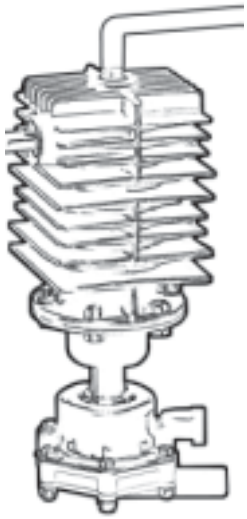
Designers Manual

Haldex Consep and ADV



Haldex
Brake Systems

DESIGNER'S MANUAL
Haldex Consep and ADV

Contents

Docs No. 9811912
Issue 01

Introduction

Haldex Designers Manual for Consep and ADV, is a document including requirements and guidance for the design of applications and installation of Haldex Consep and ADV in commercial vehicle applications.

To ensure safe operation and to achieve optimum lifetime of the product it is of the utmost importance that the installation of the Haldex Consep and ADV complies with this manual.

The Consep is a product which comprises a condenses/separator part and a drain part. The condenses separator part will condense and separate contaminants from the compressed air.

The drain part is an Automatic Drain Valve. The ADV will drain the condensed liquid and separated contaminants. The ADV can also be installed separately in a pressure tank.

Both products are suitable for all compressed air vehicle system.

Before installation of the Haldex Consep / ADV in a new vehicle type an Installation Check List should be completed and sent to Haldex. With this information Haldex will be able to suggest the best possible solution for the vehicle.

Condensation separation and drainage procedure/performance

Procedure

Consep

Fig 1 and 2. The compressed air is led into the Consep at the inlet port on the side of the housing. The compressed air passes between the housing wall and the cyclone insert. The shape of the cyclone forces the compressed air to rotate. The centrifugal effect which occurs when the air rotates around the cyclone forces the water and contaminants to the housing wall.

At the base of the cyclone, the compressed air is directed upwards through the cyclone centre and out via the outlet port at the top of the housing. Water and contaminants which have been condensed and separated flow downwards through a sieve and are collected in the lower part.

The liquid contaminant collected in the lower part is drained when the coil and core is electrically activated.

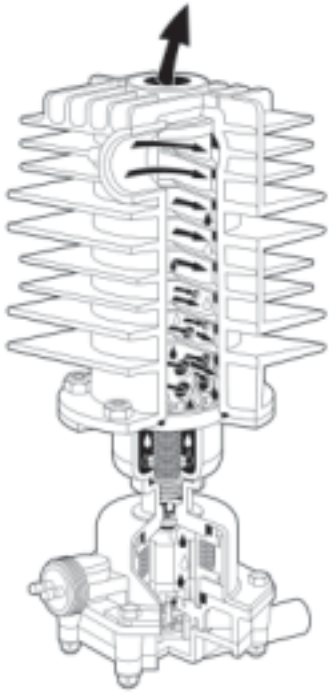


Fig 1

ADV installed in pressure reservoir

Fig 2. The compressed air enters the pressure reservoir where the airspeed will decrease. The compressed air will cool and the liquid contaminants that might occur will fall out and be collected at the reservoir base.

The liquid contaminant collected in the reservoir base is drained when the coil and core is electrically activated.

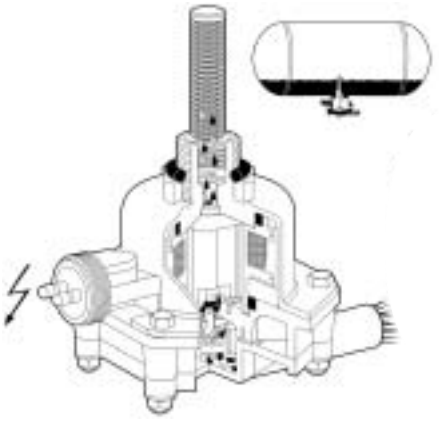


Fig 2

Performance

The Consep is capable of separating up to 90% of the contaminant if installed and maintained according the requirements within this document.

