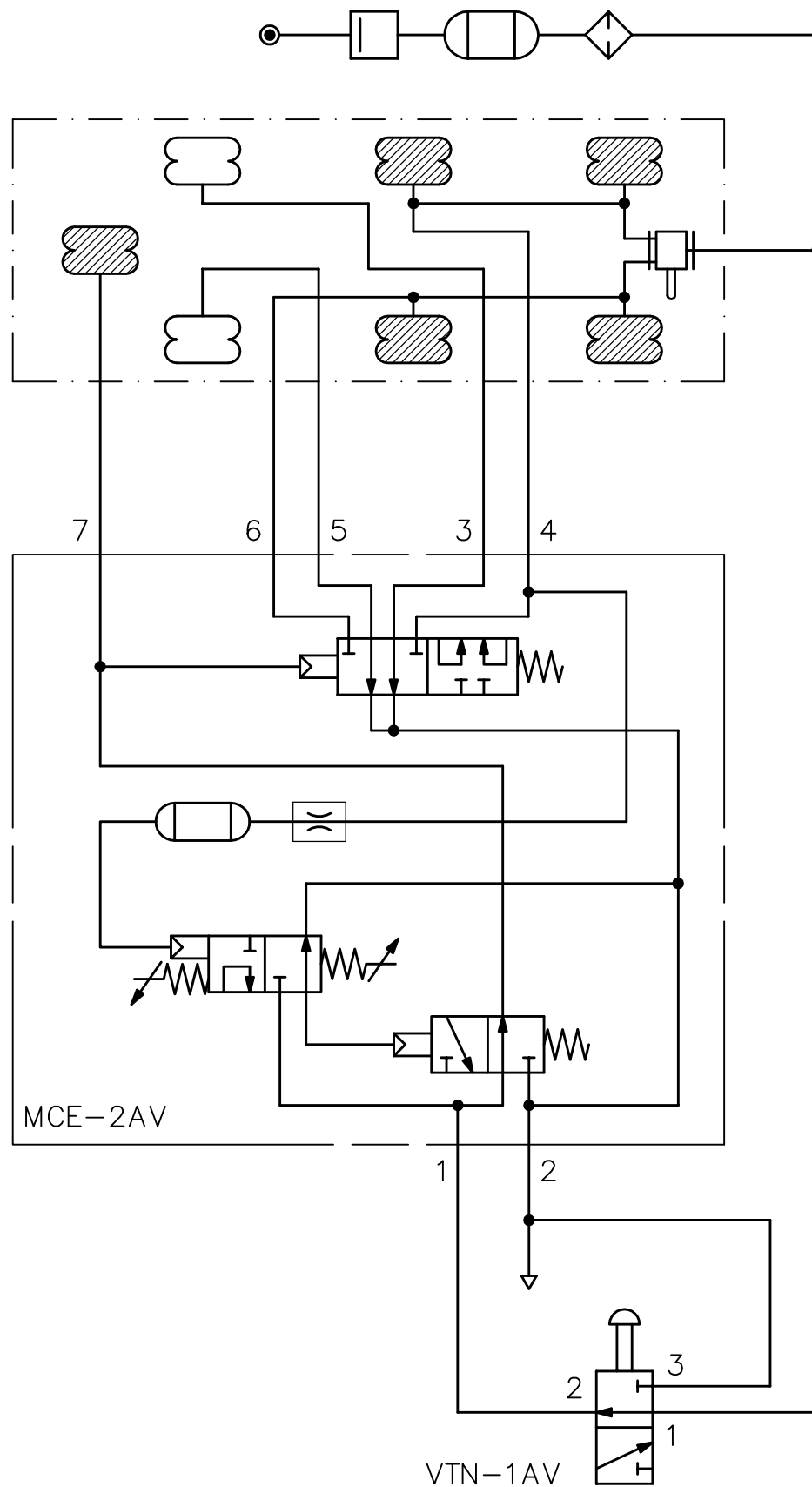
# ACCEVAL MCE-2

## PNEUMATICAL SCHEME TYPE I (STANDARD)



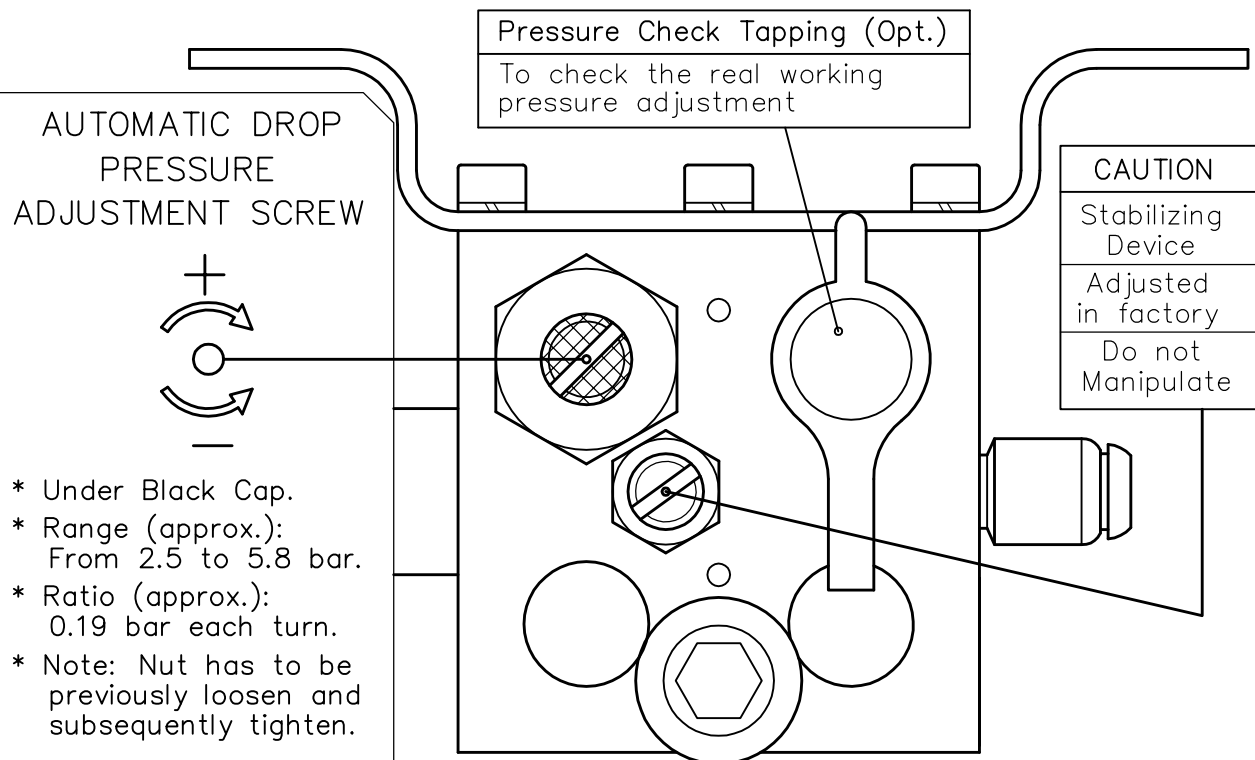
# ACCEVAL MCE-2

PNEUMATICAL SCHEME TYPE II  
(WITH ANTI-VACUUM CONNECTION)

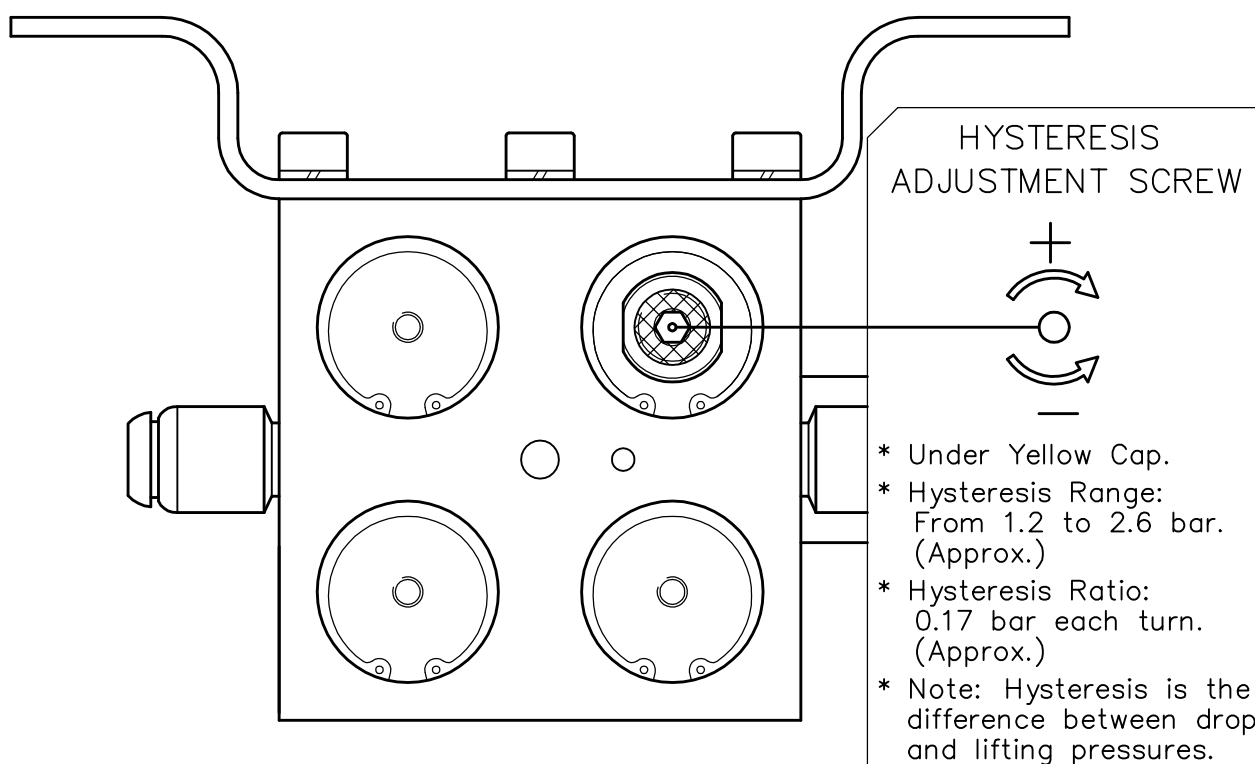


# ACCEVAL MCE-2 ADJUSTMENT SCREWS

## AUTOMATIC DROP PRESSURE



## AUTOMATIC LIFTING PRESSURE (HYSTERESIS ADJ.)



## ACCEVAL MCE-2

### PRACTICAL SETTING VALUES

Automatic drop and lifting pressures of MCE-2 valves have to be adjusted according to specific characteristics of the used suspension.

Customers can order MCE-2 valves with the exactly settings, according to load/pressure graph of the used suspension, or they can use a reduced group of practical settings to cover all the different cases, in a functional and safe way (Note: Each case has to be previously calculated and validated).

For MCE-2 valves and vehicles with only one lift axle, we can get it with four different setting values, corresponding to the following four order codes:

#### A. MCE2-3217

3 AXLES VEHICLE / 360 MM SUSP. BELLOWS

- \* Automatic Drop Pressure: 3.2 Bar
- \* Automatic Lifting Pressure: 1.7 Bar

#### B. MCE2-4526

3 AXLES VEHICLE / 300 MM SUSP. BELLOWS

- \* Automatic Drop Pressure: 4.5 Bar
- \* Automatic Lifting Pressure: 2.6 Bar

#### C. MCE2-3212

2 AXLES VEHICLE / 360 MM SUSP. BELLOWS

- \* Automatic Drop Pressure: 3.2 Bar
- \* Automatic Lifting Pressure: 1.2 Bar

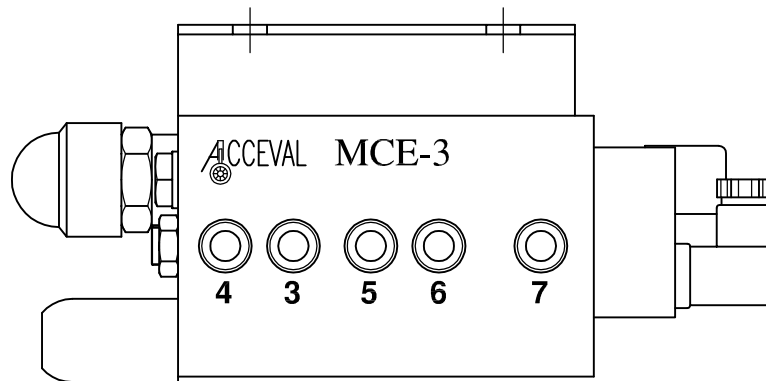
#### D. MCE2-4519

2 AXLES VEHICLE / 300 MM SUSP. BELLOWS

- \* Automatic Drop Pressure: 4.5 Bar
- \* Automatic Lifting Pressure: 1.9 Bar



# *Acceval* MCE-3



Lift Axle Control Valve  
With Automatic Drop Function

Independent of EBS System

For Suspensions with  
Double Circuit

Full Automatic

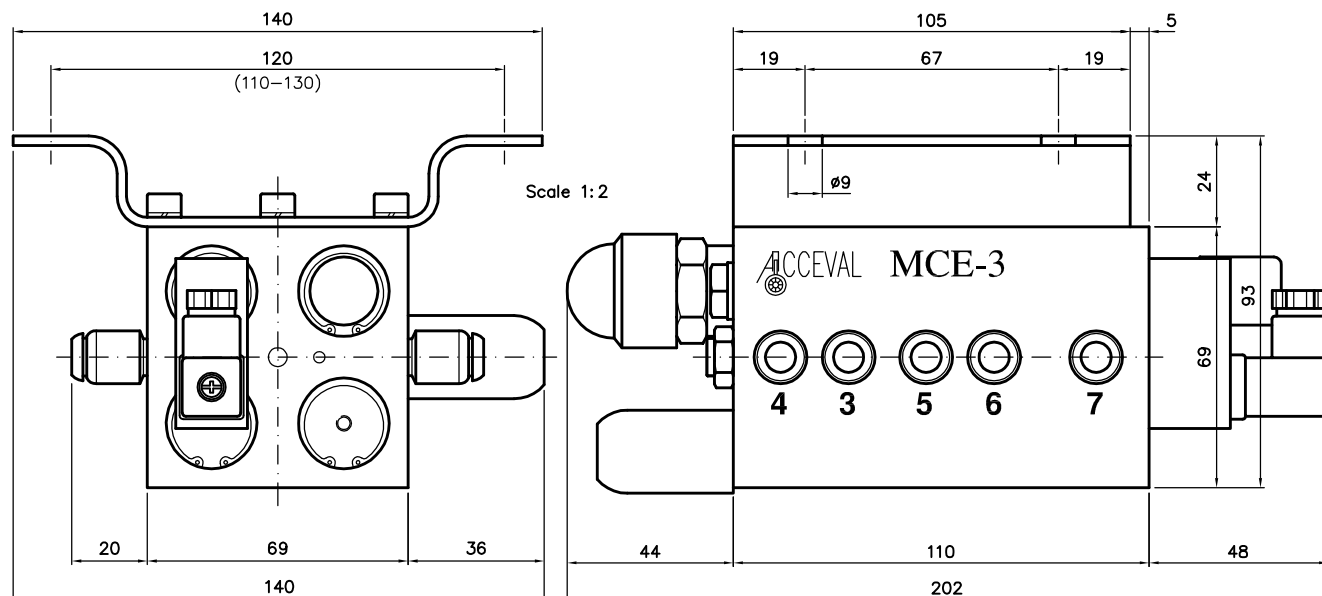
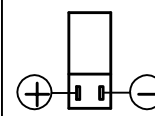
Traction Help Function

