ALLVIS

MANUAL MEASURING SYSTEM

Allvis – Manual Measuring System

Index

1 Introduction

1.1 General

Congratulations on your purchase of the Allvis vehicle measuring system.

Allvis is an electronic measurement system intended for measuring and checking dimensional accuracy of vehicle unibody and frame.

The system consists of three main components:

- Electronic measuring arm
- Set of vehicle attachments and adaptors
- Access to vehicle dimension database with customized report print out features (optional)

These instructions contain a description of the equipment and directions for its use, handling and maintenance.

Important!

Read the instructions carefully in order to fully understand the correct handling of the Allvis measurement system and measurement data.

The equipment is intended for use in the auto body shop environment and in accordance with all recognized official safety procedures.

Photos and drawings used throughout these instructions depict the fundamental features and design of the product at the time of publishing and do not reflect potential future design changes.

Note!

Measurements on Allvis data sheets reflect measured values taken from vehicles after they leave the production line also from information received from vehicle manufacturers and great care has been taken to produce accurate and reliable data.

Measurements on Allvis data sheets should be seen as guideline values, since dimensions of vehicles of the same model and year can vary as a result of manufacturing tolerances or previous repairs, also as a result of manufacturer's subsequent design changes.

Allvis, JNE AB and its network of distributors, agents and technical sales representatives directly or indirectly involved in sales or technical support of the Allvis product line, cannot be held responsible for damages or losses that may occur through any data errors or lack of information on Allvis data sheets, check lists or supplements to check lists, or for user internet connection and computer related errors or malfunctions of internet service providers.

Subject to alteration without notice.

Warning!

Do not store or keep Allvis near computers, credit cards or other magnetic sensible things, though the magnet in the measuring arm may damage these.

1.2 Maintenance

A. General

The Allvis measuring system includes an electronic measuring arm, a precision instrument requiring proper care and maintenance to maintain its accuracy and performance.

Please follow all instructions and safety procedures very carefully to maintain equipment reliability and to benefit from all of its great features.

B. Maintenance

Be sure to clean all equipment after every use.

Special care should be taken when cleaning the electronic measuring arm, in particular each of the moving surfaces.

Use a clean dry cloth without detergent.

Return all parts to the storage box after every use.

Check each part individually for any damage that may have occurred during use.

C. Inspection

Have your distributor inspect the complete system at least once every year or when you suspect that damaged has occurred, to ensure accuracy and reliability.

Allvis certified distributors use control instruments provided by JNE AB to accurately perform inspections.

D. Scrapping

When it becomes necessary to scrap any of the Allvis measuring system equipment or parts it is essential that every item be sorted for recycling in accordance with local, state and federal requirements.

1.3 Liability

Important Notice!

Please read all instructions very carefully to fully understand the correct handling of the Allvis measurement system and vehicle dimension data.

The equipment is intended for use in the auto body shop environment and in accordance with all recognized and applicable safety rules and regulations.

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No part of this publication or Allvis data sheets may be copied in any form, or illegally stored in any computerized system other than the unit covered by the Allvis subscription agreement signed by the purchaser or user as authorized by JNE AB.

Subject to alteration without notice.

1.4 Warranty

Important Notice!

AVOID PERSONAL INJURY OR DAMAGE TO EQUIPMENT!

Read all instructions on the correct use of the Allvis measurement system and vehicle dimension data. Incorrect handling can result in personal injury or damage to the equipment.

A one-year warranty is applicable from the date of delivery, and refers to defects in materials and assumes normal care and maintenance.

The warranty assumes that:

- Allvis equipment has been used and maintained in accordance with the instructions outlined in this manual.
- Equipment has not been modified or rebuilt without the prior approval of JNE AB via its authorized distributor network.
- Only genuine Allvis parts have been used in repairs.

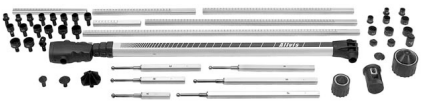
Photos and drawings used throughout these instructions depict the fundamental features and design of the product at the time of publishing and do not reflect potential future design changes.

Allvis equipment is intended for use in the auto body shop environment and in accordance with all recognized and applicable safety rules and regulations.

All claims must be referred to an authorized Allvis distributor for evaluation.

2 Allvis Measuring System

2.1 General Description



Allvis Electronic Measuring System

A lightweight telescoping electronic measuring arm made up of aluminum and composite materials forms the main component of the system.

A quick release socket built into the rear end of the telescoping arm accepts any one of six snap-in height calibration rods – rod numbers A to F.

A socket located on the inside of the self-centering magnet allows it to be snapped onto the ball of any one of the height calibration rods.

The housing of the electronic control unit with digital display located on the front end of the arm incorporates an easy to operate twist-lock socket for each of the 4 different lengths of datum height rods.

An adjustable rotating datum height level assembly is built into the top of the housing of the electronic control unit. Level adjustment is by thumb wheel.

Measurement control buttons are located on the front face of the electronic control unit and a battery compartment for the two AA batteries is built in to the lower part of the housing.

Distance measurements from center of the rear calibrated rod holder to center of the front datum height rod holder is generated by electronic impulses produced by a rotating wheel inside the arm.

For operating instructions - refer to item numbers 2.2 to 2.10

2.2 Display Functions

Start the Measuring System

NOTE! Make sure the telescoping measuring arm is completely collapsed.

Start the display by pressing shortly on the On/0 button. A digital number 900 (900 mm) will appear in the display window representing the start length of the tool (from the center of the chassis attachment to the center of the measuring tip).

Important!

