
Special Tools and Equipment Information

SPTL 2607

VAS 621001A Matrix Headlamp Aimer – Automatic Shipment / Maha Installation

USA Only

Vehicle Type: All vehicles with active Matrix headlamps

Subject: Matrix Headlamp Aimer VAS621001A Auto-Ship and Installation

Information: Porsche Special Tools & Equipment has identified the need for new tooling to support Matrix headlamp calibration and adjustment. This equipment package will be automatically shipped to your Porsche Center as a Minimum Required Tool (MRT).

Prior to installation, you must complete the required Pre-Check Form using the following link: [\[MS Form Link\]](https://forms.office.com/e/VFaa7Tvyxd).
<https://forms.office.com/e/VFaa7Tvyxd>

The equipment will be shipped directly from the manufacturer to your Porsche Center.
MAHA will perform the installation of the guide rail system and the VAS 621001A.

Please do NOT attempt to install the equipment yourself.

Porsche requires this equipment to be installed utilizing a recessed rail system directly in front of the alignment rack. Headlamp aiming procedures will be performed with the vehicle positioned on the alignment rack. The recessed guide rail system is designed to prevent interference with ADAS calibration equipment.

Your Porsche Center is responsible for coordinating with a local contractor to perform all necessary floor modifications, including cutting and recessing the concrete floor prior to MAHA's arrival for installation. Following installation, your Porsche Center is responsible for having the rail system backfilled and the floor restored. Any tile removed during the installation process must also be reinstalled.

A **\$2,000 financial penalty** will be charged if MAHA is required to return for installation as a result of preventable conditions, including inaccurate measurements, incomplete floor preparation, or failure to meet the installation requirements outlined above.

If there are extenuating circumstances that prevent installation in the alignment bay, please submit a Special Tools PRMS ticket. The ticket must include:

- Photos and measurements demonstrating why installation in the alignment bay is not feasible.
- A proposed alternative installation location.
- Photos and measurements of the proposed alternative location.

Failure to provide the required documentation may delay the review and approval process.

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MAHA will perform all installations. **Installation scheduling will be coordinated by geographic region**, with centers in high-density metropolitan areas grouped together to streamline deployment and improve installation efficiency. Centers in other regions will be scheduled accordingly as the rollout progresses.

Shipment from the manufacturer will start on August 24, 2026.

Target completion date for all installations is July 2027

Tools

Included:

<u>Tool Number</u>	<u>Name</u>	<u>Price*</u>	<u>Quantity</u>	<u>Phase</u>
VAS621001A	Matrix Headlight Adjusting Unit	\$ 14,848.04	1	Region based installation process

Porsche Headlight Aiming Tool Questionnaire - VAS 621 001/A



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Matrix Headlight Adjusting Unit

VAS621001A



\$ 14,848.04*

Model Line	X1A - Cayenne E4
Use	Precise adjustment and testing of vehicle headlights.
Workshop Manual	94151600
Supplier	Porsche Special Tools & Equipment (via Maha installation)
Availability	Maha to install – Porsche Center will be contacted
Location	Alignment rack
Note	Installation is required at the Alignment Rack location. The existing floor will need to be cut and modified to accommodate the installation. All concrete/floor work shall be performed by a local contractor and is excluded from the pricing provided above.



Additional information and installation requirements provided by MAHA are included as attachments to this SPTL document.

Review all attached materials carefully prior to installation.

- Overview
- How to measure Headlight Adjustment Place based on Volkswagen Group Requirements
- Measurement sheet
- Foundation plan running rail "Underfloor"

Special Tools and Equipment Information

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Ordering Process:

Special Tools / Testers Website:

<https://porsche-cars-north-america.pointofrentalcloud.com/portal>

To increase security and show prices that may be below the Minimum Advertised Price, Login is required to see/access the storefront. Your Porsche Center will have a NEW single Username and Password for the Porsche Special Tools site.

To streamline the new process, we are using the existing Rental Website for **Rental and SALE** of all Special Tools and PT4G.