The drainage capacity at 8-bar pressure is for both Consep and ADV 1,3cc at each operate occasion.

Requirements for Haldex Consep and ADV

Air

Air flow (Consep)

Air flow resistance: 0,3 bar @ 1000stdL/min and 0 bar system pressure

< 0,05 bar @ 1000stdL/min and 8 bar system pressure

Air pressure

Max operating pressure: 20 bar.

Air temperature

Operating temperature for best performance: +5 - +65°C.
Ambient temperature: -40°C - +80°C.

Electrical supply

Voltage and power consumption

- 24V / 0,5A
- 12V / 1A

Installation

1. Consep / ADV Installation Guidelines

1.1 Mounting position

1.1.1 The Consep should be mounted in a location with sufficient space around it to facilitate service and to provide visual access for periodic inspection.

1.1.2 The Consep should be mounted out of direct tyre or wheel road splash or protected from it.

1.1.3 The Consep, including mounting brackets, lines, and fittings, should be mounted in a protected location such that minor mechanical damage to the vehicle will not damage the air system integrity.

1.1.4 The Consep and ADV must be mounted with the exhaust port downward.

1.1.5 The Consep should be mounted to avoid excessive heat sources.

1.1.6 The Consep must be mounted rigid enough to avoid vibration which could damage the pipework or Consep.

1.1.7 The Consep and ADV must not incline in any direction more than 15°.

1.1.8 The Consep should in order to achieve optimum performance be installed as close to the air drier or pressure reservoir as possible and with a sufficient flow of surrounding air around it.

1.2 Lines and Fittings

1.2.1 Air lines

1.2.1.1 To prevent moisture accumulation, the compressor discharge line should slope continuously downhill from the compressor to the Consep without any dips which exceed 1/2 the line diameter. If this is not possible, the line should run vertically straight upward at the compressor to a height that will permit a downhill sloping run to the Consep. The pipe between Consep and air drier must also have a downhill slope.

1.2.1.2 The compressor discharge line size, length, and material must be such that the Consep inlet temperature is no more than 65°C or no less than 25°C above low ambient (i.e., if ambient is - 40°C, the Consep inlet temperature must be above - 15°C). Lower Consep inlet temperature should be avoided to minimise the risk of freezing in the discharge line or Consep inlet fitting. Higher Consep inlet temperature should be avoided to minimise the risk of heat damage to the Consep / ADV seal and / or to avoid loss of condensing performance.

1.2.2 Fittings

1.2.2.1 The use of restrictive fittings in the compressor discharge line should be avoided. These fittings impede the airflow and contribute to increased freezing potential. Avoid the use of 90° elbows, where possible.

1.3 Electrical equipments

1.3.1 Cable / relay

1.3.1.1 A two-core cable shall be used. Chassis earth-return is not recommended

1.3.1.2 The cable should be installed and clamped in such a way as to avoid damage and water ingress into electrical components..

1.3.1.3 The ADV can be connected in a heated (continuously energised) mode. This mode should not be used if the ambient temperature at any time will be above +15°C.

1.3.1.4 The Consep / ADV could also be connected to the vehicle air control system.

Service and maintenance

No in ( ) refer to Fig page 10.

Consep

The Consep contains, aluminium housing (1), cyclone insert (2) and o-rings (3). The housing requires cleaning and the other parts requires cleaning / replacing in case of carbon clogging. If the Consep has an optional drain collector (9) this should also be cleaned.

ADV

The ADV contain a sieve (4), a core (5), an electrical coil (6), o-rings (7) and gaskets (8). The parts will require cleaning / replacing in case of clogging or leakage caused by carbon or other contaminants. If the ADV has an optional drain collector (9) this should also be cleaned.