If display does not read 900 – switch off by holding down the On/0 button for a few seconds and restart following the above procedure.

Normal Position

This is the automatic position on the measuring tool after starting it. Working area of the tool is now **900-2650 mm**.

On/0

Comparative Measuring

The digital reading can be reset for quick comparative checks during normal length measuring operations by briefly pushing the On/0 button to select 0 mm. From this point any change in length will register plus or minus in 1 mm gradients. Additional comparative checking is possible by repeating the above procedure at any time during comparative checking.

To resume normal length measuring i.e. 900-2650 mm settings, simply depress the button On/0 < 1 second.

Short Measures 400-2150

With the measuring rod for short measures you can measure down to 400 mm.

1. Screw in the measuring rod and socket / tip.
2. Mount the suitable measuring rod and socket / tip.
3. Adjust the display by pressing On/0 until short measures is stated. (See Display functions.)
4. Length and cross measuring can now be carried out easily and with high measuring accuracy.

Briefly depress this button to reset functions for longitudinal co-ordinate measurements – when using other generic vehicle dimension data on the market, see 5.1 Measuring without datasheet.

Save a Measuring Value

With this button you hold a measuring value on the display until you press the button again.

Light Level

Hold the button until you reach wanted light level on the display.

ENERGY SAVING FUNCTION

The display will automatically shut down after 5 minutes and be energized again at the slightest movement of the measuring arm.

Switch Off Function

The display switches off as above, but switch also off all electronic after 90 minutes of non-operation.

The measuring arm can also be switched off by depressing the On/0 button for >3 seconds.

2.3 Height Calibration Rods

The measurement system includes 6 height calibration rods. Each rod a different length, from A which is the shortest to F the longest. For best results, use shortest rod possible while allowing sufficient working height under the vehicle.

2.4 Magnetic Attachment

This attachment was developed to suit most vehicle models on the market. Use it when a round or oval hole <Ø35 mm is specified as the zero point on the vehicle dimension data sheet.

2.5 Datum Height Rods

6 rods are included ranging in length from 160 to 900 mm. Rod length is determined by the data sheet and should allow for the specified reading to be observed when the rod has been locked in place on the measuring arm. The rod should be about 100 mm longer than the height value on the data sheet, allowing for the extra length needed to insert the rod through the head. Insert the rod into the measuring head at the front end of the measuring arm. Position the flat side of the rod towards the “release” mark, set it at the desired height and secure by twisting it to the “lock” position.

2.6 ADJUSTABLE LEVEL

The adjustable level located on top of the measuring head is used to calibrate the measuring arm to a datum plane. The level swivels 180 degrees and the attached calibration wheel allows very accurate datum calibration.

With the measuring arm set up and adjusted to an undamaged control point the level should be swiveled to the adjustment position where the exposed adjustment wheel can be used to calibrate the datum plane.

See 4.2 Using level…..Read the part (IMPORTANT)!

When the measuring arm is moved to the damaged part of the vehicle to check datum height the level must be swiveled to the opposite locked position where it will be used to bring the arm into a level plane for accurate height measurement.

2.7 Measuring Sockets and Tips

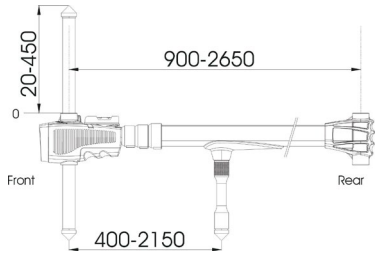
The measuring system includes:

- 3 cones: Ø25, Ø35 and Ø60 mm,
- 16 sockets sized from 8-28 mm,
- 1 90° holder, 9 M201 adapters 6-18.

Refer to vehicle dimension data sheets for specified socket or tip sizes to be used.

Sockets and tips snap into the top of the height measuring rods.

2.8 Short Measures



Holder for "Short Measures"

There is an attachment on the measuring tool for the tip holder for "short measures".

Fasten the holder and choose a suitable socket/measuring tip. Measuring can now be done from 400-2150 mm.

The measuring value can also be changed from normal position (900-2650) to 400-2150 on the display.

2.9 Replace Batteries

The electronic circuit of the Allvis measuring arm is powered by 2 AA 1.5 Volt batteries.

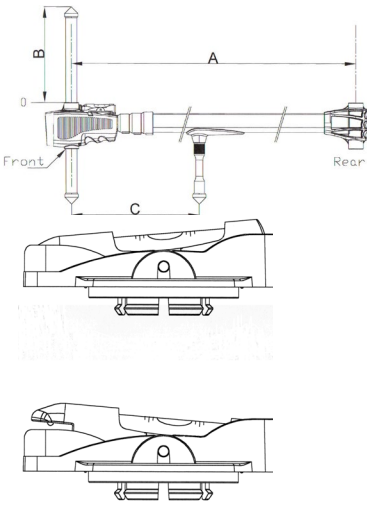
Batteries should be changed out when the digital display begins to fade. It is recommended that both batteries be replaced and that the old batteries be disposed of in accordance with local hazardous waste disposal regulations.

Batteries are located in a hidden compartment on the underside of the electronic measuring head (see photo). Battery cover latch can be released by hand or small flat blade screwdriver.

Note

Do not use batteries with power ratings other than 1.5 Volt as this can cause the equipment to malfunction or damage the electronic circuit.