Support:

Special Tool:

Open a PRMS ticket. Technical Support >> [Special Tools](#)

Diagnostic Equipment:

Open a PRMS ticket. Technical Support >> [Tester Support](#)

Tool Classification:

★	Servicing and Maintenance
★★	Replacement of Units and Assemblies
★★★	Disassembly of Units and Assemblies
★★★★	Rental Tools
	High Voltage Equipment
	Body and Paint

***All prices shown are valid as of the day of publishing and are subject to change without notice.**

Important Notice:

Technical Bulletins issued by Porsche Cars North America, Inc. are intended only for use by professional automotive technicians who have attended Porsche service training courses. They are written to inform those technicians of conditions that may occur on some Porsche vehicles, or to provide information that could assist in the proper servicing of a vehicle. Porsche special tools may be necessary in order to perform certain operations identified in these bulletins. Use of tools and procedures other than those Porsche recommends in these bulletins may be detrimental to the safe operation of your vehicle, and may endanger the people working on it. Properly trained Porsche technicians have the equipment, tools, safety instructions, and know-how to do the job properly and safely. Part numbers listed in these bulletins are for reference only. The work procedures updated electronically in the Porsche diagnostic and testing device take precedence and, in the event of a discrepancy, the work procedures in the Porsche Tester are the ones that must be followed.

Porsche Cars North America

VAS 621001/A headlight aimer adjustment working bay - needed conditions for accurate installment and measurement results

The headlamp levelling station consists of the footprints for the vehicle, the headlight aiming device and the footprint of the aimer.

Dimensions and Location

The minimum dimensions for the footprint of the headlamp aligner are (L x W) 1.0m x 4.5 m.

Behind this footprint, there should be sufficient space for better operation and handling of equipment.

The headlight testing equipment must be installed on a permanently mounted rail set that ships with the device.

The overhead clearance must be at least 2.5 m according to workplace guidelines.

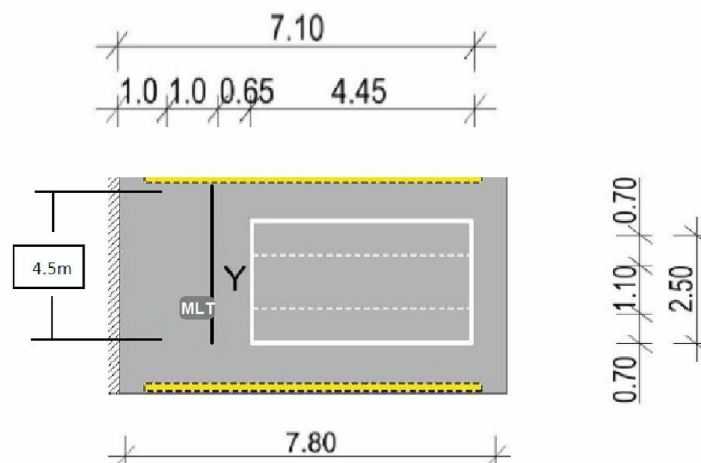
The headlight testing equipment is to be installed in front of the alignment rack in your service area per PCNA requirement. A total width of 4.5m is needed for the below-floor guide rail, for which the front two rollers of the unit ride along. The rear wheel of the headlight testing unit rolls directly on the floor. See section "Below-Floor Rail Preparations" for further details.

Headlight aimer/ Floor level condition

For the correct adjustment of the headlamps it is important that the vehicle standing surface and the surface in the rolling area of the headlamp aiming device are in level.

Headlight adjustment requires a level surface for the vehicle to stand on. (see figure 1.1)

The level of the headlight aimer rolling area , level / unevenness cannot exceed 1mm /m.



Measurements Vehicle (l x W)	7.1m x 2.5m
Clear height	min. 2.5m
Light situation	500 Lux
Room Temperature	18 degrees Celsius

Required Electric
Equipment

110V
Approved VAS headlight aimer

Attention: requested guiding rails length 4.5m. Guiding rails should be installed from one wall side, to be able to have headlight aimer out of the way when not in use and be able to charge headlight aimer at power outlet installed at wall.

Requirements for the system for checking the setting of the headlights

The slopes must not exceed 1.5% and must be equally directed left and right.