# ACCEVAL MCE-3

## FULL AUTOMATIC LIFT AXLE CONTROL VALVE WITH TRACTION HELP FUNCTION

(Automatic Drop and Lifting)

SOLENOID  
VALVE  
POLARITY

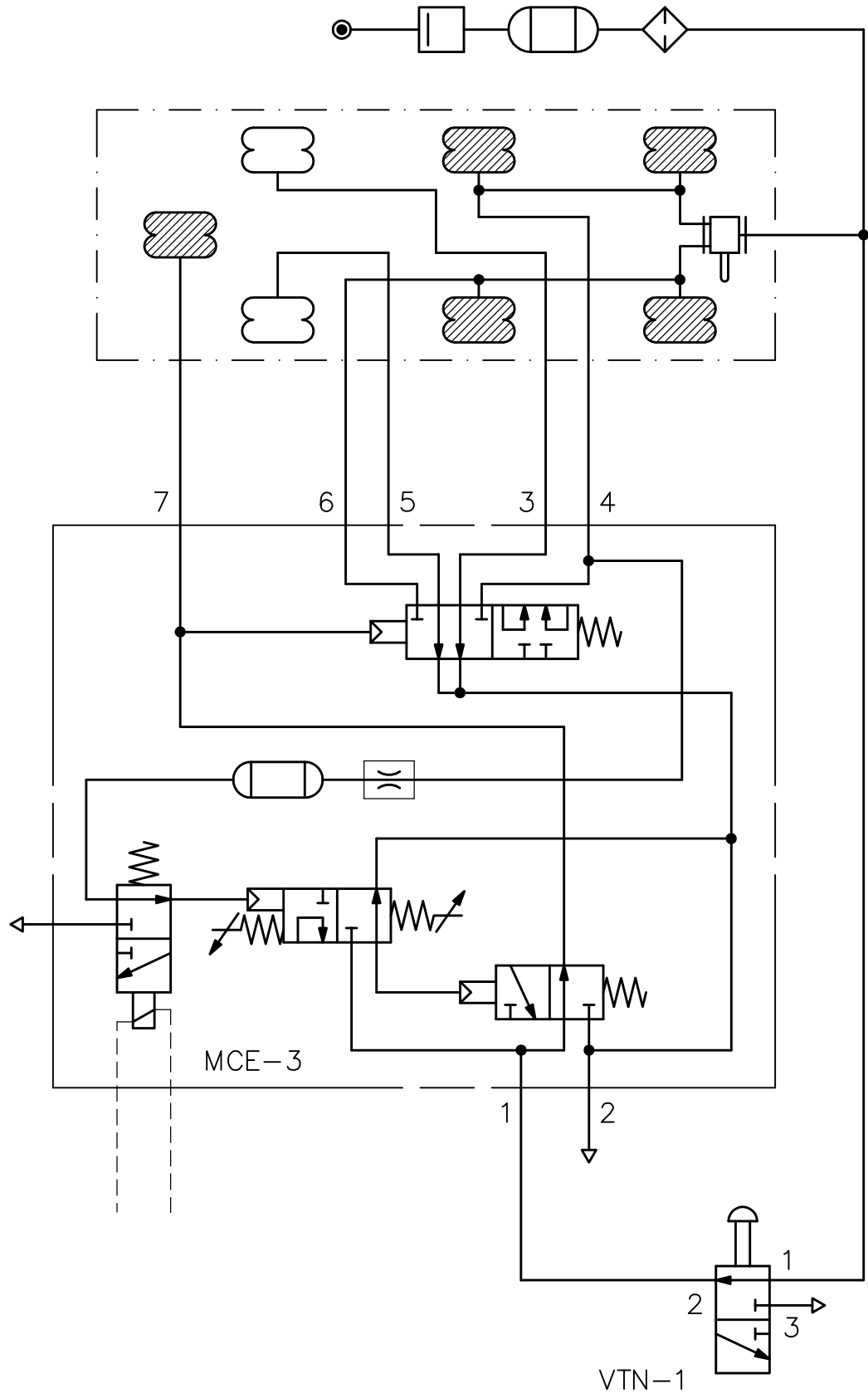


### SPECIFICATIONS

- \* Full automatic lift axle control valve for double suspension circuit.
- \* Automatic Drop and Lifting.
- \* Traction Help Function when solenoid (24VDC 2,3W) is activated (Utilization of this function has to be in accordance with laws of corresponding country).
- \* Manual Drop by means of an optional 3/2 push-pull valve (Ref.: VTN-1)
- \* Fluid to use: Filtered air.
- \* Max. working pressure: 14 bar.
- \* Temperature range: From  $-35^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .
- \* Automatic drop pressure range:
  - From 2.5 bar to 5.8 bar.
- \* Hysteresis range:
  - From 1.2 bar to 2.6 bar.
 (Differential between drop and lifting pressures)
- \* Standard fittings:
  - Push-in fittings for 8 mm tube.
- \* Pneumatic Scheme and Piping: See separate document.
- \* Options:
  - Straight fittings for 10 mm tube.
  - Straight fittings for 3/8" tube.
  - Automotive straight fittings for 8 mm tube.
  - Steerable elbow fittings for 8 mm tube.
  - Pressure check tapping.
  - Anti-vacuum connection in main exhaust.
  - 12VDC Solenoid.
  - Timer Kit for temporized control.

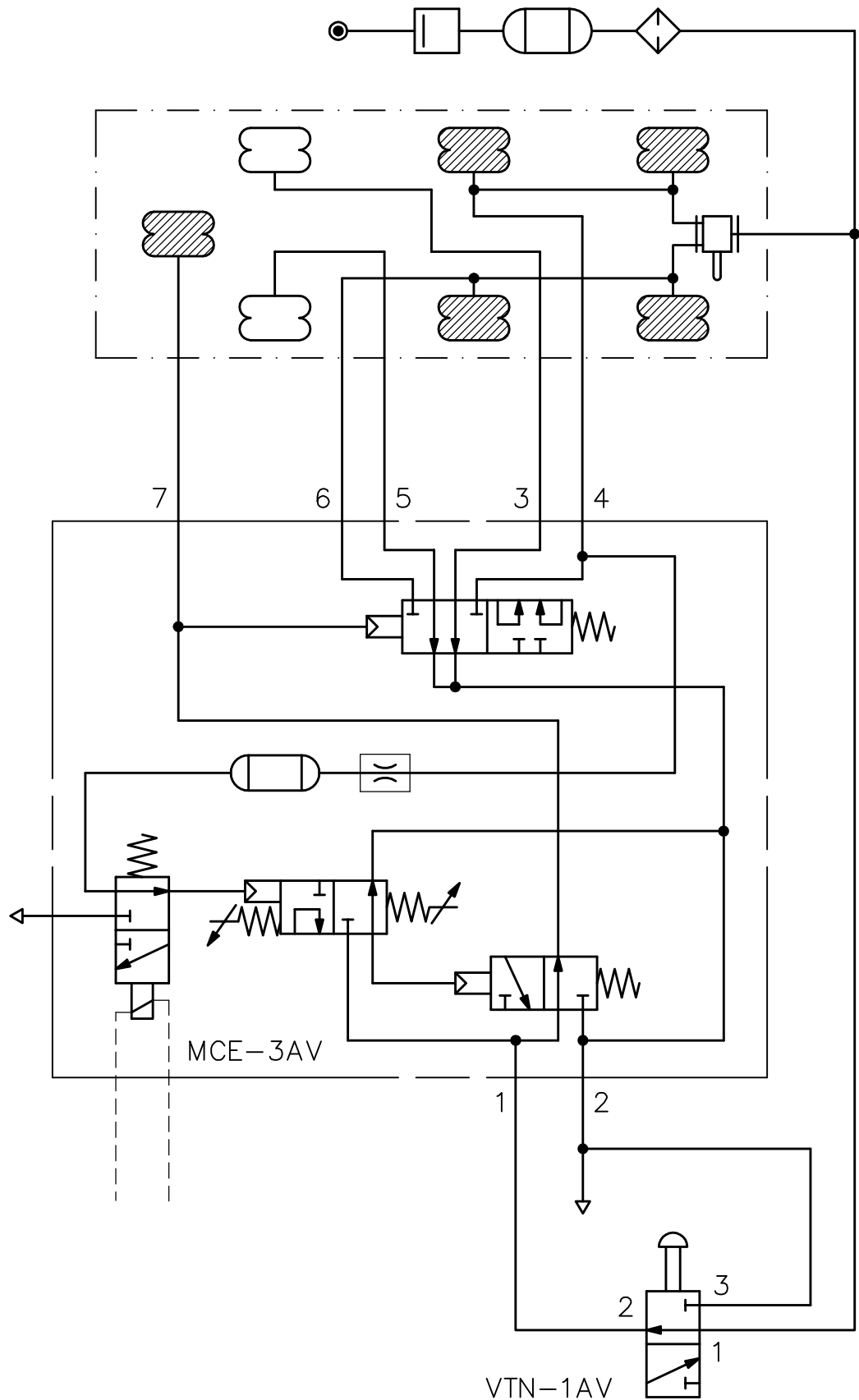
# ACCEVAL MCE-3

## PNEUMATICAL SCHEME TYPE I (STANDARD)



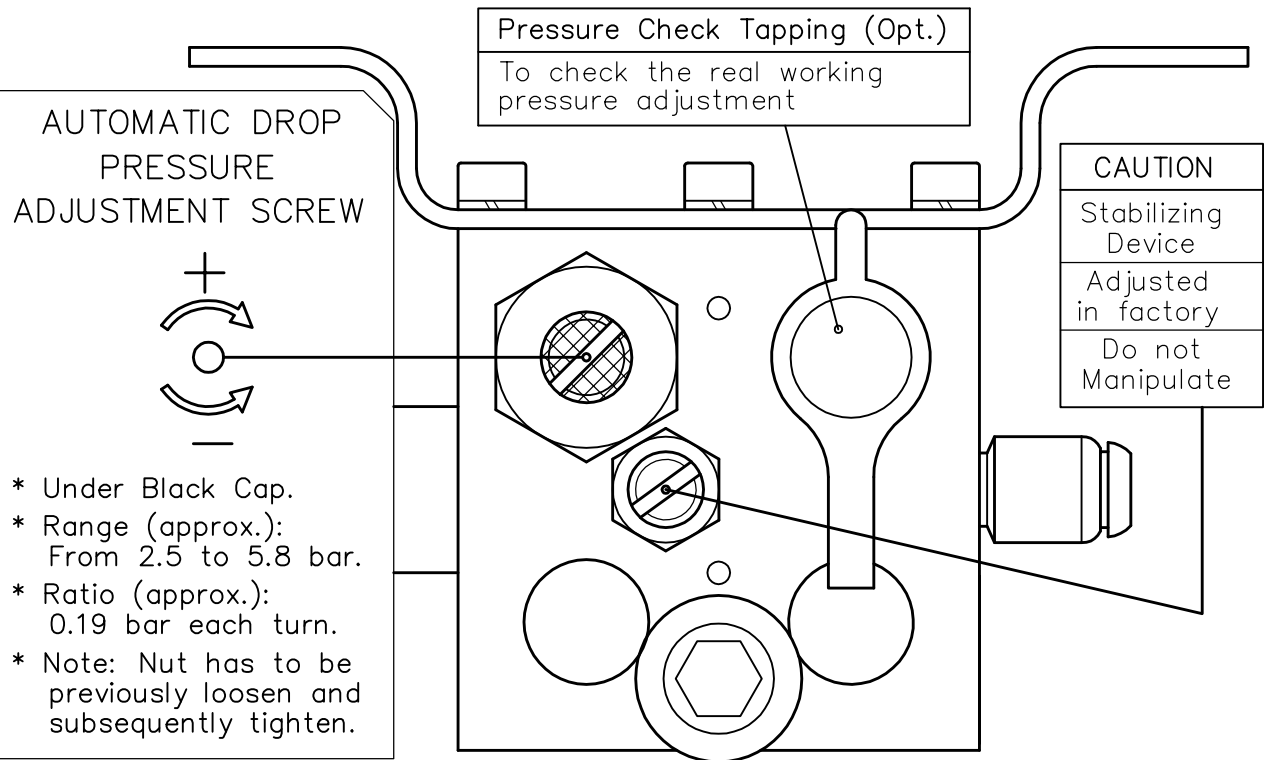
# ACCEVAL MCE-3

PNEUMATICAL SCHEME TYPE II  
(WITH ANTI-VACUUM CONNECTION)