2.10 Technical Specification



Model AVS100 Allvis Measuring System

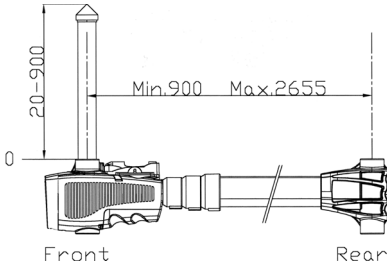
Length measurement range	(A)	900-2650 mm
Height measurement range	(B)	20-900 mm
Short measurement range	(C)	400-2150 mm

Level adjustment range

Compensates for the vehicle's inclination from level - front to back

Max 5° more or less.

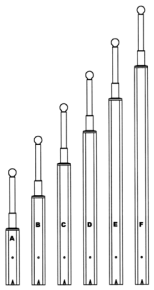
The integrity of the datum plane will be determined by the accuracy of the leveling process and it should be noted that height readings are directly affected by the level across the length of the measured area.



The longer the distance between measuring points the greater the change in height.

Refer to the table for the amount of change in height at the measuring head for each graduation of movement in the level.

Extension in mm	Change of height in mm
900	ca 0,5
1800	ca 1,0
2655	ca 1,5



The datum rods' differences in heights when the value of the datum rod A is = 0 mm

Datum rod

- A = 0 mm
- B = 50 mm
- C = 100 mm
- D = 150 mm
- E = 200 mm
- F = 250 mm

3 Creating vehicle Dimension Data Sheets

This section describes how to install and use the Allvis software.

3.1 General

Measurements on Allvis data sheets reflect measured values taken from vehicles after they leave the production line also from information received from vehicle manufacturers and great care has been taken to produce accurate and reliable data.

Measurements on Allvis data sheets should be seen as guideline values, since dimensions of vehicles of the same model and year can vary as a result of manufacturing tolerances or previous repairs, also as a result of manufacturer's subsequent design changes.

When significant deviations are detected, or uncertainty about accuracy of the data sheet compared to actual measurements on the vehicle exist,
take the following action:

- Check that the selected vehicle model year and type are correct.
- Check that the points measured have been correctly identified and correspond to data sheet references.
- Check that the correct height measuring attachments and adaptors specified on the data sheet are being used.
- Check that the height calibration has been performed according to instructions and to the specified measurement point.
- When in doubt, contact the distributor or the on-line technical support.

3.2 Liability

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4 Measuring

The technician must have a clear understanding of the damage to the vehicle before attempting to use the Allvis measuring system and vehicle dimension data.

Being well informed and aware of specific structural damage to the vehicle beforehand will highlight possible faults or inconsistencies in measurement values on data sheets at an early stage, also incorrect mounting, calibration or measuring points selected by mistake.

Measurement values shown on data sheets and the way the measuring arm is being used should be constantly reviewed to ensure that it is being used correctly. Likewise checking to see that the right vehicle has been selected in the database is equally important.

When in doubt check the above points thoroughly, and if the problem persists, contact the ALLVIS distributor or submit your question to our on-line tech support. Refer also to items 3.1 – 3.2.

4.1 Mounting the Magnet Attachment

Make sure that the mounting points on both sides of the vehicle are in the right location, and that they have been cleaned.

Select a suitable height calibration rod and snap the magnetic adaptor onto the ball of the height rod and test attach it in the selected mounting position. Make sure that the magnetic attachment is firmly seated and that there is no play.

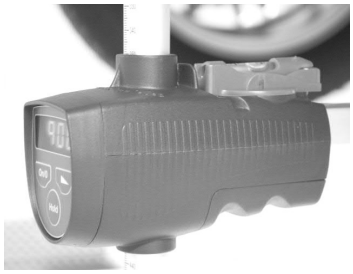
Remove the magnetic attachment with height calibration rod and mount it in the socket at the rear end of the measuring arm. Use firm downward pressure to click the rod in place.

Continue to 4.2 Using Level to Calibrate Height Plane.

4.2 Using Level to Calibrate Height Plane

To ensure the accuracy of the measurement it is important that the calibration of the height plane with the help of the level is conducted correctly. For this reason follow the following description carefully.

1. Select a calibration point in accordance with the data sheet.
2. Turn the level so that the adjustable brass knob is exposed and so that the level is in a straight line with the measuring arm.
3. Check the data sheet for the appropriate height calibration reading. Take a suitable height calibration rod and adaptor and push it into the socket on top of the electronic measuring head. A twist-lock action will secure the rod at the desired height.
4. Take the measuring arm with magnetic attachment connected and attach the magnet in the selected mounting position making sure that the attachment is firmly seated and that there is no play.



5. Pull out and adjust the measuring tool so that the measuring adaptor (socket) fits the calibration point.
6. Now adjust the level by means of the adjusting knob so that the bubble is exactly in the center, and between the markings on the level.

Important!
(AFTER CALIBRATION HAS BEEN COMPLETED)

- If the calibration point is BEHIND the magnetic attachment in relation to the points to be measured, the level MUST be turned 180 degrees/ one half turn, before measuring can begin.
- If the calibration point is in the SAME direction as the points to be measured, the level should NOT be turned.

When the vehicle is not placed horizontally level (from side to side) measurement values can be affected, although in most cases only marginally (see 4.6).

Pay attention to the level during measuring operations to ensure that the calibration has not changed, or disturbed by changing the level's adjusting knob or by swiveling the level.