The determined inclination is used as the reference value (zero value) for the light setting device during calibration.

Requirements for the installation area / lanes for the vehicle

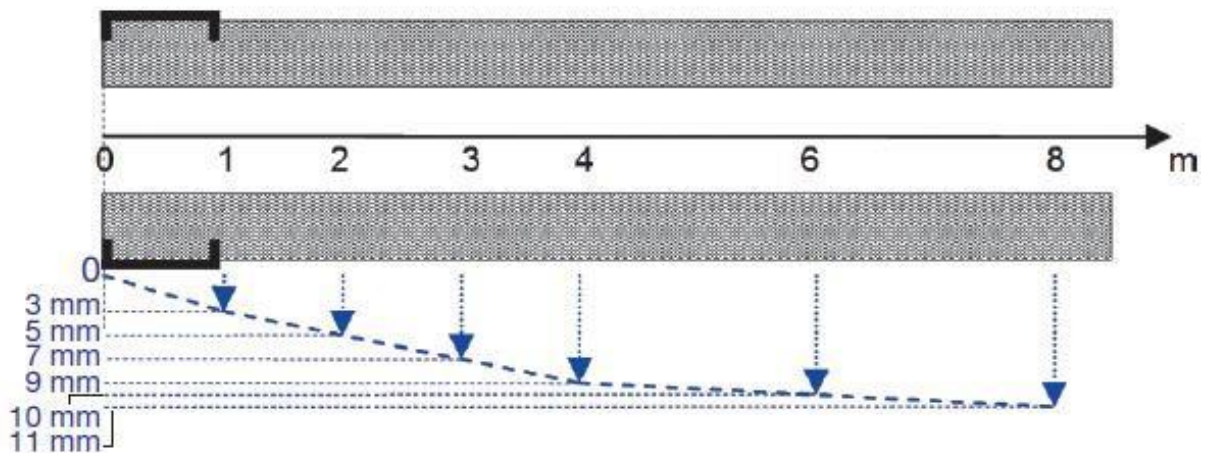
The permissible unevenness of the lanes is shown in the following figure (Figure 1.1)

The values given indicate the total permissible differences between the individual values.

Example: Maximum value at 2m = 5mm deviation Maximum value at 6m = 9mm deviation

When checking whether the installation surfaces meet the level requirements, the left and right lanes are each considered separately.

Figure 1.1

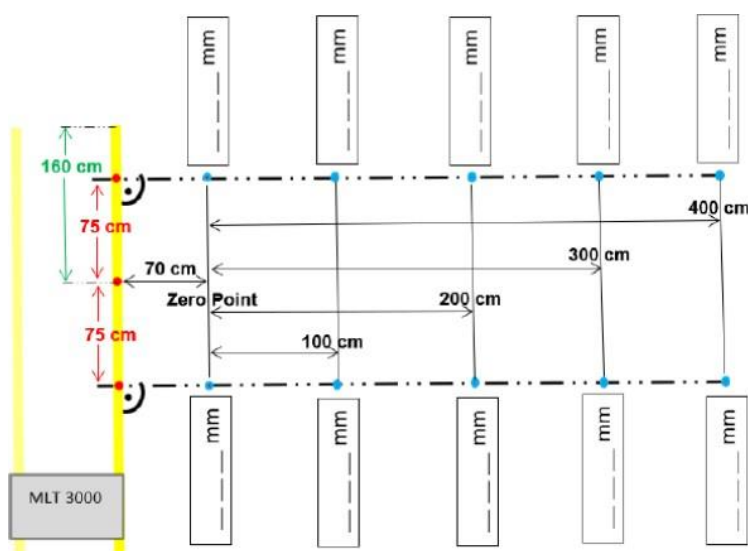


Premeasurement Procedure

Before trench/channel is dug for the below-floor rail, taking a premeasurement of the vehicle standing area is necessary to determine compliance. Attached you'll find the directions for the premeasurement procedure, where using an standard self-leveling laser you will measure multiple points along the alignment rack platforms and fill out the corresponding form (see figure 1.2)

The form is to be submitted in for review and you'll be reached back out to confirm whether the location is suitable. What we are measuring here is the indifference between the points, to calculate the deviation in the vehicle standing area.