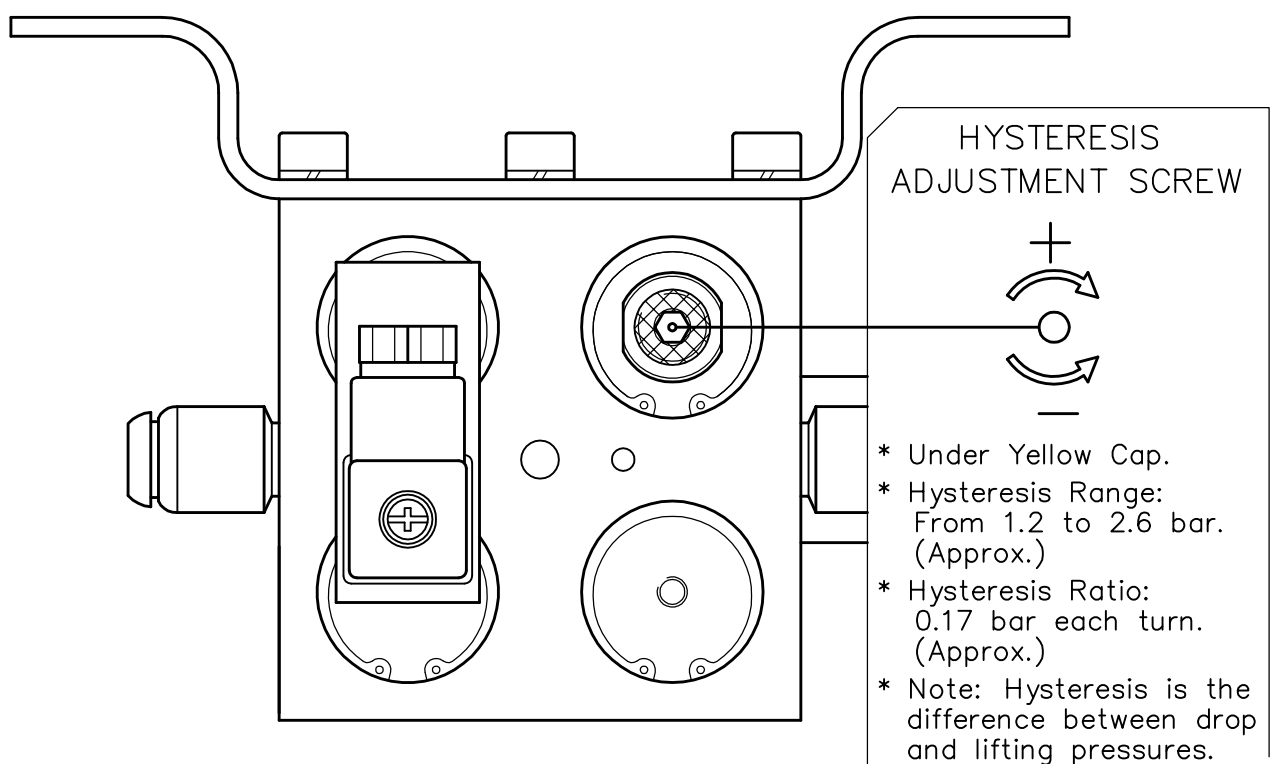


# ACCEVAL MCE-3 ADJUSTMENT SCREWS

## AUTOMATIC DROP PRESSURE



## AUTOMATIC LIFTING PRESSURE (HYSTERESIS ADJ.)



# ACCEVAL MCE-3

## PRACTICAL SETTING VALUES

Automatic drop and lifting pressures of MCE-3 valves have to be adjusted according to specific characteristics of the used suspension.

Customers can order MCE-3 valves with the exactly settings, according to load/pressure graph of the used suspension, or they can use a reduced group of practical settings to cover all the different cases, in a functional and safe way (Note: Each case has to be previously calculated and validated).

For MCE-3 valves and vehicles with only one lift axle, we can get it with four different setting values, corresponding to the following four order codes:

### A. MCE3-3217

3 AXLES VEHICLE / 360 MM SUSP. BELLOWS

- \* Automatic Drop Pressure: 3.2 Bar
- \* Automatic Lifting Pressure: 1.7 Bar

### B. MCE3-4526

3 AXLES VEHICLE / 300 MM SUSP. BELLOWS

- \* Automatic Drop Pressure: 4.5 Bar
- \* Automatic Lifting Pressure: 2.6 Bar

### C. MCE3-3212

2 AXLES VEHICLE / 360 MM SUSP. BELLOWS

- \* Automatic Drop Pressure: 3.2 Bar
- \* Automatic Lifting Pressure: 1.2 Bar

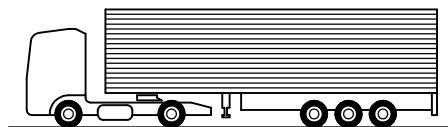
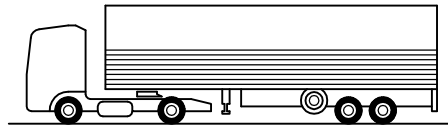
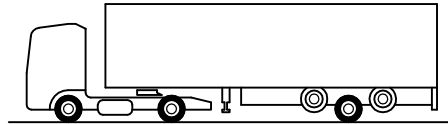
### D. MCE3-4519

2 AXLES VEHICLE / 300 MM SUSP. BELLOWS

- \* Automatic Drop Pressure: 4.5 Bar
- \* Automatic Lifting Pressure: 1.9 Bar

# Control of Two Lift Axles

*Full Automatic and Sequential*



# ACCEVAL MCE-2

## AUTOMATIC AND SEQUENTIAL CONTROL SYSTEM FOR TWO LIFT AXLES WITH TWO MCE-2 VALVES

- \* Using two MCE-2 valves is possible the perfect automatic and sequential control of two lift axles into the same vehicle, keeping on the ground only the necessary number of axles depending on the load over the vehicle.
- \* To get the correct system working and the programmed sequence, it is necessary to realize some specific connections between both valves, as we can see on the attached schemes.
- \* According to drop first the rear axle or the front axle, we can see the reversion of these connections.
- \* Adjustment of automatic lifting pressure has to be different for this two valves into the same vehicle:

### I) VEHICLE WITH 360 MM BELLOWS:

- + VALVE "A": MCE2-3217
- + VALVE "B": MCE2-3212

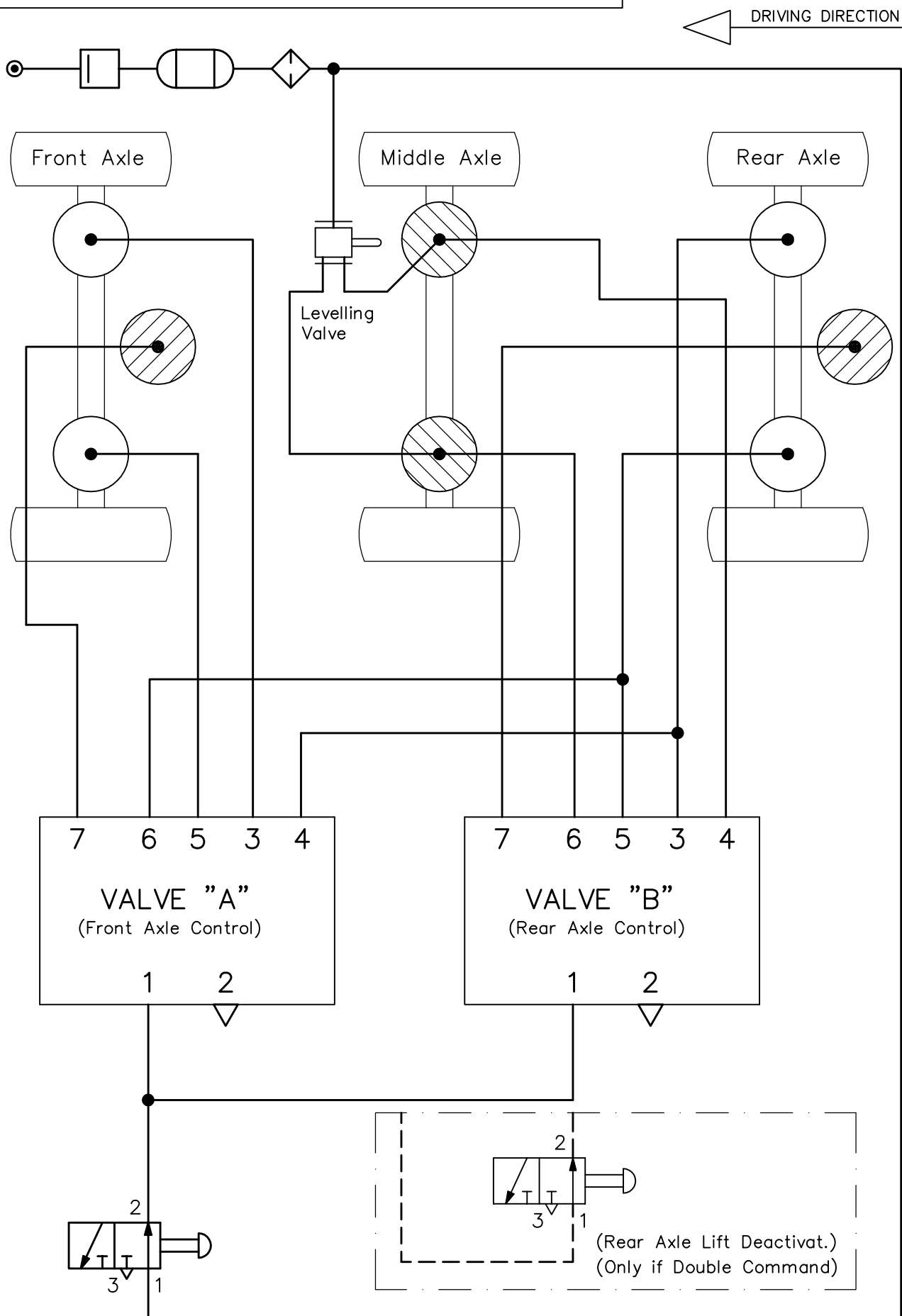
### II) VEHICLE WITH 300 MM BELLOWS:

- + VALVE "A": MCE2-4526
- + VALVE "B": MCE2-4519

- \* When we use double command to deactivate the lift axle system, we have to realize too the specific connection between two deactivation valves, as we can see on the corresponding attached schemes.
- \* We use VTN-1 valves to get the manual deactivation of lift axle system on the attached schemes. We can replace VTN-1 valves with VEB-2 solenoid valves to get the electrical deactivation from the cab.



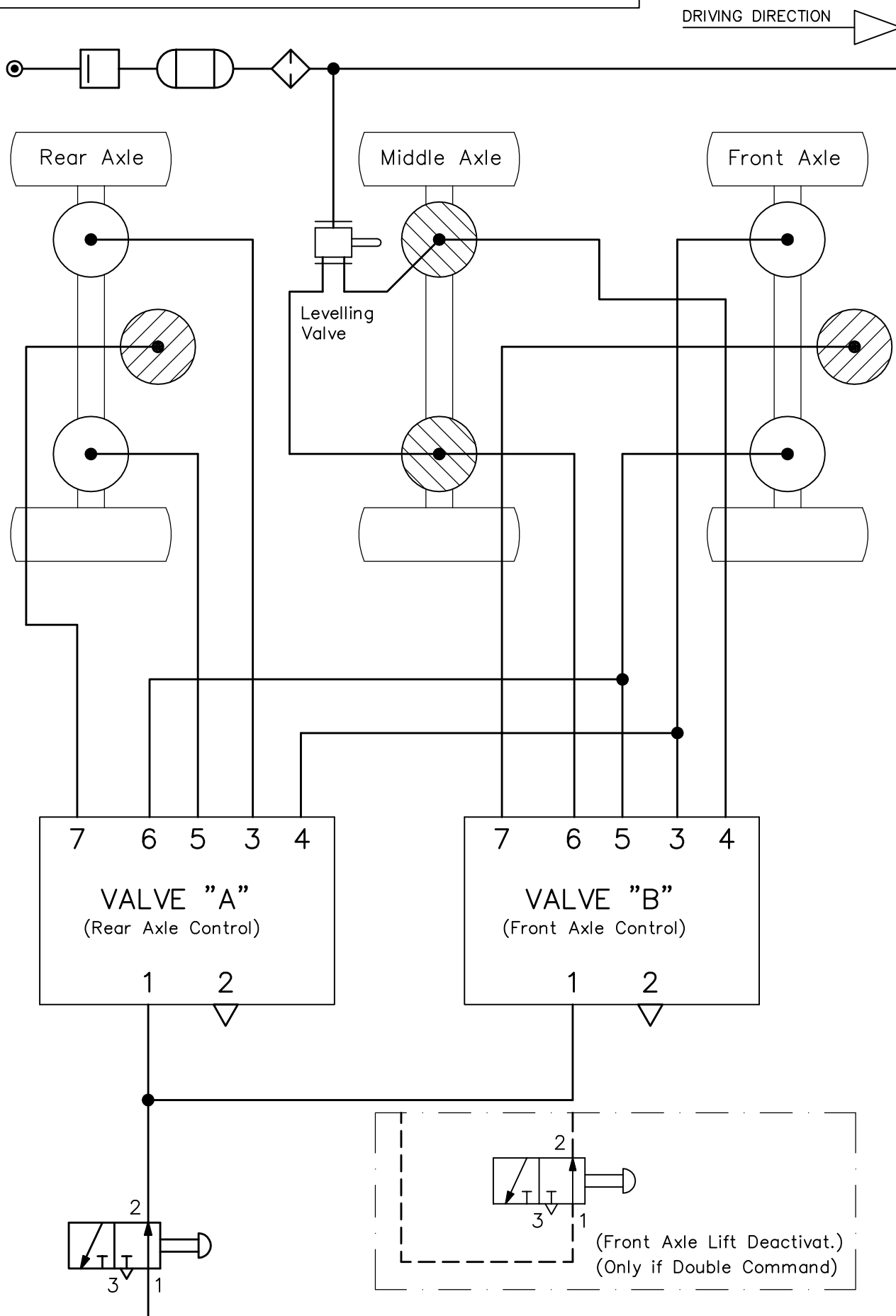
# CONTROL OF TWO LIFT AXLES SCHEME TO DROP FIRST THE REAR AXLE



(Both Axle Lift Deactivation)

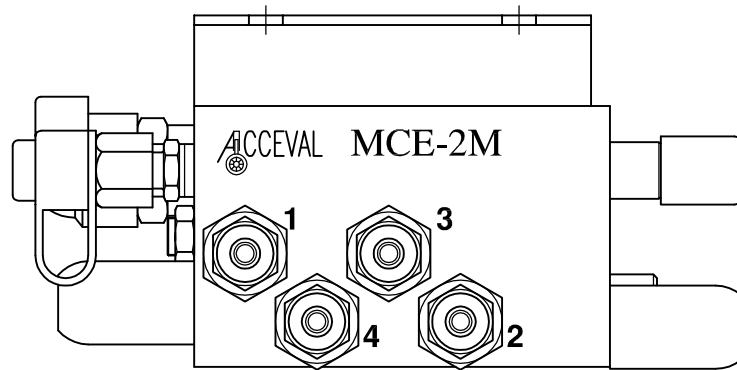
# CONTROL OF TWO LIFT AXLES

## SCHEME TO DROP FIRST THE FRONT AXLE



(Both Axle Lift Deactivation)