Intervals

The maintenance intervals are very much dependant on the operational conditions for the Consep / ADV. The following is therefore only suggested maintenance interval for general installations.
City buses, 1 year or 50 000 km, inter city buses and trucks, 1-2 years.
If the suggested intervals are found to be too long or short, they should be adjusted to the actual situation.

Models

The following selections are to be made in the Installation Check List.

Consep.

None optional selections
- Threads at inlet /outlet port.
- Electrical power supply and connections.

Optional selections
- Integrated drainage collector.
- Integrated safety valve.

ADV.

None optional selections
- Threads at reservoir connection.
- Electrical power supply and connections.

Optional selections
- Integrated drainage collector.

Identification

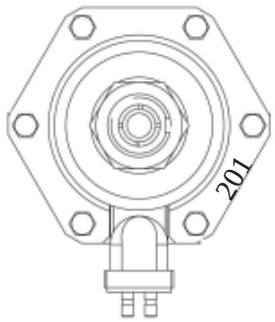
Identification of the Consep and ADV is a digit label on the housing side and stamped digits on the housing.

Digit label, example

Haldex Sweden
Type: 78689
20 Mpa / 24V / 0,5A

Type 78689: Haldex P/N
20 Mpa: Max working pressure.
24V/0,5A: Electric power.

Stamped digit, example



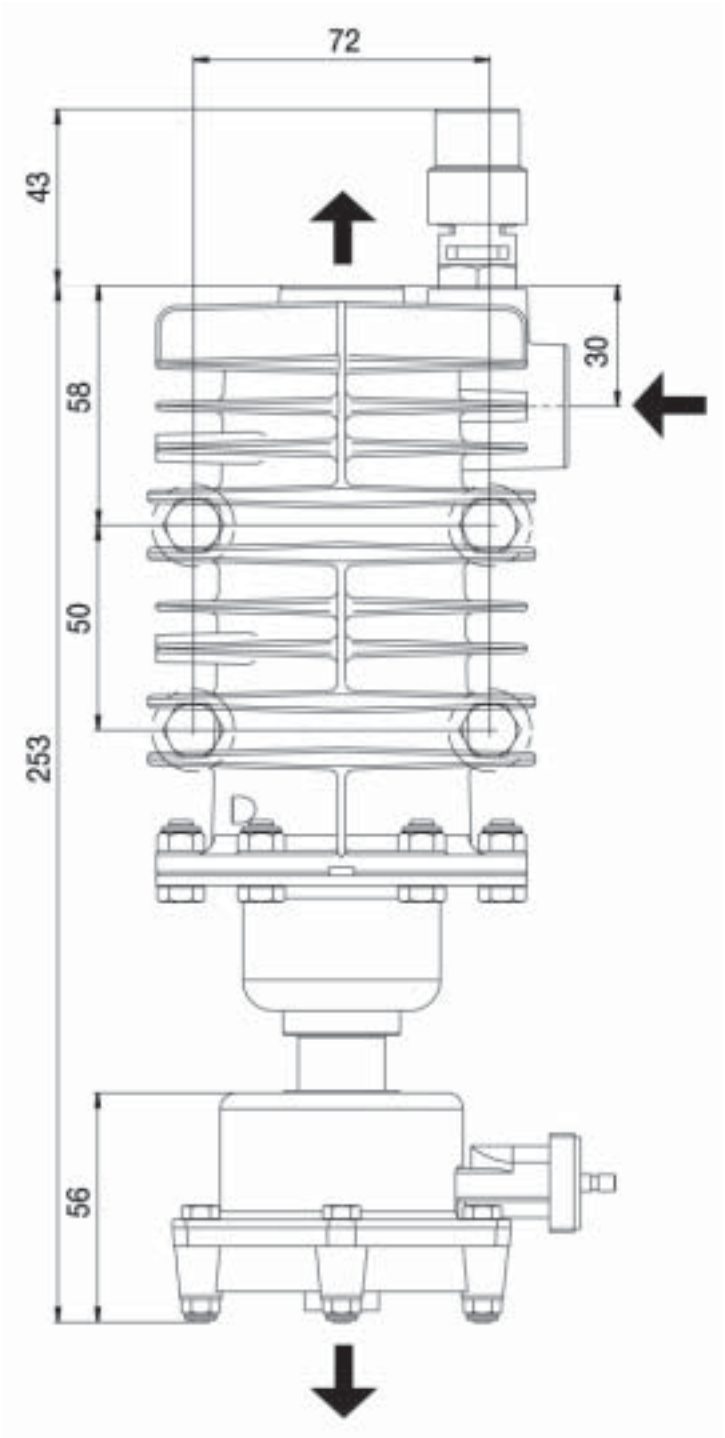
2: Manufacturing Year
01: Manufacturing Week