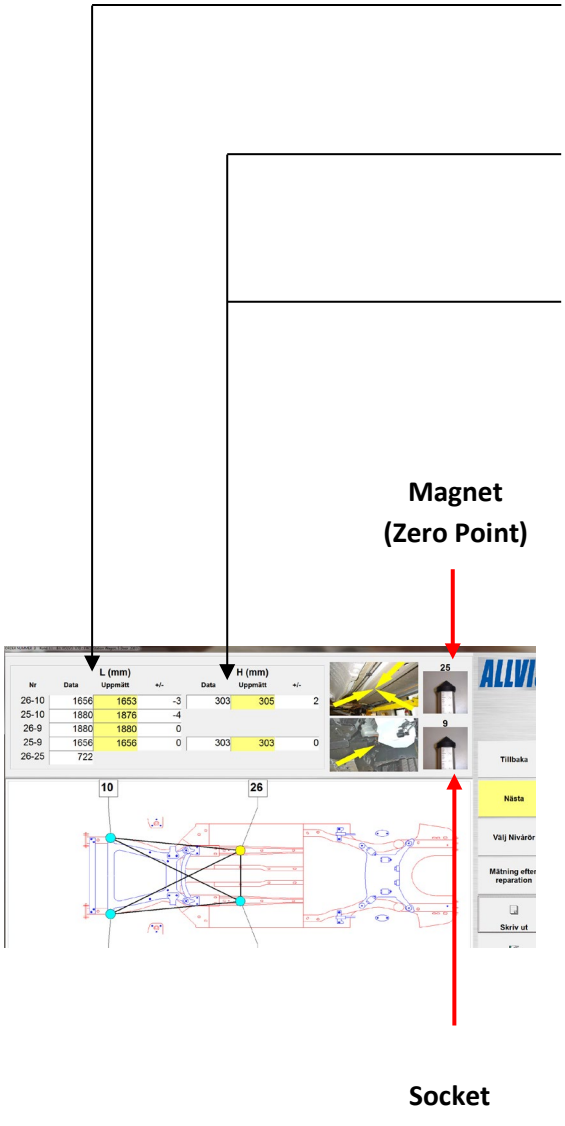
The calibration of the measuring arm is now complete and measuring operations can begin. Refer 4.3 – 4.6.

4.3 Length Measuring

Before starting to measure it is important to check the calibration of the measuring arm. This is done by compressing the arm altogether and pushing the ON/0 button for at least three seconds so that the display goes off. With the measuring arm still compressed push the ON/0 button and the digital number 900 (900mm) will appear.

The measuring tool is now calibrated and will start measuring from 900 mm.

If during measuring operations any doubt exists about the calibration of the measuring arm, repeat the above procedure.



1. Read the length dimension between the magnetic attachment and the measuring point to be measured according to the data sheet.
2. Read the height dimension given on the data sheet and select a suitable height measuring rod and adaptor (socket).
3. Push the height measuring rod and adaptor into the measuring tool and set it to the height dimension given on the data sheet.
4. Mount the magnetic attachment in the intended attachment point. Pull out and adjust the measuring tool so that the selected measurement point can be reached.

   *(It can be advantageous here to use the hold feature to freeze the measurement value, especially if it is difficult to see the display while measuring. Press the **HOLD** button briefly to freeze the measurement value. To return, press the **HOLD** button again briefly.)*
5. Read the measuring arm's display and compare the length measurement value with the value on the data sheet.

   (It can be advantageous here to enter the measured value in the data sheet table in order to create a before or after report.)

Repeat the same procedure on the other side of the vehicle's corresponding and selected length measurement point.

Note that the vehicle can have different measurement values for the right and left side, depending on the design of the vehicle.

4.4 Symmetry Measuring (Cross-measuring)

Before starting to measure it is important to check the setting of the measuring arm, see 4.3 Length Measuring.

Measuring symmetry of a vehicle according to dimension data sheet does not differ to any significant extent from the previous section, 4.3 Length Measuring.

Symmetry measuring uses basically the same procedure.

It is important during symmetry measuring to NEVER measure or check height deviations at the same time. The reason for this is that the height measurement value can be affected by the lateral inclination of the vehicle.

It is, however, important that the height measuring rod be adjusted to the same height applicable to length measuring.

In all other respects the same procedure as in length measuring applies.

1. Read the symmetry (cross) dimension between the magnetic attachment and the measuring point to be measured given on the data sheet.

2. Read the height dimension given on the data sheet and select a suitable height measuring rod and adaptor (socket).

3. Push the height measuring rod and adaptor into the measuring arm and set it to the height dimension given on the data sheet.

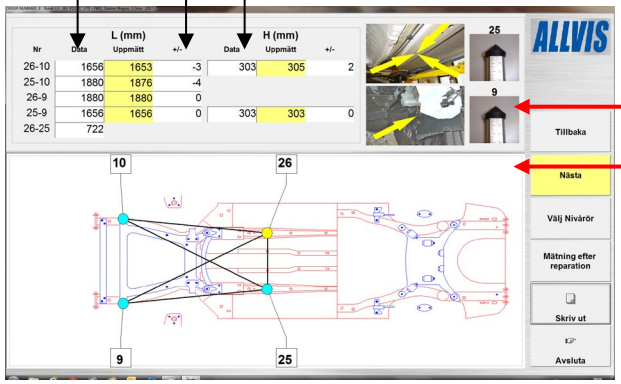
4. Mount the magnetic attachment on the end of the measuring arm. Pull out and adjust the measuring arm so that the selected measurement point can be reached.

   *(It can be advantageous here to use the hold feature to freeze the measurement value, especially if it is difficult to see the display while measuring. Press the **HOLD** button briefly to freeze the measurement value. To return, press the **HOLD** button again briefly.)*

5. Read the measuring arm's display and compare the symmetry (cross) measurement value with the value on the data sheet.
   (It can be advantageous here to enter the measured value in the data sheet table in order to create a before or after report.)