# *Acceval* MCE-2M



Lift Axle Control Valve  
With Automatic Drop Function

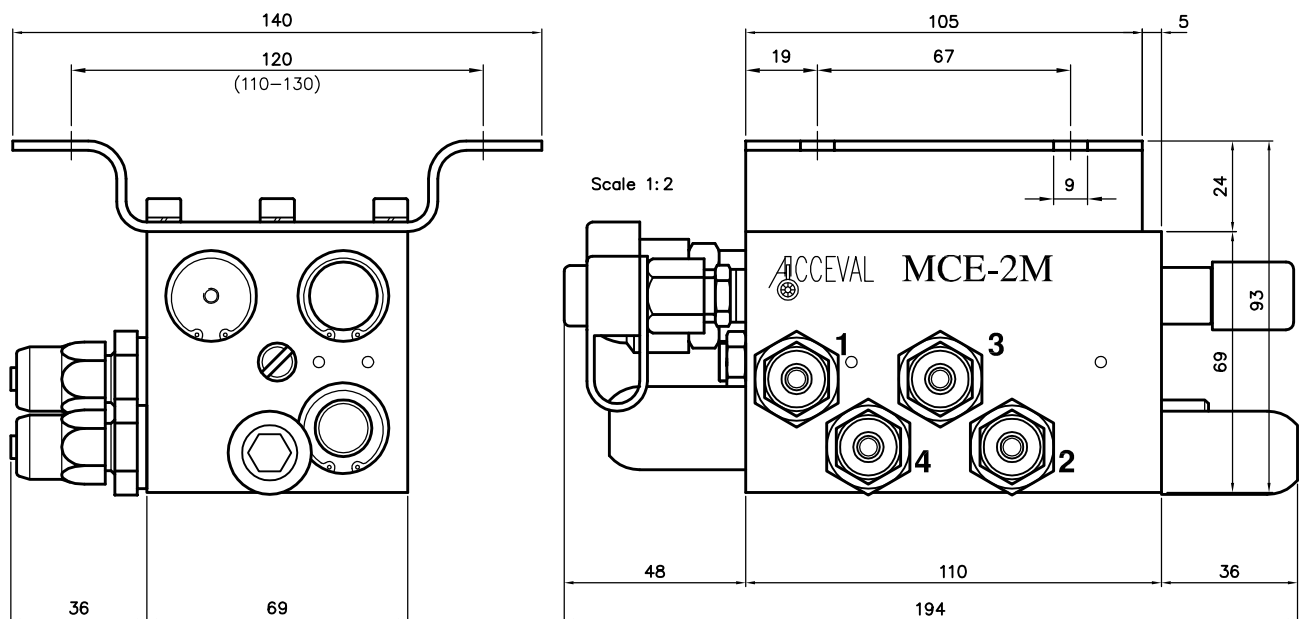
Independent of EBS System

For Suspensions with  
Single Circuit

Full Automatic

# ACCEVAL MCE-2M

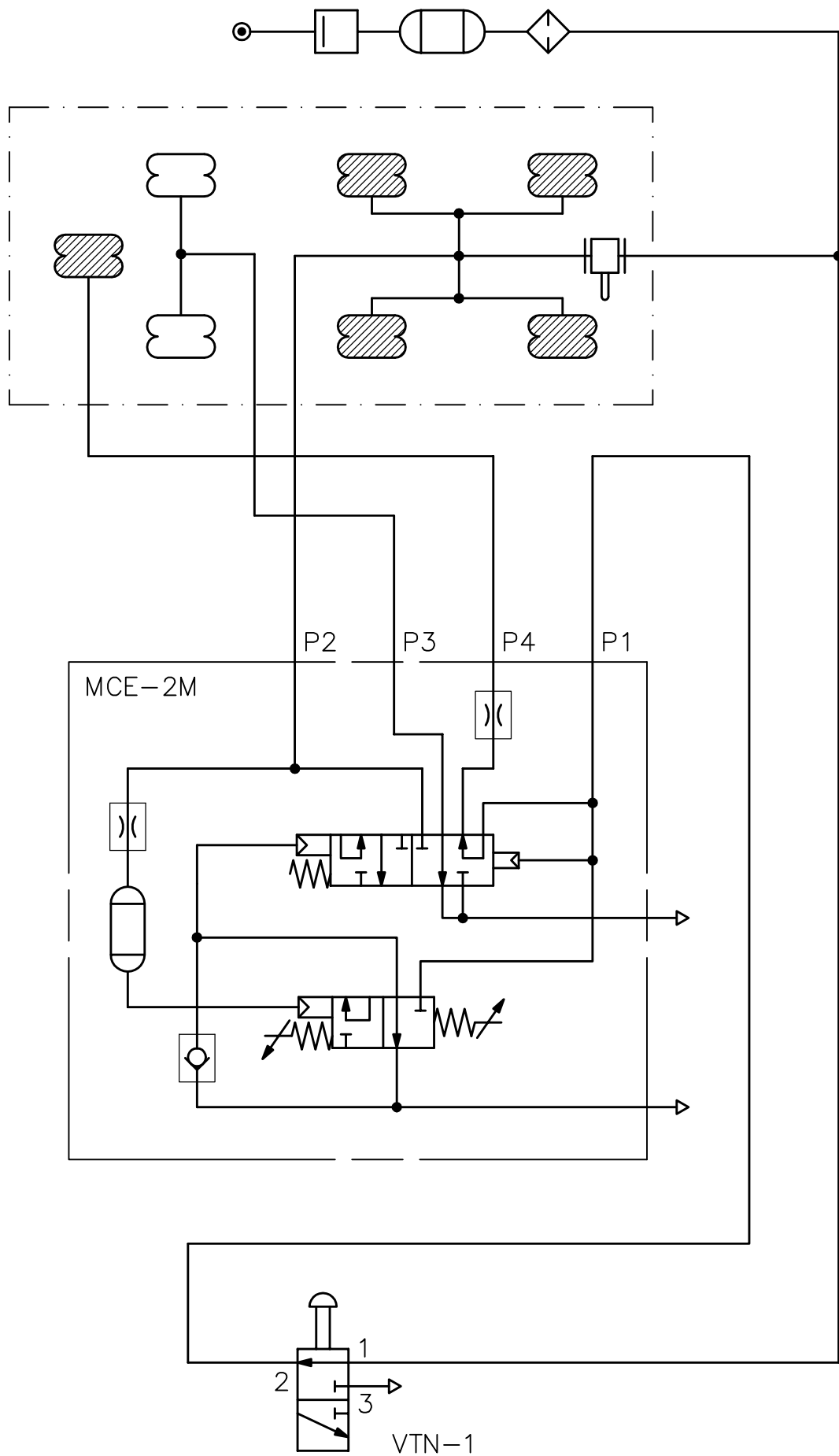
FULL AUTOMATIC LIFT AXLE CONTROL VALVE  
FOR SINGLE SUSPENSION CIRCUIT



## SPECIFICATIONS

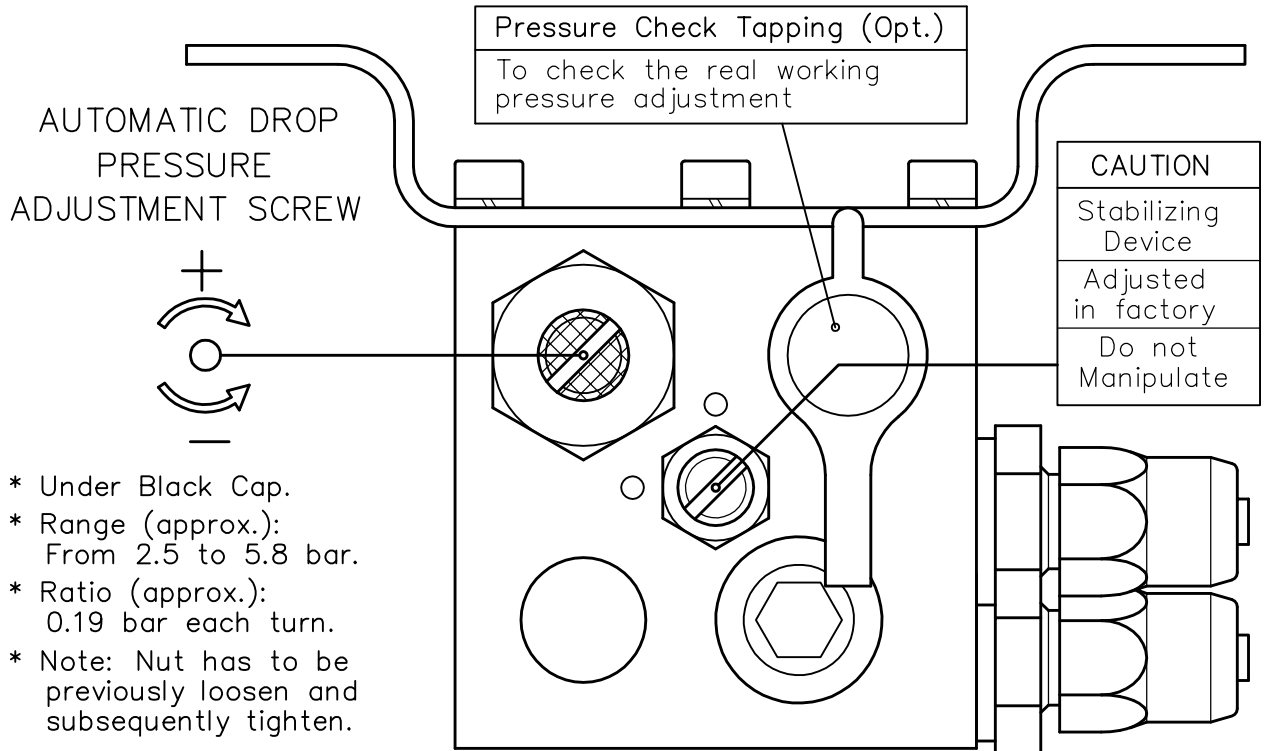
- \* Full automatic lift axle control valve for single suspension circuit.
- \* Automatic Drop and Lifting.
- \* Manual Drop by means of an optional 3/2 push-pull valve (Ref.: VTN-1)
- \* Fluid to use: Filtered air.
- \* Max. working pressure: 14 bar.
- \* Temperature range: From  $-35^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .
- \* Automatic drop pressure range:
  - From 2.5 bar to 5.8 bar.
- \* Hysteresis range:
  - From 1.2 bar to 2.6 bar.
  - (Differential between drop and lifting pressures)
- \* Standard fittings:
  - Automotive push-in fittings for 8 mm tube.
- \* Pneumatic Scheme and Piping: See separate document.
- \* Options:
  - Other type of Fittings.
  - Without Fittings (M16x1,5).
  - Pressure check tapping.

# ACCEVAL MCE-2M PNEUMATIC SCHEME

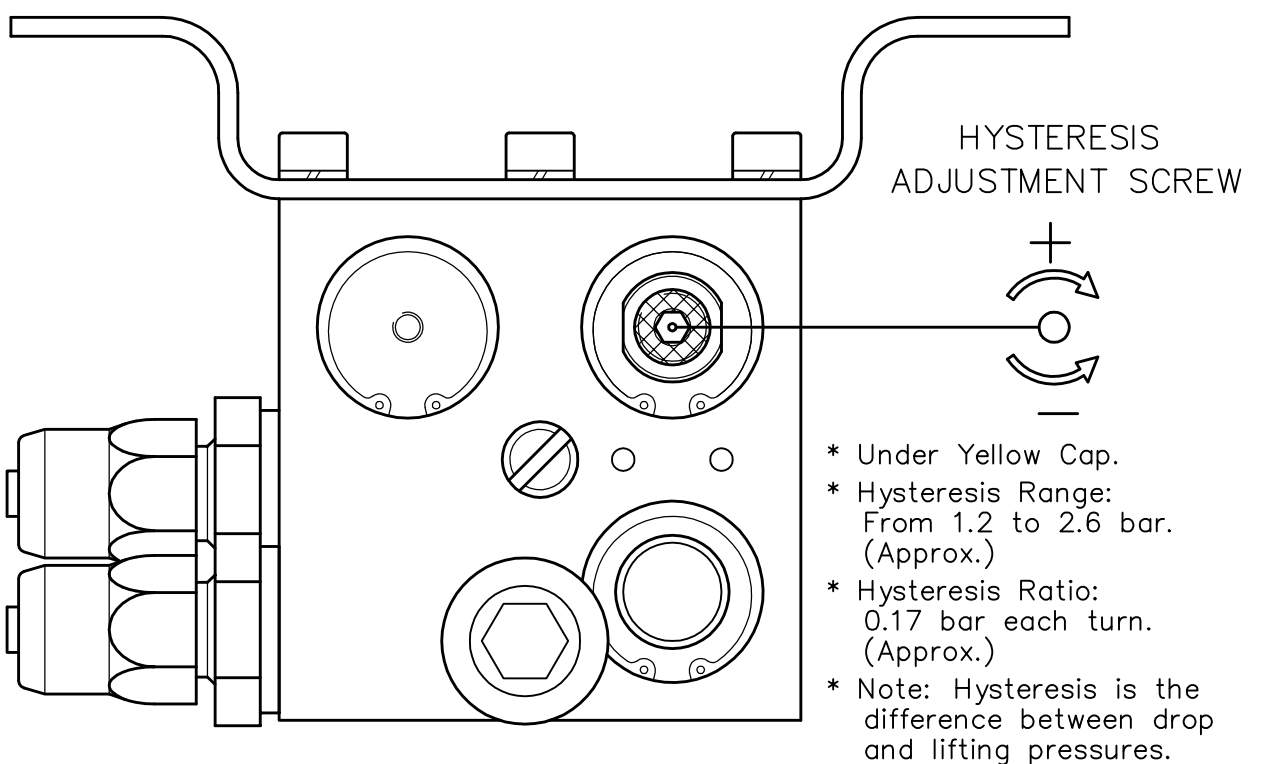


# ACCEVAL MCE-2M ADJUSTMENT SCREWS

## AUTOMATIC DROP PRESSURE



## AUTOMATIC LIFTING PRESSURE (HYSTERESIS ADJ.)



# ACCEVAL MCE–2M

## PRACTICAL SETTING VALUES

Automatic drop and lifting pressures of MCE–2M valves have to be adjusted according to specific characteristics of the used suspension.

Customers can order MCE–2M valves with the exactly settings, according to load/pressure graph of the used suspension, or they can use a reduced group of practical settings to cover all the different cases, in a functional and safe way (Note: Each case has to be previously calculated and validated).