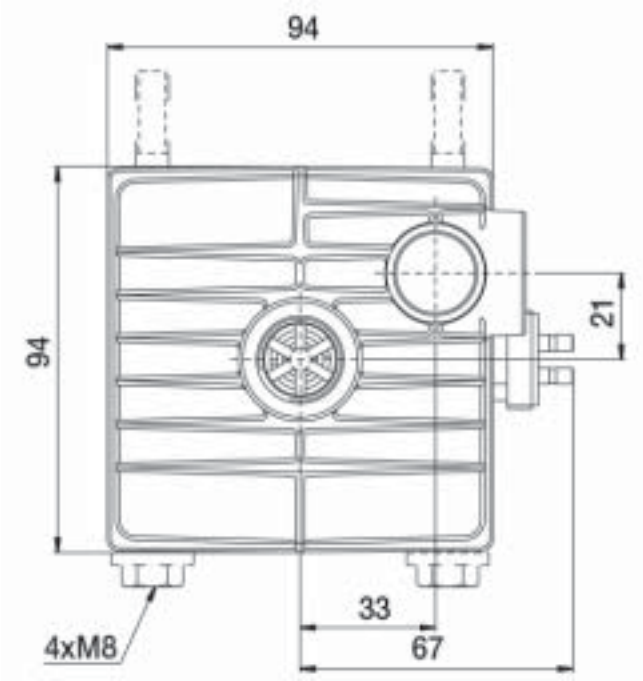
Specifications

- Working pressure: Max 20 bar.
- Airflow resistance: 0,3 bar @ 1000stdL/min and 0 bar system pressure
  < 0,05 bar @ 1000stdL/min and 8 bar system pressure
- Maximum inclination: 15°.
- Ambient temperature: - 40°C - + 80°C.
- Inlet air temperature: + 5°C - + 65°C.
- Weight: Consep, 1,8kg. ADV, 0,65kg.
- Air consumption: 50cc free air per operation at 0,8 Mpa.
- Draining capacity: 1,3cc water per operation at 0,8 Mpa.
- Insulatonclass: IP68.