Repeat the same procedure on the other side of the vehicle's corresponding and selected symmetry (cross) measurement point.

Note that the vehicle can have different measurement values for the right and left side, depending on the design of the vehicle.



Magnet (Zero Point)

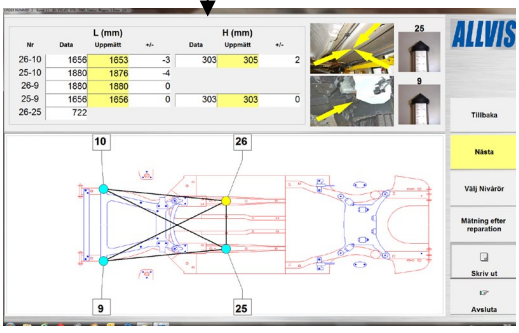
Socket

4.5 Height Measuring

During height measuring there are several important points to bear in mind.

- As far as possible the vehicle should be positioned on the same lateral level, or this can have an adverse effect on the accuracy of the height measurements. The extent to which the measurement accuracy is affected can be seen in the table in section 4.6 Position of the Vehicle.
- Height measuring should never be conducted at the same time as symmetry (cross) measuring. The reason for this is that a difference in the lateral level of the vehicle can significantly affect the measurement accuracy during symmetry (cross) measuring.

Other applicable rules:



1. Read the height dimension given on the data sheet.
2. Select a suitable height measuring rod and adaptor (socket).
3. Push the height measuring rod and adaptor into the measuring arm socket and set it to the height measurement given on the data sheet.
4. Mount the magnetic attachment in the socket on the end of the measuring arm. Pull out and adjust the measuring arm so that the selected measurement point can be reached.
   NOTE, the mounting point for the magnetic attachment and measurement point where height measuring is to be done must be on the same side of the vehicle's center line!
5. Read the position of the bubble in the level. If it is in the center, the measurement value for the vehicle is correct.

   If not, adjust the height measuring rod up or down so that the position of the bubble is centered in the level.

Note: Never Adjust the Level's Adjusting Knob!

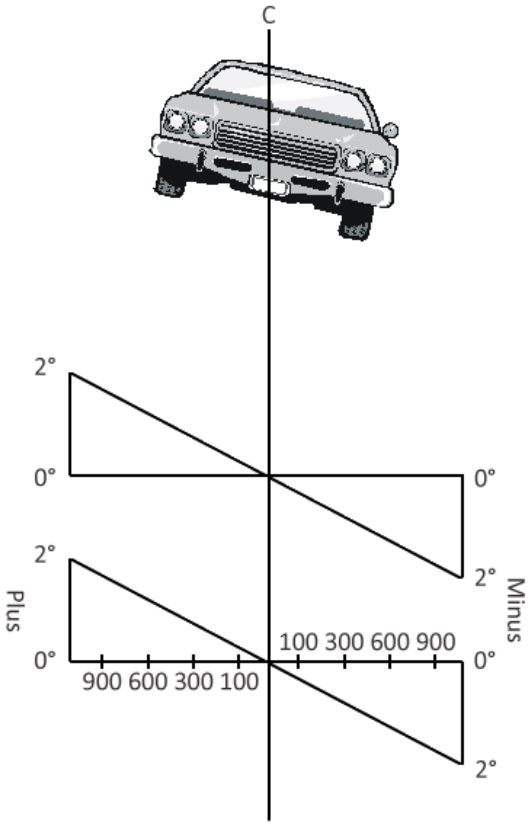
Now read the height measurement value. A value higher than the data sheet value indicates that the measurement point is higher than the correct measurement value. Similarly, if the value is lower than the data sheet value this indicates that the measurement point is lower than the correct measurement value.

(It can be advantageous here to enter the measured value in the data sheet table in order to create a before or after report.)

Repeat the same procedure on the other side of the vehicle's corresponding and selected length measurement point.

Note that the vehicle can have different measurement values for the right and left side, depending on the design of the vehicle.

4.6 Position of the Vehicle



The positioning of the vehicle is in certain cases decisive for the measurement accuracy with the ALLVIS measurement system.

Above all it is the vehicle's lateral inclination, which is important, since this influences the measurement result when measuring the height of the vehicle.

The table below reports the influence on the measurement accuracy in millimeters and degrees for a specific lateral inclination of the vehicle.

This illustration shows that the vehicle is 1200 mm wide, 600 mm on each side of the center line, and standing at an inclination of 5°. If one goes out to 600 mm on the scale and down to 5 on the graduated scale this shows that the height difference is 52 mm from the center line + or - depending on which side is measured. The millimeter scale shows the height difference to be 100 mm from the center, depending on how many degrees the vehicle is inclined. The example shows how important it is for the vehicle to be level in order to obtain a correct measurement result. The table below shows how much must be added on or taken away to obtain a correct measurement value.

+ Center line of vehicle -

mm	900	800	700	600	500	400	300	200	100	C	100	200	300	400	500	600	700	800	900
0,5°	8	7	6	5	4	3,5	3	2	1	**0**	-1	-2	-3	-3,5	-4	-5	-6	-7	-8
1°	16	14	12	10	9	7	5	3	2	**0**	-2	-3	-5	-7	-9	-10	-12	-14	-16
2°	31	27	24	21	17	14	10	7	3	**0**	-3	-7	-10	-14	-17	-21	-24	-27	-31
3°	46	41	36	31	26	21	16	10	5	**0**	-5	-10	-16	-21	-26	-31	-36	-41	-46

The vehicle height difference in mm from the center of the line.