For MCE–2M valves and vehicles with only one lift axle, we can get it with four different setting values, corresponding to the following four order codes:

### A. MCE2M–3217

3 AXLES VEHICLE / 360 MM SUSP. BELLOWS

- \* Automatic Drop Pressure: 3.2 Bar
- \* Automatic Lifting Pressure: 1.7 Bar

### B. MCE2M–4526

3 AXLES VEHICLE / 300 MM SUSP. BELLOWS

- \* Automatic Drop Pressure: 4.5 Bar
- \* Automatic Lifting Pressure: 2.6 Bar

### C. MCE2M–3212

2 AXLES VEHICLE / 360 MM SUSP. BELLOWS

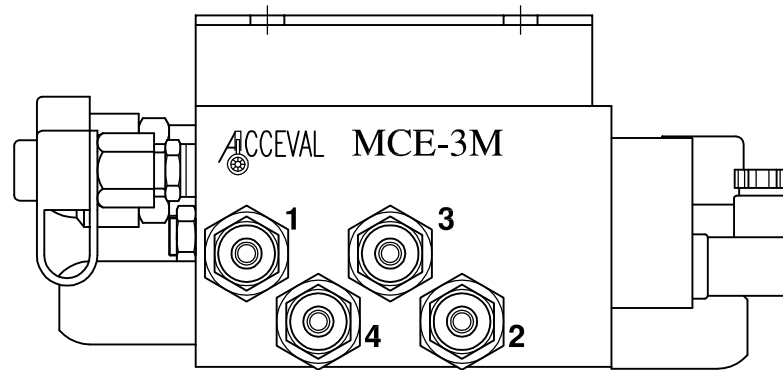
- \* Automatic Drop Pressure: 3.2 Bar
- \* Automatic Lifting Pressure: 1.2 Bar

### D. MCE2M–4519

2 AXLES VEHICLE / 300 MM SUSP. BELLOWS

- \* Automatic Drop Pressure: 4.5 Bar
- \* Automatic Lifting Pressure: 1.9 Bar

# *Acceval* MCE-3M



Lift Axle Control Valve  
With Automatic Drop Function

Independent of EBS System

For Suspensions with  
Single Circuit

Full Automatic

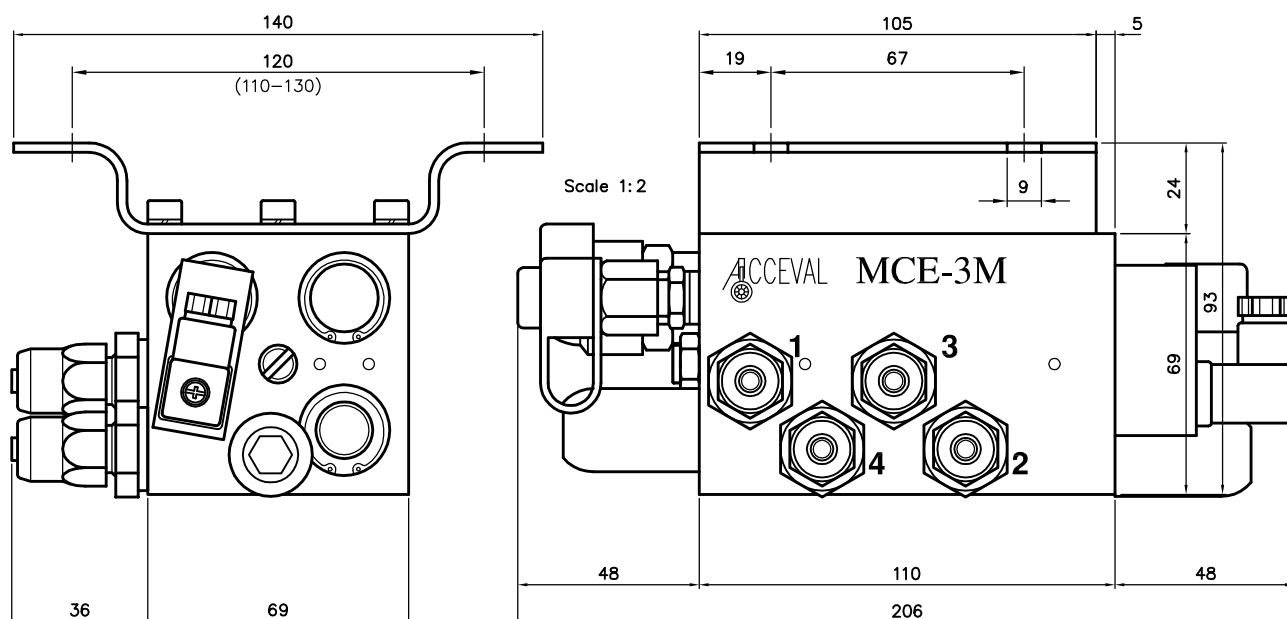
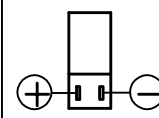
Traction Help Function



# ACCEVAL MCE-3M

FULL AUTOMATIC LIFT AXLE CONTROL VALVE  
FOR SINGLE SUSPENSION CIRCUIT  
WITH TRACTION HELP FUNCTION

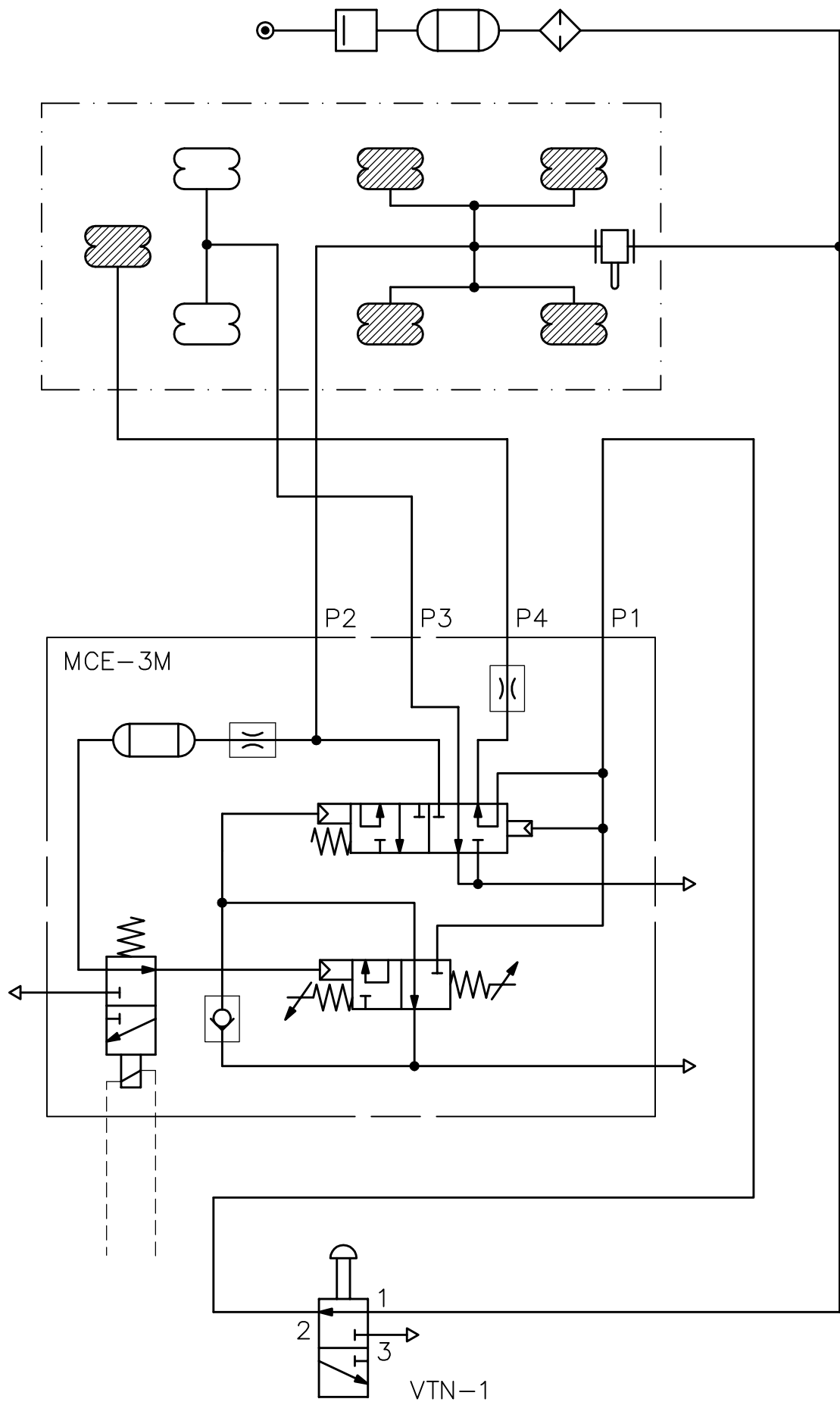
SOLENOID  
VALVE  
POLARITY



## SPECIFICATIONS

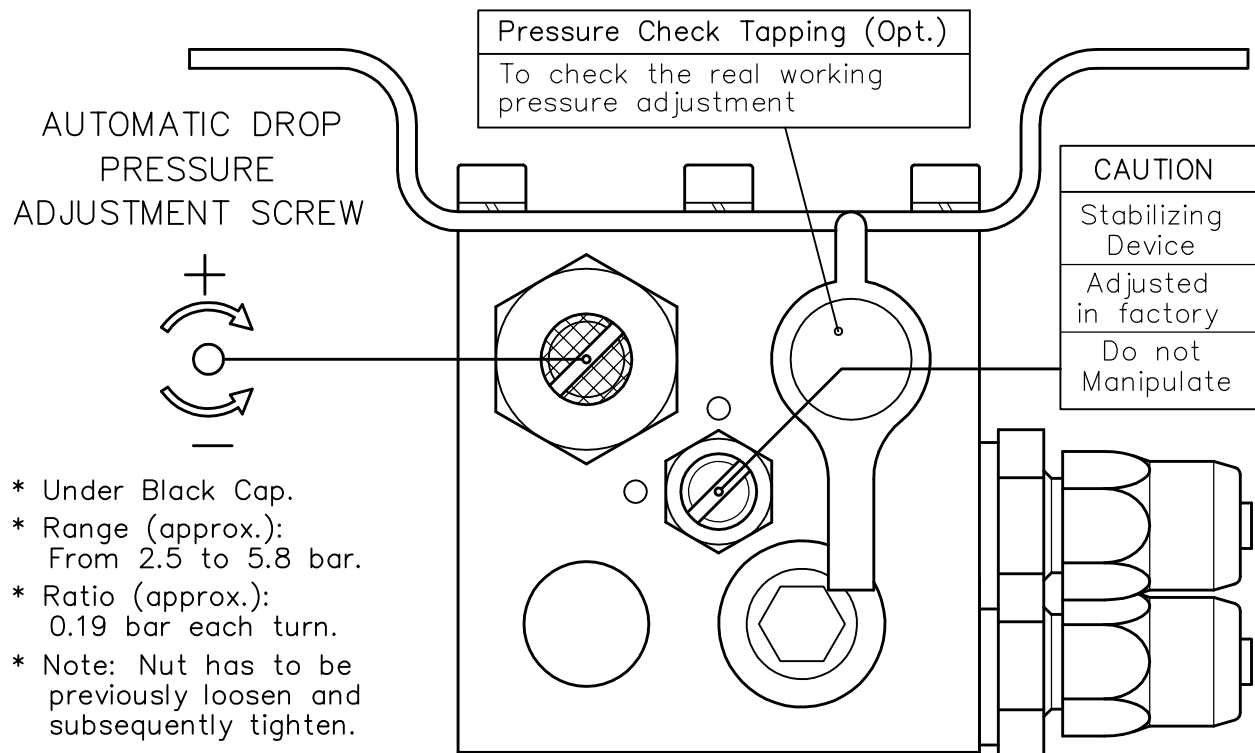
- \* Full automatic lift axle control valve for single suspension circuit.
- \* Automatic Drop and Lifting.
- \* Traction Help Function when solenoid (24VDC 2,3W) is activated (Utilization of this function has to be in accordance with laws of corresponding country).
- \* Manual Drop by means of an optional 3/2 push-pull valve (Ref.: VTN-1)
- \* Fluid to use: Filtered air.
- \* Max. working pressure: 14 bar.
- \* Temperature range: From  $-35^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .
- \* Automatic drop pressure range:
  - From 2.5 bar to 5.8 bar.
- \* Hysteresis range:
  - From 1.2 bar to 2.6 bar.
  - (Differential between drop and lifting pressures)
- \* Standard fittings:
  - Automotive push-in fittings for 8 mm tube.
- \* Pneumatic Scheme and Piping: See separate document.
- \* Options:
  - Other type of Fittings.
  - Without Fittings (M16x1,5).
  - Pressure check tapping.
  - 12VDC Solenoid.
  - Timer Kit for temporized control.

# ACCEVAL MCE-3M PNEUMATIC SCHEME

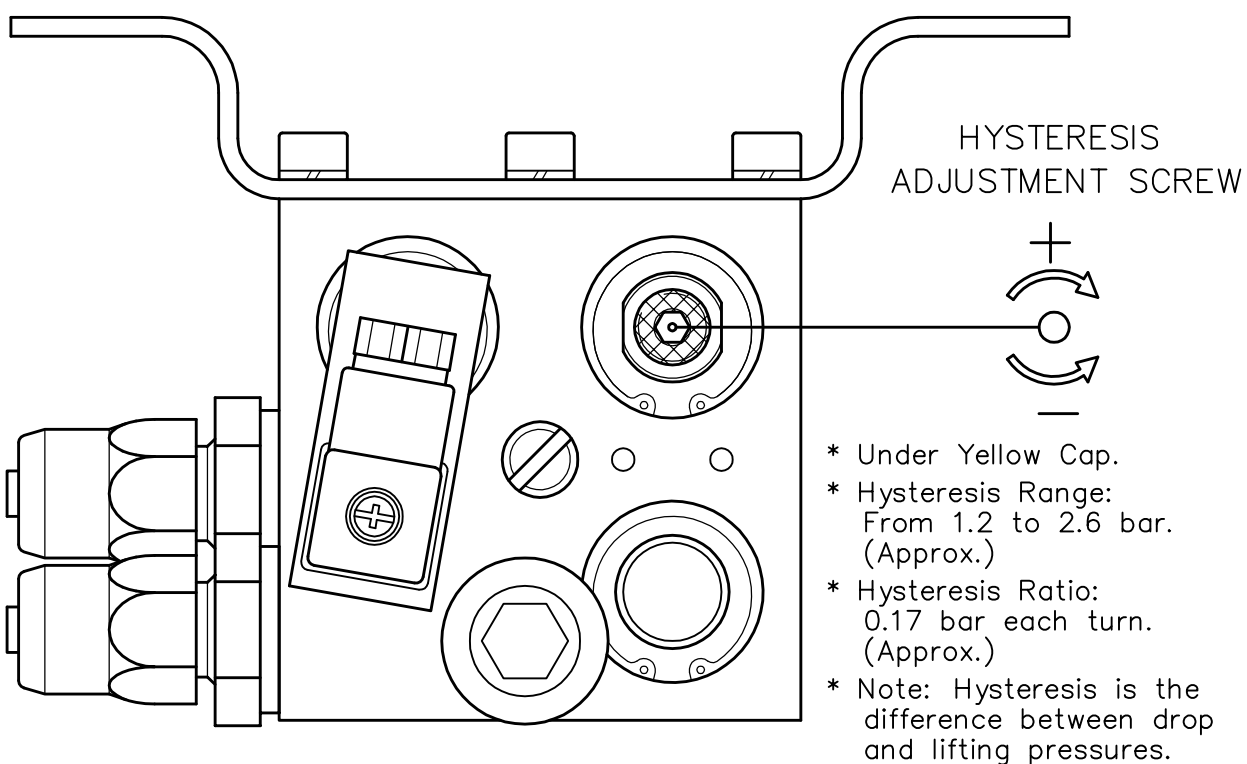


# ACCEVAL MCE-3M ADJUSTMENT SCREWS

## AUTOMATIC DROP PRESSURE



## AUTOMATIC LIFTING PRESSURE (HYSTERESIS ADJ.)



# ACCEVAL MCE–3M

## PRACTICAL SETTING VALUES

Automatic drop and lifting pressures of MCE–3M valves have to be adjusted according to specific characteristics of the used suspension.