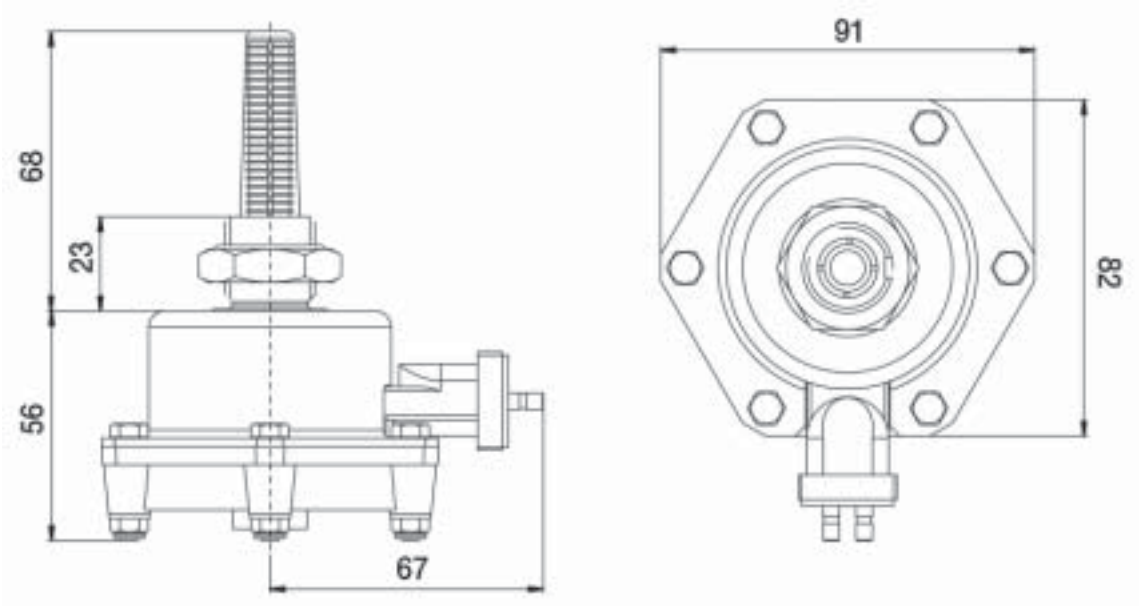
Dimensions

Consep

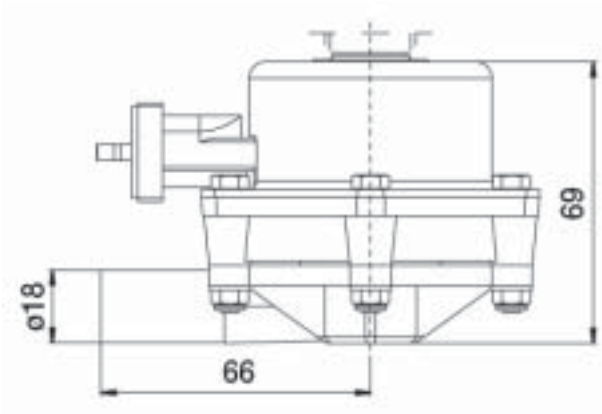




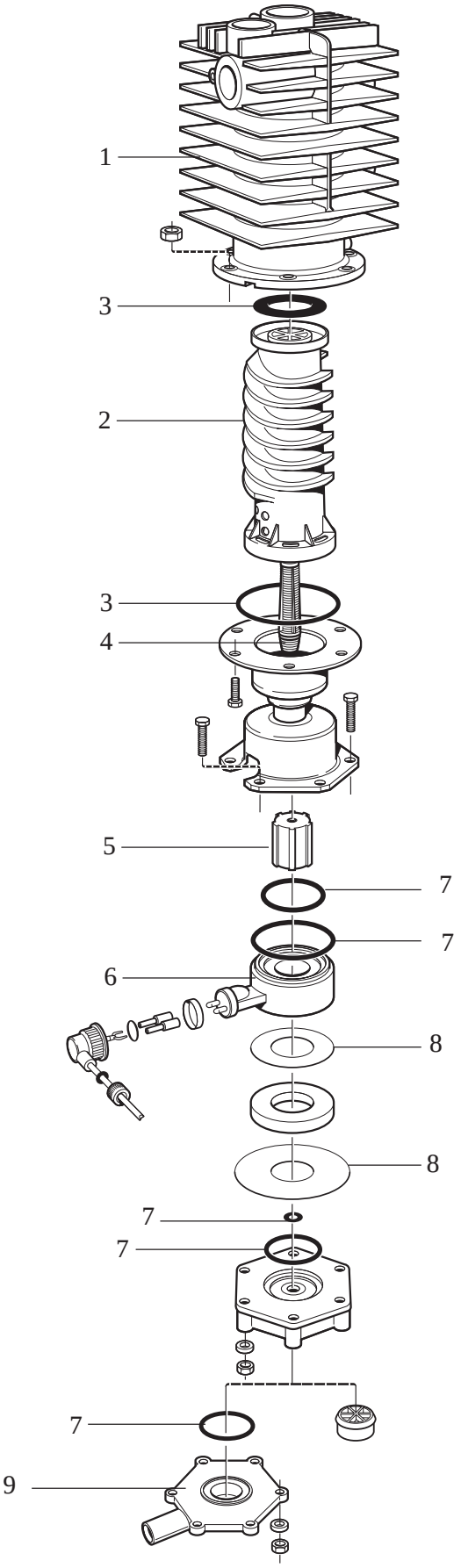
ADV



Drain collector (optional for both Consep and ADV).



Part overview



Notes

Notes

BELGIEN
Haldex N.V./S.A.
Brüssel
Tel +32 2 725 37 07
Fax +32 2 725 40 99
e-mail: info@hbe.haldex.com

BRASILIEN
Haldex do Brasil
São Paulo
Tel +55 11 5034 4999
Fax +55 11 5034 9515
e-mail: info@hbr.haldex.com

ENGLAND
Haldex Ltd
Newton Aycliffe
Tel +44 1325 310 110
Fax +44 1325 311 834
e-mail: info@huk.haldex.com

Haldex Brake Products Ltd
Redditch
Tel +44 1527 499 499
Fax +44 1527 499 500
e-mail: info@hbpuk.haldex.com

FRANKRIKE
Haldex Europe S.A.
Weyersheim (Strasbourg)
Tel +33 3 88 68 22 00
Fax +33 3 88 68 22 09
e-mail: info@hfr.haldex.com

INDIEN
Haldex India Limited
Nasik
Tel +91 253 38 73 62
+91 253 38 73 63
Fax +91 253 38 07 29

ITALIA SRL
Muggiò
Tel +39 039 2782350
Fax +39 039 796525
e-mail: info@hit.haldex.com

KINA
Haldex International Trading Co. Ltd.
Shanghai
Tel +86 21 6289 44 69
Fax +86 21 6279 05 54
e-mail: info@hcn.haldex.com

POLEN
Haldex Sp.z.o.o.
Praszka
Tel +48 34 350 11 00
Fax +48 34 350 11 11
e-mail: info@haldex.net.pl