The degrees show the inclination of the vehicle.
Always try to have the vehicle as level as possible!

5 Quick Guide

5.1 Quick Guide without Data

- Take care to select a combination of datum and height measuring rods with attachments that will leave sufficient room to operate the telescoping measuring arm freely under the vehicle.
- Ensure that both the datum and height measuring rods are locked in place.
- The points under the vehicle where the magnetic attachment is to be mounted must be symmetrical and undamaged.
- To facilitate fast level calibration of the measuring arm it is important to set up the datum and height measuring rod lengths so that the measuring arm will be near level with the vehicle to be measured.
- The measuring arm must be fully collapsed before calibration and measurement can commence.
- During all measuring operations, especially during height measuring and calibration procedures, it is important to hold onto the digital measuring head and not the telescoping part of the arm, which could affect measuring accuracy.
- Beforehand check that the adjustment wheel on the end of the red level is exposed and that the level is in line with the measuring arm. If not turn the level until it “clicks” in place and the adjustment wheel is accessible.
- Never simultaneously compare height and symmetry readings. The same applies to cross-checking measurements.
- For best results, make sure that the vehicle is set up level and do not lean on any part of the vehicle during measuring operations.
- Always refer to the Allvis main instruction manual prior to measuring!

Coordinate Length Measuring – Using Generic Vehicle Dimension Data

(Follow this procedure when Allvis Vehicle Dimension Data is not available)

Allvis measuring system is equipped with ability to triangulate the vehicle’s measuring points. This ability is especially developed for measuring operations when for example the manufacturer’s or some other producer’s general measuring data is used to control measure the vehicle. In these measure data (Datasheet) the length measures are generally given in a length axle, usually outside the vehicles side. The same goes for the width measures that are given from a center line and out to the measuring points on the car.

Since the measures are given in coordinate they don't give the actual measure between point A and B, but the coordinate according to the drawing. This means that it is impossible to control a given measure from such a Datasheet with traditional tools like gauges etc. For that reason Allvis measuring system is equipped with the ability to triangulate and automatically calculate the coordinated length measures.

How it is done:

1. Collapse the measuring arm. Start the tool by pressing the On/0 button. The display is now 750 mm.
2. Briefly press the button , the display is now showing 0. Pull out the tool until the display reaches the stated difference in width measure on the Datasheet between point A and B. Press again briefly on the button
3. Measure between A and B.
4. The stated measure shown in the display is the straight length measure in coordinate between point A and B. (The so-called projected measure.)
5. To resume normal mode, press On/0.

Note!

At measuring operations like the one above it is also important to ensure the measuring tool's level with the vehicle concerning the height. For that reason the difference in height between point A and B should be adjusted between the tool's front and rear rod.

"Hold" Feature:

The Allvis "Hold" feature will freeze (hold) the digital reading during any measuring operation – extremely useful when it is difficult to see or read the display in awkward situations.

- At any time during a measuring operation push the **HOLD** button once to hold the reading.
- Push the hold button again and the reading will return to normal.

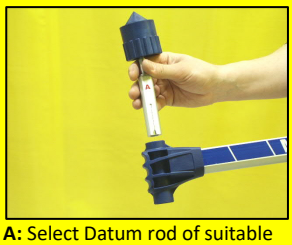
Quick Check Comparison Feature

This feature eliminates the need to compare actual length measurements allowing instead an exact and very quick differential reading.

- Measure between 2 selected points and push **ON/0** button once to memorize the reading and to zero the digital display.
- Move the measuring arm to the opposite side and its corresponding measuring points.
- Now the display shows only the difference in length, in millimeters compared with the value from the opposite side. The reading registers plus or minus values to indicate long or short conditions.
- Push the button and hold for 2 seconds to return length measurement.

5.2 Quick Guide without Vehicle Dimension Data

1) Mount datum rod

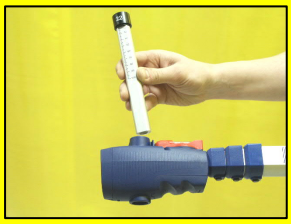


A: Select Datum rod of suitable length.

B: Snap magnetic attachment onto the ball of the datum rod.

C: Insert datum rod into the rear end of the measuring arm. Use firm downward pressure to snap it into the socket.

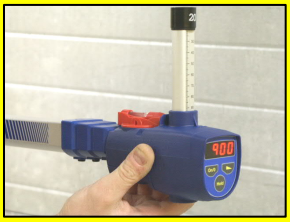
2) Mount height rod



A: Select a height measuring rod and socket to suit the application.

B: Insert height measuring rod into the frontend of the arm, set it at the desired height and twist to secure rod.

3) Start the measuring system



A: Collapse the telescoping measuring arm completely and press **On/0** on the display panel. A digital number (900) will appear in the display window representing the minimum collapsed length of the arm.

4) Mount magnet

A: Mount the magnetic attachment on a symmetrical, undamaged point under the vehicle.

5) Measuring value 1

A: Pull the measuring arm out until the socket on the height measuring rod is located on the measuring point to be checked.

B: Read the digital length measurement on the display.

6) Level

A: Use the adjustment wheel attached to the one end of the red level assembly to level the measuring arm. If the adjustment wheel is not accessible, turn the level half a turn to expose it.

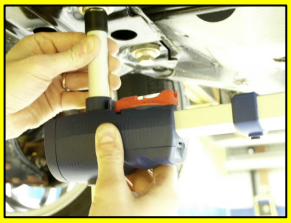
7) Measuring value 2

A: Move the measuring arm to the opposite side of the vehicle and fit the magnetic attachment to an equivalent measuring point.