Customers can order MCE–3M valves with the exactly settings, according to load/pressure graph of the used suspension, or they can use a reduced group of practical settings to cover all the different cases, in a functional and safe way (Note: Each case has to be previously calculated and validated).

For MCE–3M valves and vehicles with only one lift axle, we can get it with four different setting values, corresponding to the following four order codes:

### A. MCE3M–3217

3 AXLES VEHICLE / 360 MM SUSP. BELLOWS

- \* Automatic Drop Pressure: 3.2 Bar
- \* Automatic Lifting Pressure: 1.7 Bar

### B. MCE3M–4526

3 AXLES VEHICLE / 300 MM SUSP. BELLOWS

- \* Automatic Drop Pressure: 4.5 Bar
- \* Automatic Lifting Pressure: 2.6 Bar

### C. MCE3M–3212

2 AXLES VEHICLE / 360 MM SUSP. BELLOWS

- \* Automatic Drop Pressure: 3.2 Bar
- \* Automatic Lifting Pressure: 1.2 Bar

### D. MCE3M–4519

2 AXLES VEHICLE / 300 MM SUSP. BELLOWS

- \* Automatic Drop Pressure: 4.5 Bar
- \* Automatic Lifting Pressure: 1.9 Bar

# *Acceval*

## Pneumatic Valves For General Application On Trailers

Manually Operated Valves

Pneumatically Operated Valves

Solenoid Operated Valves

Other Valves

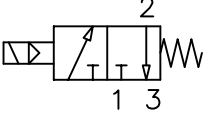
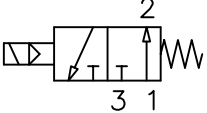
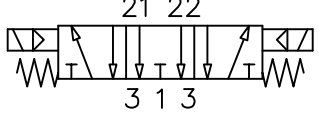
# PNEUMATIC VALVES

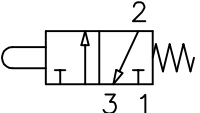
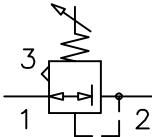
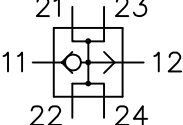
## MANUALLY OPERATED VALVES

<b>VTN-1</b>	3/2 PUSH-PULL VALVE	
<b>VTP-1</b>	3/2 PUSH-PULL VALVE + PNEUMATIC PILOT	
<b>VTP-2</b>	3/2 PUSH-PULL VALVE + PNEUMATIC PILOT	
<b>VTN-3</b>	4/2 PUSH-PULL VALVE	
<b>VTN-4</b>	4/3 PUSH-PULL VALVE (OPEN CENTERS)	
<b>VTN-5</b>	5/2 PUSH-PULL VALVE	

## PNEUMATICALLY OPERATED VALVES

<b>VPS-2</b>	3/2 PNEUMATIC OPERATED VALVE (NORMALLY CLOSED)	
<b>VPS-3</b>	3/2 PNEUMATIC OPERATED VALVE (NORMALLY OPEN)	
<b>VPD-1</b>	PNEUMATIC OPERATED VALVE FOR AXLE LIFT CONTROL R1/8" PORTS	
<b>VPD-2</b>	PNEUMATIC OPERATED VALVE FOR LIFT AXLE BRAKE CHAMBERS CONTROL (M16)	

ELECTRICALLY OPERATED VALVES		
<b>VEB-2</b>	3/2 SOLENOID OPERATED VALVE (NORMALLY CLOSED)	
<b>VEB-3</b>	3/2 SOLENOID OPERATED VALVE (NORMALLY OPEN)	
<b>VEB-6</b>	5/3 SOLENOID OPERATED VALVE (OPEN CENTERS) SOLENOID-SOLENOID	

OTHER VALVES		
<b>VSM-1</b>	3/2 MECHANICAL OPERATED VALVE (NORMALLY CLOSED) (END OF STROKE)	
<b>RPE-2</b>	PRESSURE LIMITATION VALVE FOR AXLE LIFT CIRCUIT	
<b>VFP-2</b>	CIRCUIT SELECTOR VALVE FOR PARKING BRAKE	