SPANIEN
Haldex Espãna S.A.
Parets del Valles (Barcelona)
Tel +34 93 573 10 30
Fax +34 93 573 07 28
e-mail: info@haldex.es

SVERIGE
Haldex Brake Products AB
Landskrona
Tel +46 418 47 60 00
Fax +46 418 47 60 01
e-mail: info@hbpse.haldex.com

SYDKOREA
Haldex Korea Ltd.
Seoul
Tel +82 2 2636 7545
Fax +82 2 2636 7548
e-mail: info@hkr.haldex.com

TYSKLAND
Haldex Brake Products GmbH
Denkendorf (Stuttgart)
Tel +49 711 934 9170
Fax +49 711 934 91740
e-mail: info@hde.haldex.com

Haldex Brake Products GmbH
Heidelberg
Tel +49 6221 7030
Fax +49 6221 703400
e-mail : info@hbpde.haldex.com

USA
Haldex Brake Products Corp.
Kansas City MO
Tel +1 816 891 2470
Fax +1 816 891 9447
e-mail: info@hbpus.haldex.com

ÖSTERRIKE
Haldex Wien Ges.m.b.H.
Wien
Tel +43 1 8 65 16 40
Fax +43 1 8 65 16 40 27
e-mail: office@baeder-haldex.at

Haldex Group

Haldex is an innovator in vehicle technology and supplies proprietary products for trucks, cars and industrial vehicles on a global basis. Haldex is listed on the Stockholm Stock Exchange and has annual sales exceeding 6 billion SEK with 4,250 employees worldwide.

Haldex
Brake Systems

Innovative Vehicle Technology

Art.nr 90116/02-01/Landskrona