B: Take a similar length reading on this side.

C: Compare readings.

8) Check height difference



A: Check the level of the arm.

B: Use the height measuring rod to set it level.

C: Read height on the calibrated rod and compare for possible height differences between the two measuring points on opposite sides of the vehicle.

9) Cross measuring

A: Cross check side to side, from each magnetic mounting point to an equivalent measuring point on the opposite side. Compare digital readings to check for symmetry.

6 Adapters

Product development of ALLVIS measurement systems is continuously in progress. This also includes the development of different types of adapters, both attachment and measurement adapters.

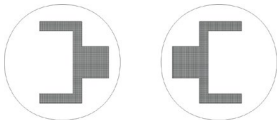
Your local ALLVIS distributor will keep you continuously informed of new product innovations.

If you have any special preferences or requirements, contact your local ALLVIS distributor.

6.1 Adapters

AVA 111:
Special adapter developed for American manufactured frame vehicles, where side mounting is demanding to get to the frame's measuring points. For further information, contact your local ALLVIS distributor.

6.2 How to use AVA 111



To be able to choose a measuring point that is placed on the side of the vehicle's frame for example, you need to use AVA 111. On the data sheet you discern these points by the measuring socket or adapter M201 that is shown, according to the picture.

6.3 Choose Socket/Adapter

On the data sheet is also information about type and size of adapter to use.

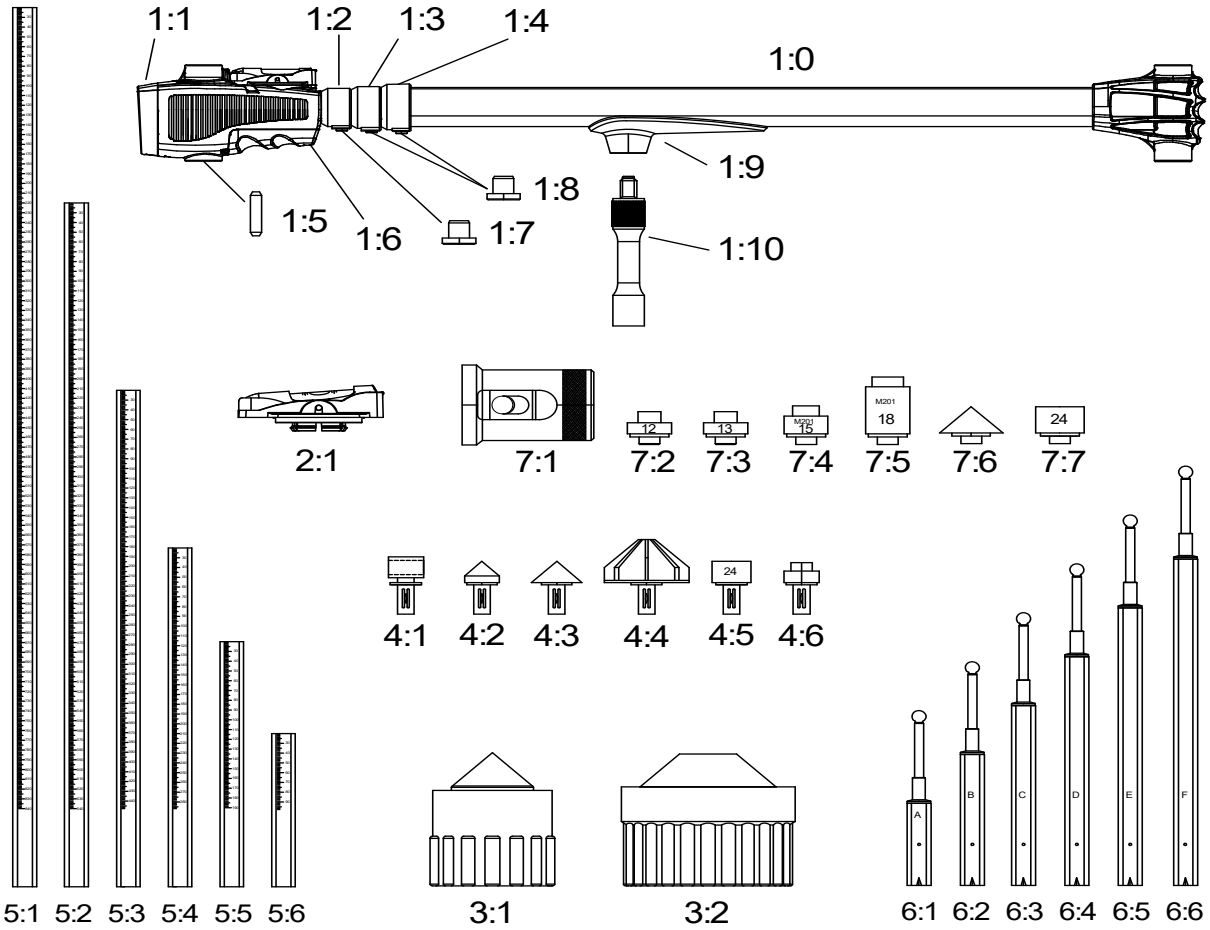
Fasten the socket/adapter in the chassis attachment by holding the center part and press/turn on the adapter and make sure it is plane and stable.

Then mount selected datum rod into the click-in position and make sure it is fastened properly.

Perform calibration and measurements in the same way as described in the manual for Allvis under section 4.0 Measuring.