# *Acceval*

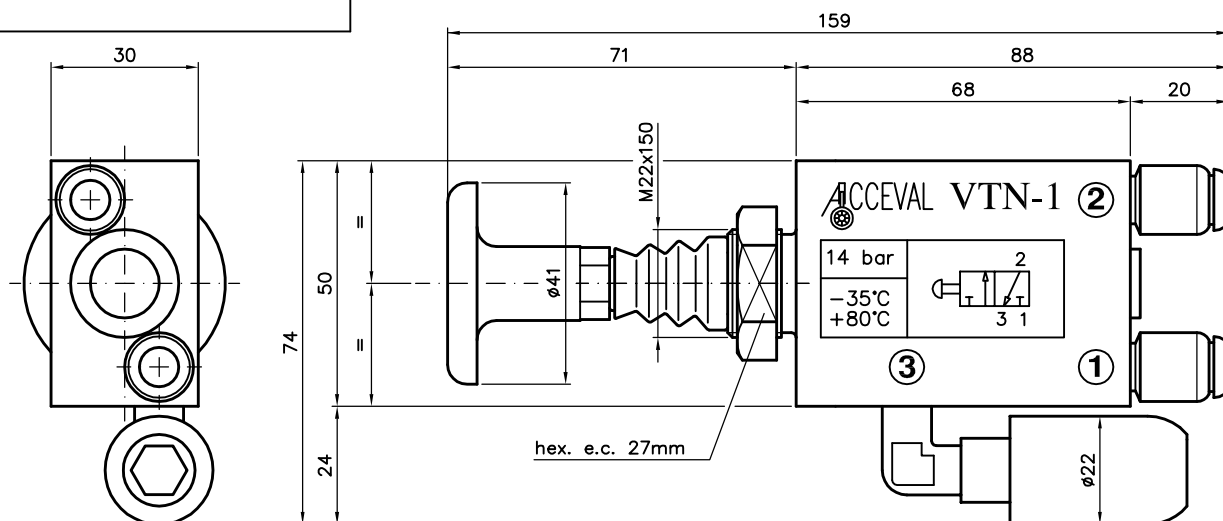
## Manually Operated Valves

VTN-1 / VTP-1 / VTP-2

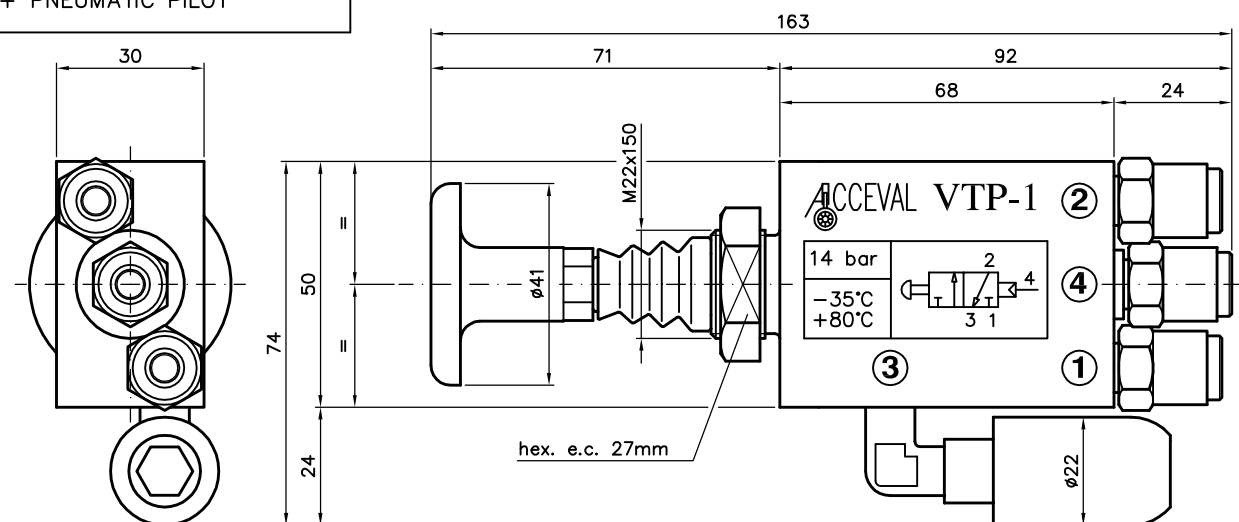
VTN-3 / VTN-4 / VTN-5



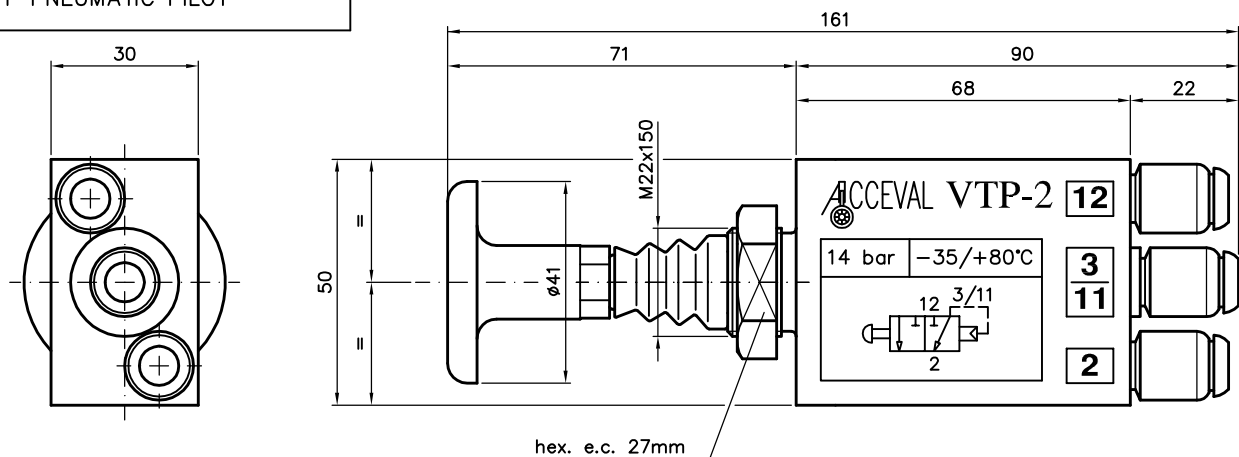
# **ACCEVAL VTN-1** 3/2 PUSH-PULL VALVE



# **ACCEVAL VTP-1** 3/2 PUSH-PULL VALVE + PNEUMATIC PILOT

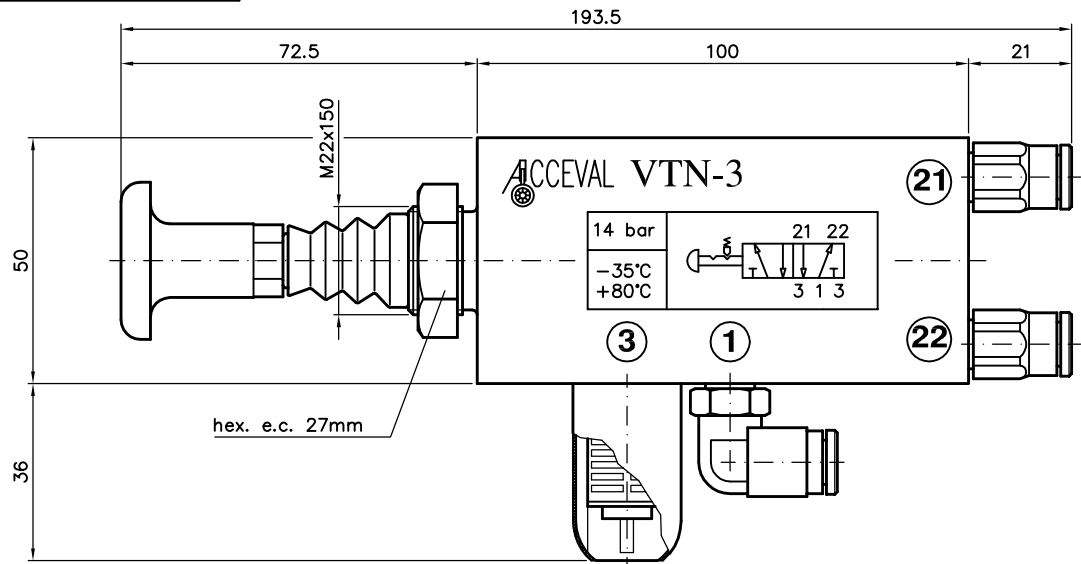


# **ACCEVAL VTP-2** 3/2 PUSH-PULL VALVE + PNEUMATIC PILOT



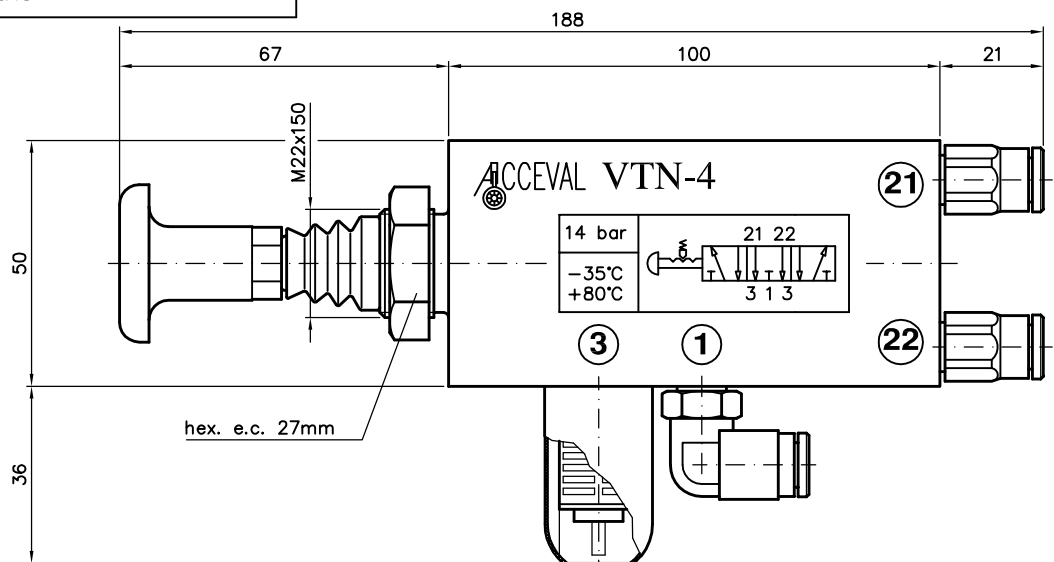
## ACCEVAL VTN-3

4/2 PUSH-PULL VALVE



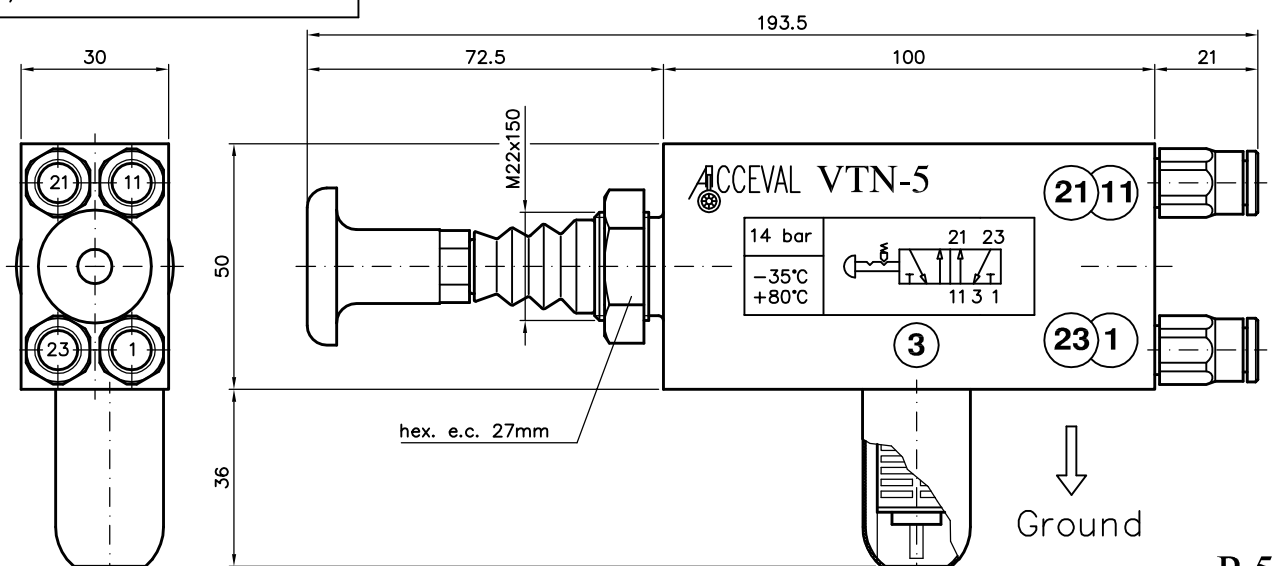
## ACCEVAL VTN-4

4/3 PUSH-PULL VALVE  
OPEN CENTERS



## ACCEVAL VTN-5

5/2 PUSH-PULL VALVE



*Acceval*

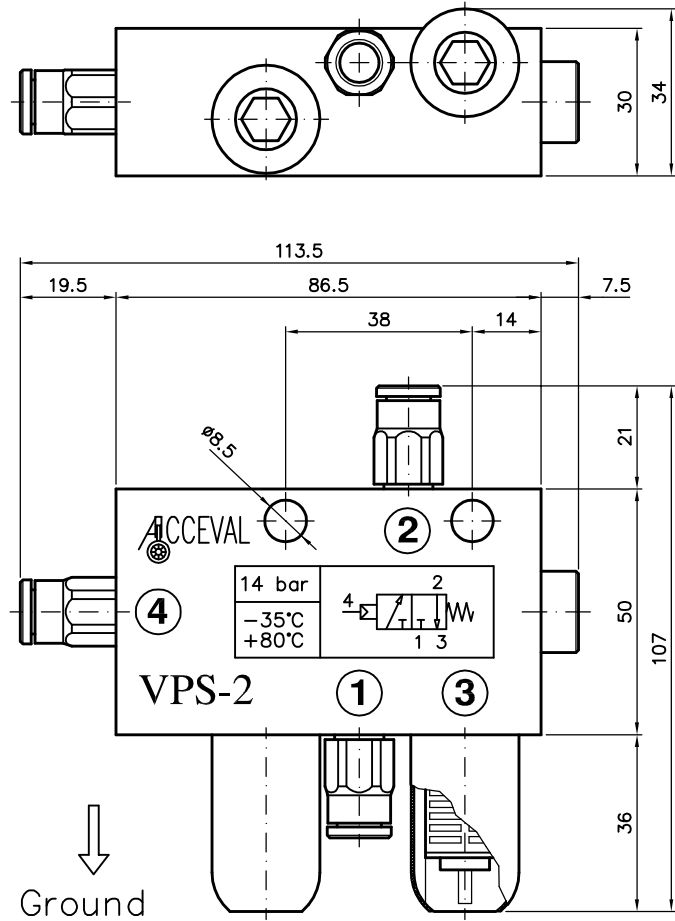
Pneumatically Operated Valves

VPS-2 / VPS-3

VPD-1 / VPD-2

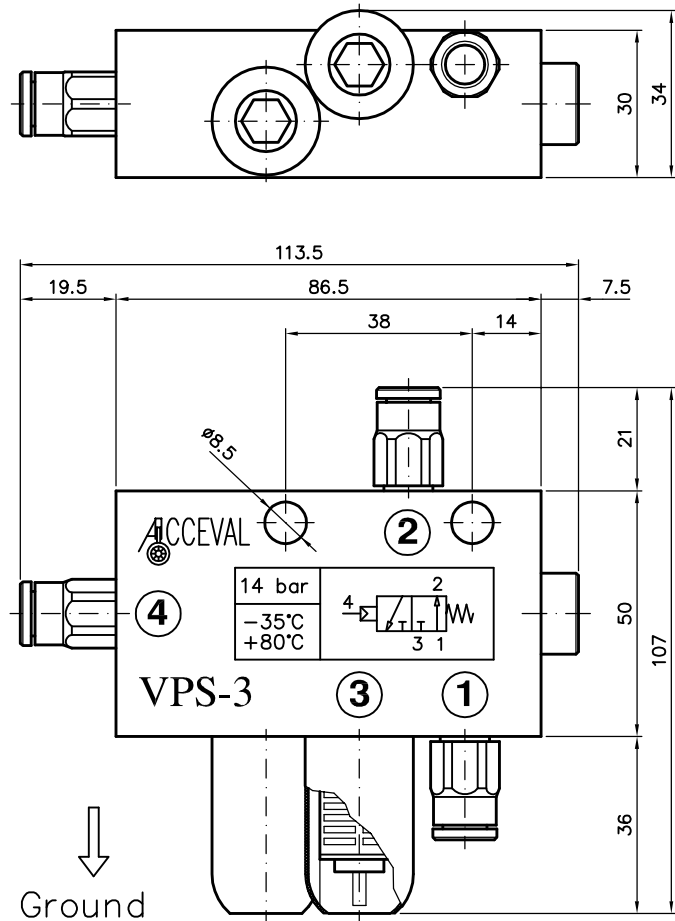
## ACCEVAL VPS-2

3/2 PNEUMATIC OPERATED VALVE  
NORMALLY CLOSED



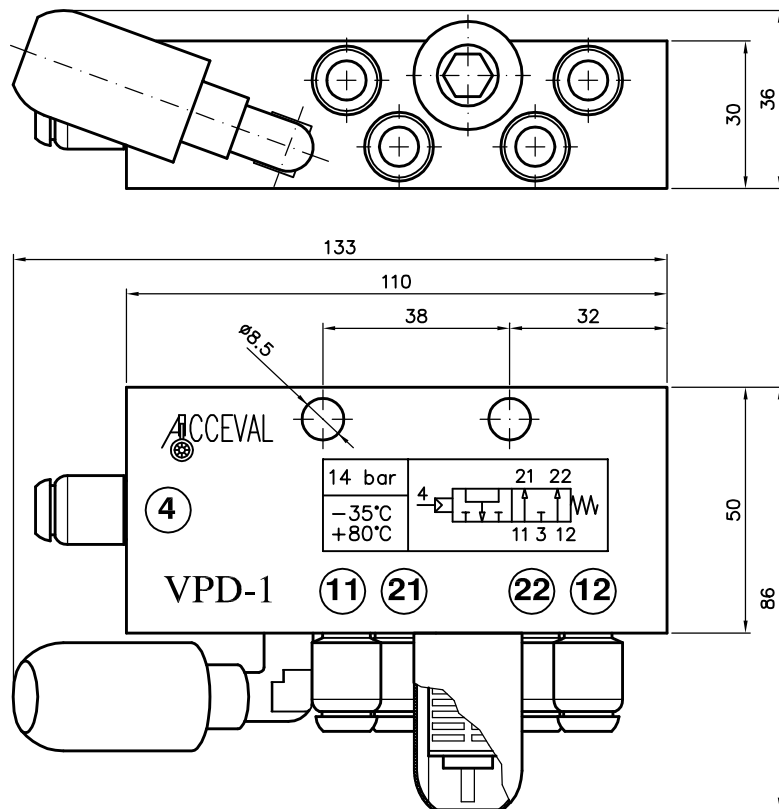
## ACCEVAL VPS-3

3/2 PNEUMATIC OPERATED VALVE  
NORMALLY OPEN



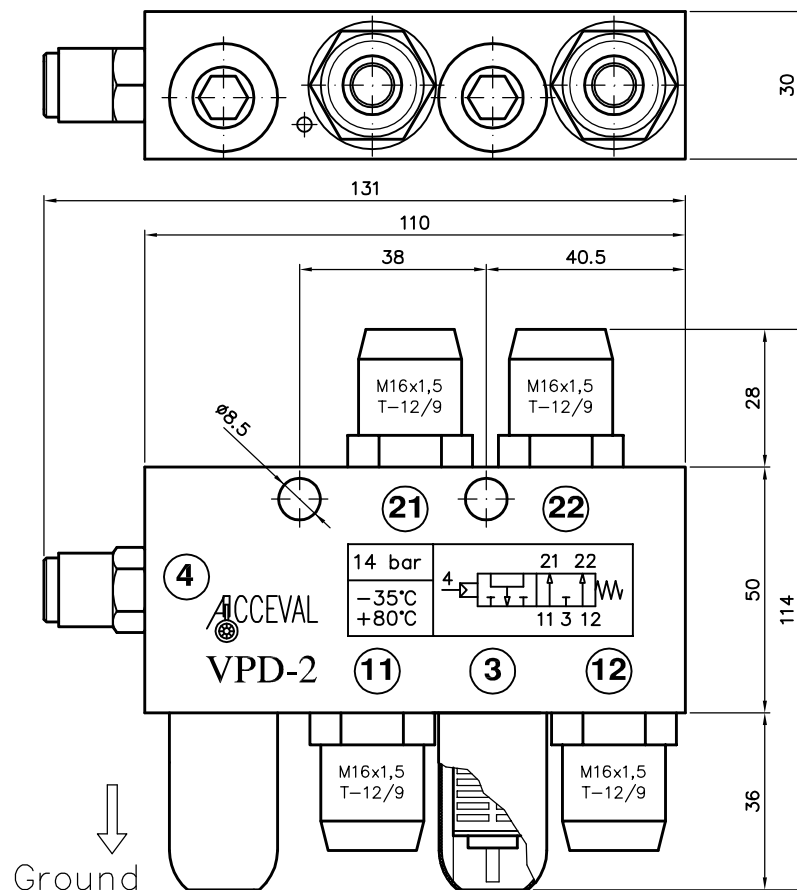
## ACCEVAL VPD-1

DOUBLE PNEUMATIC OPERATED VALVE  
FOR AXLE LIFT CONTROL (R1/8" PORTS)



## ACCEVAL VPD-2

BRAKE CHAMBERS DEACTIVATION VALVE FOR LIFT AXLE



*Acceval*

Solenoid Operated Valves

VEB-2 / VEB-3

VEB-6

## ACCEVAL VEB-2

3/2 SOLENOID OPERATED VALVE  
NORMALLY CLOSED

### WORKING SPECIFICATIONS

- \* Pneumatical scheme: see drawing.
- \* Max. working pressure: 10 bar.
- \* Safe static pressure: 15 bar.
- \* Temp. range: from  $-35^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .
- \* Electrical details: 24V DC 6W.
- \* Electrical Duty: 100%.
- \* Solenoid with industrial connector DIN43650 (IP-65).
- \* Electromagnetic compatibility (EMC) according to 89/336/EEC.
- \* Low voltage equipment (LVD) according to 73/23/EEC.
- \* Optional: Solenoid with bayonet Connector DIN72585-A1-2.1 (IP-68).

### PNEUMATICAL CONNECTIONS

#### Ports n.1 and n.2

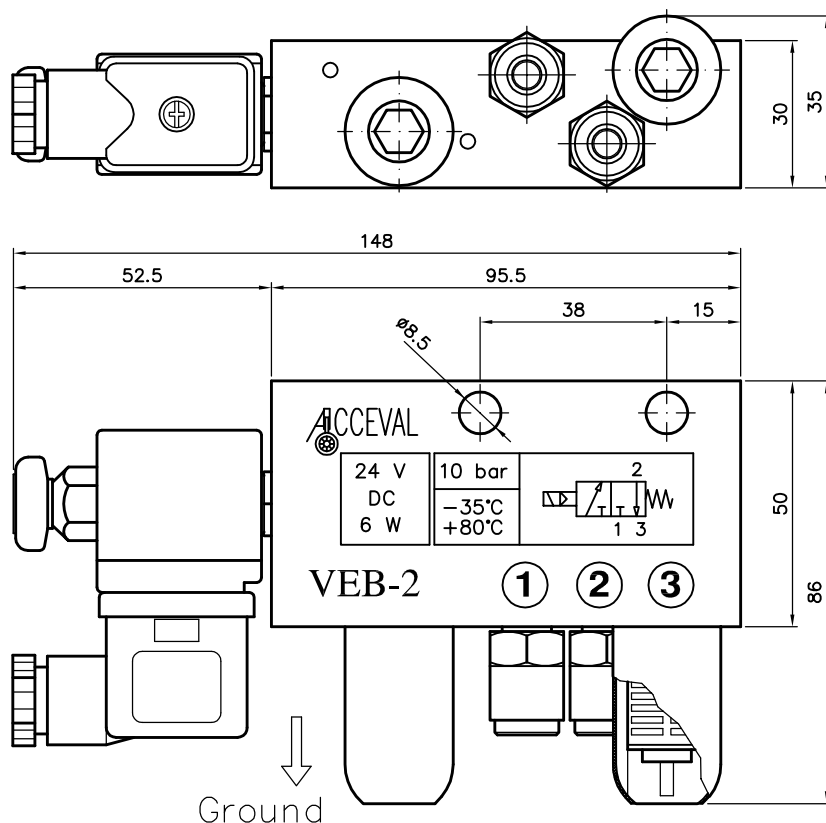
- \* Standard or automotive push-in fittings for 8 mm tube.

#### Port n.3 (Exhaust) and breathing

- \* Filter + filter cover.

#### Exhaust port of solenoid valve

- \* Rubber cup protection.



## ACCEVAL VEB-3

3/2 SOLENOID OPERATED VALVE  
NORMALLY OPEN

### WORKING SPECIFICATIONS

- \* Pneumatical scheme: see drawing.
- \* Max. working pressure: 10 bar.
- \* Safe static pressure: 15 bar.
- \* Temp. range: from  $-35^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .
- \* Electrical details: 24V DC 6W.
- \* Electrical Duty: 100%.
- \* Solenoid with industrial connector DIN43650 (IP-65).
- \* Electromagnetic compatibility (EMC) according to 89/336/EEC.
- \* Low voltage equipment (LVD) according to 73/23/EEC.
- \* Optional: Solenoid with bayonet Connector DIN72585-A1-2.1 (IP-68).

### PNEUMATICAL CONNECTIONS

#### Ports n.1 and n.2

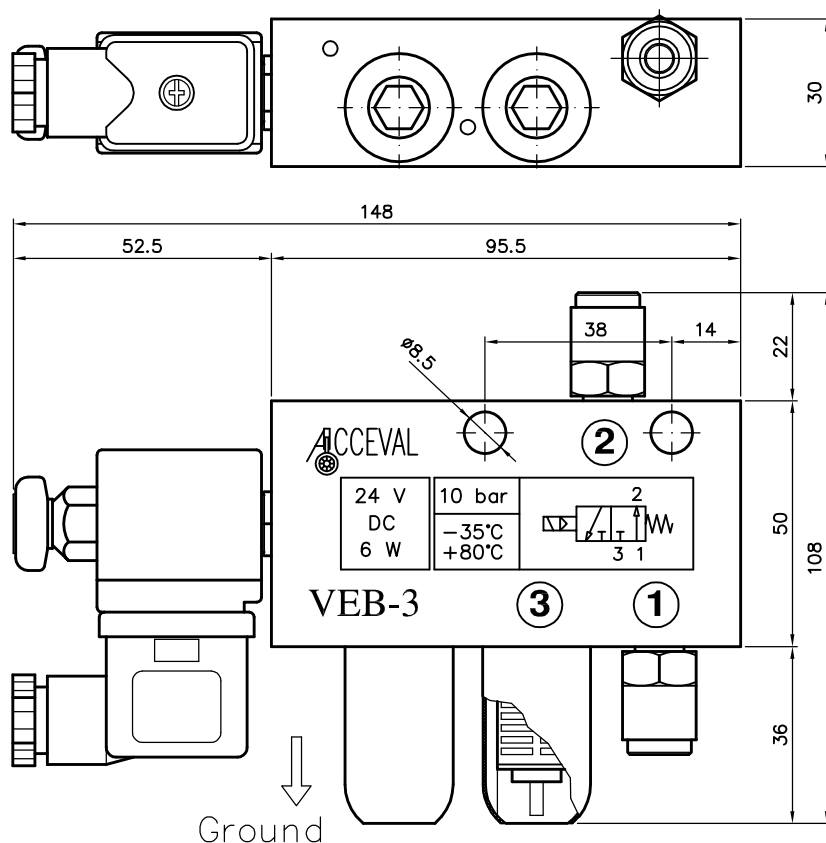
- \* Standard or automotive push-in fittings for 8 mm tube.

#### Port n.3 (Exhaust) and breathing

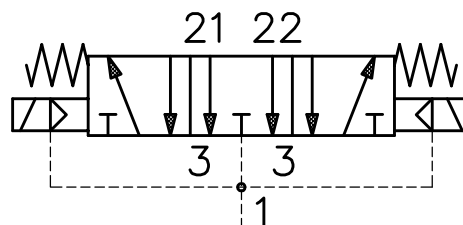
- \* Filter + filter cover.

#### Exhaust port of solenoid valve

- \* Rubber cup protection.



5/3 SOLENOID OPERATED  
VALVE (OPEN CENTERS)  
SOLENOID-SOLENOID  
R1/4" PORTS



Scale 2:1

Ground

ACCEVAL VEB-6

24V DC  
6W

3-10 bar  
-35°/+80°C

21 22

1

21 22

3 1 3

206.5

52.5

45

95

38

59

108

60

18

30

20

77

40

27.5

9.5

Ø8.5

- \* Max. working pressure: 10 bar.
- \* Min. working pressure: 3 bar.
- \* Safe static pressure: 15 bar.
- \* Temp. range.: from  $-35^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .
- \* Electrical details: 24V DC 6W.
- \* Protection class: IP 65 (DIN40050).
- \* Electrical duty: 100%.
- \* Electrical connectors: DIN43650.
- \* Electromagnetic compatibility (EMC) according to 89/336/CEE.
- \* Low voltage equipment (LVD) according to 73/23/CEE.

Port n.1

- \* Push-in fitting for 12 mm tube.  
(Optional: for 10 or 8 mm tubes)

Ports n.21 y n.22

- \* Push-in fittings for 10 mm tube.  
(Optional: for 8 mm tube)

Ports n.3 (Exhaust) and breathing

- \* Filter + filter cover.

Exhaust port of solenoid valve

- \* Rubber cup protection.



<i>Acceval</i>
Sonstige Ventile

VSM-1 / RPE-2

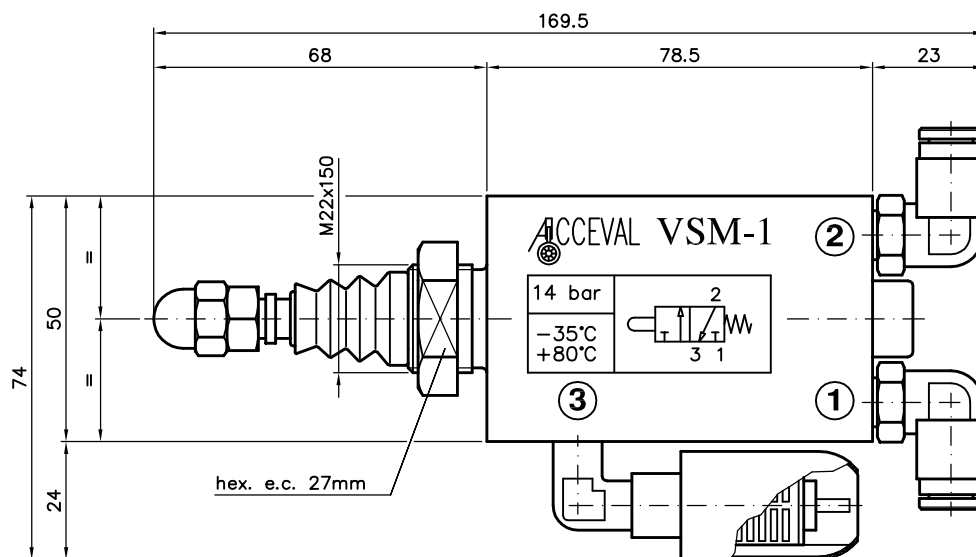
VFP-2

## ACCEVAL VSM-1

3/2 MECHANICAL OPERATED  
VALVE (NORMALLY CLOSED)

### APPLICATIONS

- \* End Stroke Control for Hydraulic Cylinders in Tippers.
- \* Lift Sensor of Tipcart for Quick Exhaust of Suspension Air.

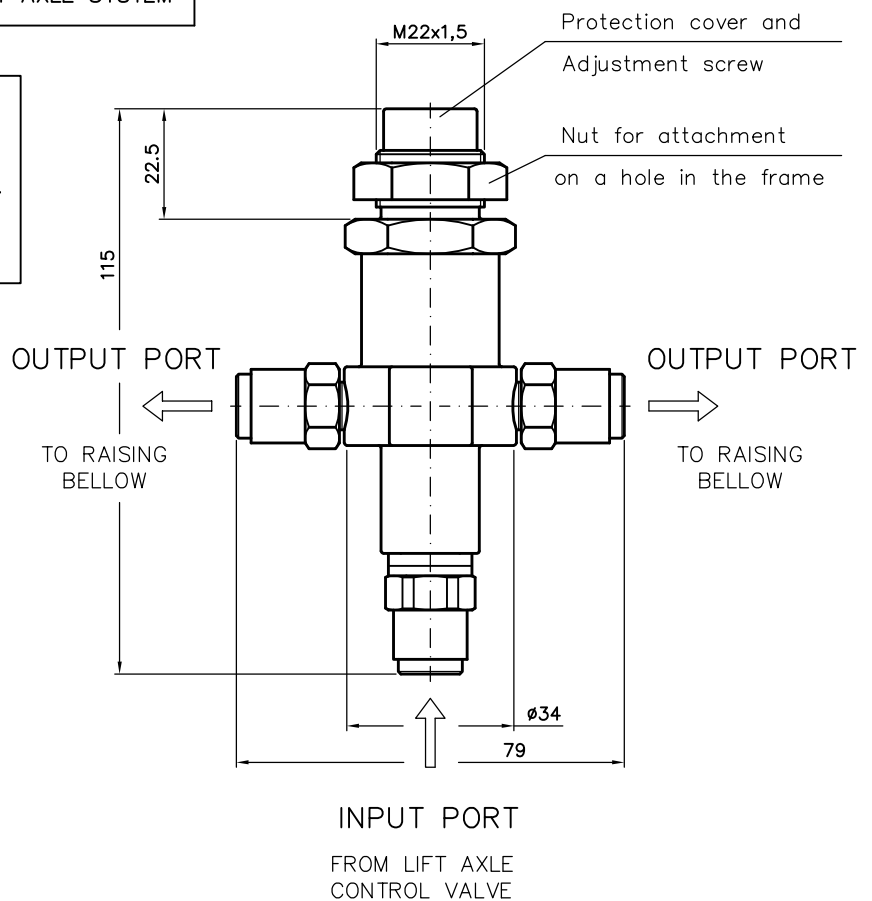


## ACCEVAL RPE-2

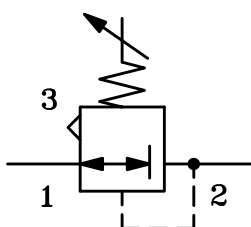
PRESSURE LIMITING VALVE FOR LIFT AXLE SYSTEM

### WORKING SPECIFICATIONS

- \* Pneumatical scheme: see drawing.
- \* Max. working pressure: 10 bar.
- \* Pressure adjustment: from 4 to 7 bar.
- \* Equipped with Norgren automotive fittings for 8 mm tube.  
(Standard: 2 x Output ports)



### PNEUMATIC SCHEME



## ACCEVAL VFP-2

SELECTOR VALVE FOR PARKING BRAKE CIRCUIT  
(TWO INPUT + FOUR OUTPUT PORTS)

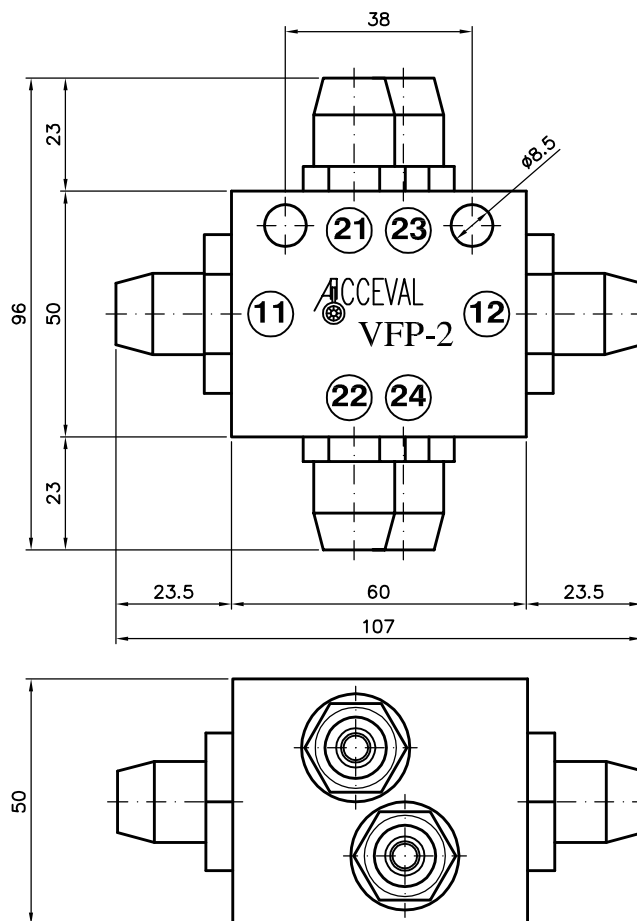
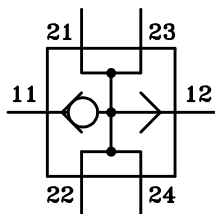
### WORKING SPECIFICATIONS

- \* Pneumatical scheme: see drawing.
- \* Max. working pressure: 16 bar.
- \* Temp. range: from  $-40^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .

### FITTINGS

- \* Equipped with Raufoss automotive fittings (8/6 mm tube):
  - + 2 x M22x1,5-8mm
  - + 4 x M12x1,5-8mm
- (Option: 10mm tube)

### PNEUMATIC SCHEME





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