7 Technical Notes

7.1 Drawing and Article Numbers



Pos	Art. No.	Name
1:0	AVP1900	Measuring tool
1:1	AVP1375	Front
1:2	AVP1281	Collar 2
1:3	AVP1291	Collar 3
1:4	AVP1301	Collar 4
1:5	AVP1361	Friction stick
1:6	AVP1380	Battery cover
	AVP1450	Battery
1:7	AVP1320	Locking for collar
1:8	AVP1320-2	Locking for collar
1:9	EMK1404	Slide
1:10	EMK1403	Tip holder for slide
2:1	AVP1410	Level
3:1	AVP1480	Chassis attachment Ø35
3:2	AVA222	Chassis attachment Ø60
4:1	TB3100	Tip holder 90°
4:2	TB3000	Measuring tip Ø25
4:3	TB2900	Measuring tip Ø35
4:4	TB2800	Measuring tip Ø60
4:5	TB1370	Socket ø8-28 (state no when order)
4:6	TB2705	Adaptor M201 6-18 (state no when order)

Pos	Art. No	Name
5:1	AVP1180	Measuring rod 845
5:2	AVP1190	Measuring rod 645
5:3	AVP1200	Measuring rod 450
5:4	AVP1210	Measuring rod 285
5:5	AVP1220	Measuring rod 185
5:6	AVP1230	Measuring rod 100
6:1	AVP1110	Datum rod A
6:2	AVP1120	Datum rod B
6:3	AVP1130	Datum rod C
6:4	AVP1140	Datum rod D
6:5	AVP1150	Datum rod E
6:6	AVP1160	Datum rod F
7:1	AVP1470	Chassis attachment 90°
7:2	AVP1485	Adaptor 12
7:3	AVP1490	Adaptor 13
7:4	AVP1500	Adaptor 15
7:5	AVP1510	Adaptor 18
7:6	AVP1521	Measuring tip short Ø35
7:7	AVP1540	Socket short 10-26 (state no when order)
	AL9000	Allvis storage case
	AVA111	Complete truck adaptor kit

7.2 Explanations model codes

2	Two Seater
4	Four Seater
2+2	Two +Two Seater
2D	Two Door
3D	Three Door
4D	Four Door
5D	Five Door
3HB	Three Door Hatchback
5HB	Five Door Hatchback
2HT	Two Door Hardtop
4HT	Four Door Hardtop
4L	4-link Suspension
5L	5-link Suspension
2WD	Two Wheel Drive
4WD	Four Wheel Drive
4WS	Four Wheel Steering
Aut	Automatic gearbox
AWD	All-Wheel Drive
B4	4 cylinder Boxer engine
B6	6 cylinder Boxer engine
B	Bus
C	Coupe
CO	Combi
CP	Compact
CS	Coil Springs
CV	Convertible/Cab
CVP	Cab Plus
D	Diesel
E	Extended
ExC	Extended Cab
ExV	Extended Van
EV	Electric vehicle
FWD	Front Wheel Drive
HB	Hatchback
HD	Heavy duty
HT	Hardtop
IRS	Independent Rear Suspension
LB	Liftback
LC	Light Commercial
LHD	Left Hand Drive
Lo	Long
LoB	Long Bed
LS	Leaf Springs
LWB	Long wheelbase
Man	Manual gearbox
McP	McPherson
MPV	Multi Purpose Vehicle
MV	Mini Van
MWB	Middle wheelbase
NT	Narrow track
O	Open
P	Petrol
PS	Power steering
PU	Pick Up
R	Roadster
RC	Regular Cab
RHD	Right Hand Drive
RWD	Rear Wheel Drive
S3	3 cylinder straight engine
S4	4 cylinder straight engine
S5	5 cylinder straight engine
S6	6 cylinder straight engine
S	Sedan
Sh	Short
ShB	Short Bed
Sp	Sport
SR	Servo
Std	Standard
StdC	Standard Cab
StdV	Standard Van
SUV	Sport Utility Vehicle
SW	Station Wagon
SWB	Short wheelbase
Ute	Utility Vehicle
V	Van
V4	4 cylinder V-engine
V5	5 cylinder V-engine
V6	6 cylinder V-engine
V8	8 cylinder V-engine
V10	10 cylinder V-engine
V12	12 cylinder V-engine
W	Wankel engine
WB	Wheelbase
WT	Wide track
XLWB	Extra-long wheelbase

8 Declaration of Conformity

Declaration of conformity

According to

the EMC Directive 89/336/EEG, 92/31/EEG & the
Low Voltage Directive 73/23/EEG and 93/68/EEG including amendments by the
CE-marking Directive 93/68/EEG

Type of equipment -
Allvis Car Measuring System

Brand name or trade mark
JNE

Type designation(s)/Model no(s)
AVP1900

Manufacturer's name, address, telephone & fax no
JNE AB
Box 200, SE-597 24 Åtvidaberg, SWEDEN
Tel: **+46 120-109 90**, Fax: **+46 120-109 40**

The following standards and/or technical specifications, which comply with good engineering practice in safety matters in force within the EEA, have been applied:

Testreport/ technical construction file/ normative document
Ref. No: 02024 / Issued by: JNE AB

Standard
EN 55011 Class B,
EN 61000-6-2: 2001, EN 61000-4-2, -3, -8.
MID 2004/22/EC

Additional information
The product is CE-marked in 2001

As manufacturer/ the manufacturer's authorized representative established within EEA, we declare under our sole responsibility that the equipment follows the provisions of the Directives stated above

Date and place of issue
Data e luogo di rilascio
Åtvidaberg 2010-04-12

Signature of authorized person

Name & Position
Håkan Johansson, Managing Director

JNE AB, SWEDEN
info@jne.se
www.jne.se