Figure 1.2

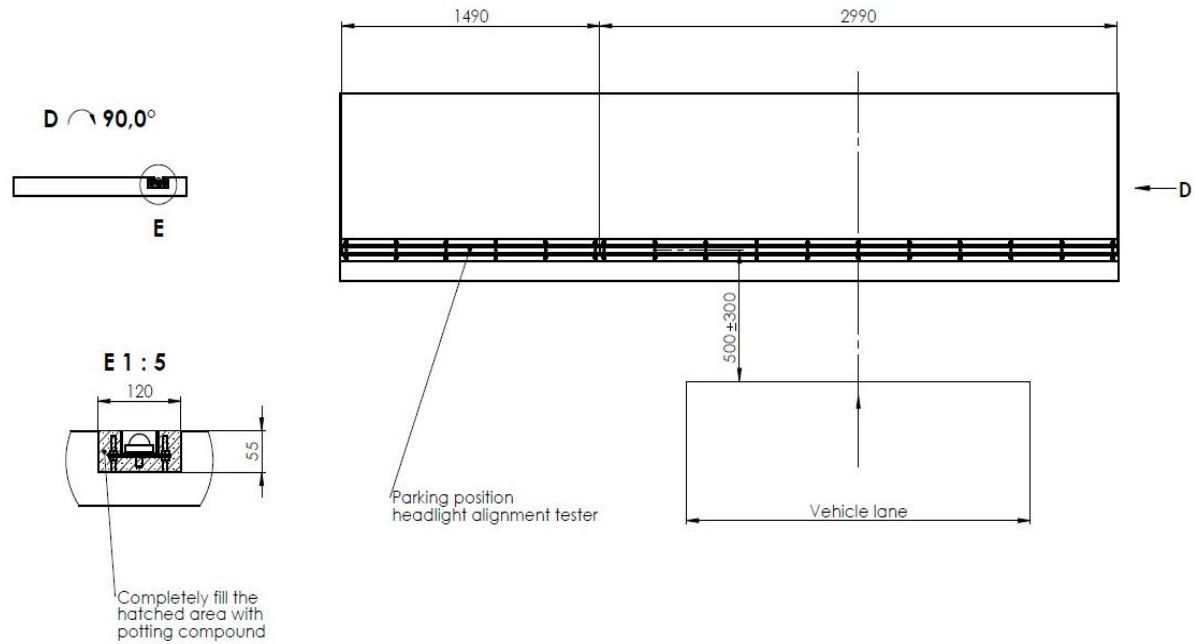


Trench Preparations

The dealer is responsible for making the proper concrete work preparations of the below-floor rail. Please follow the supplied Rail Foundation plan measurements to ensure a smooth installation (see figure 1.3). It is highly recommended to over-dig the bottom of the trench/channel and use a self-leveling concrete to create a flat, even measurement across the trench. The preferred mixture to use for the self-leveling of the bottom of the trench is FastSet All-Crete. Sample pictures are provided below.

The rail is anchored in the trench/channel, and leveled to match that of the top-most surface of the floor. If tile floors are present, the rail is leveled to the top of the tile. After installation and calibration are completed, the dealer will come back and backfill the negative space around the rail, cementing it in place.

Figure 1.3 (All units in millimeters –“mm”)



Concrete Compound to be Used for Self-leveling Trench Bottom:





Examples:



Trench Dug

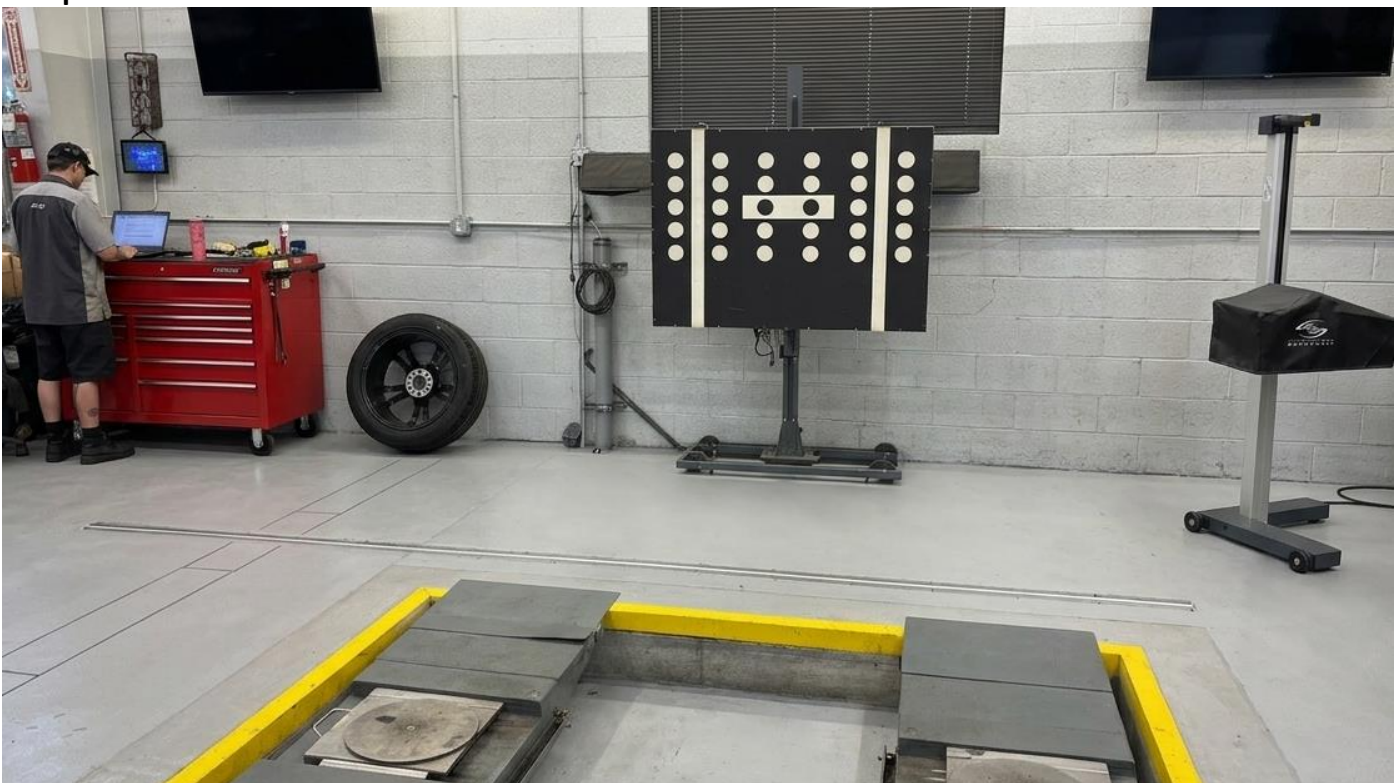


Trench Self-Leveled



Rail Installation

Completed Install:





Special Installation Requirements:

- 1) The equipment should remain sealed in its packaging until the installation crew arrives to decrease the likelihood of hardware and component misplacement.
- 2) The installation bay should be selected and clear of all unnecessary equipment, vehicles, storage containers, etc. before the installation crew arrives.
- 3) Installation, calibration, and training of up to five technicians requires approximately five hours. No other work should be planned in the installation bay during this time. Technician training normally requires one hour.
- 4) One 120VAC single-phase outlet, capable of supplying 15A, must be available in the bay on the day of installation. This can be the same as the wall outlet that will be used to charge the equipment's built-in battery.
- 5) The concrete floor will be drilled at several points to a depth of approximately 40mm for rail installation. Any in-floor obstructions such as heating elements, water pipes, underground electrical lines, or any other in-floor obstruction that can be damaged by drilling or which may cause a hazard to the installation crew must be clearly marked. Neither Maha nor the installation crew will be responsible for damages caused by drilling into an unmarked obstruction.
- 6) A shop vacuum furnished by the customer, when available, will help to decrease health risks associated with concrete dust created during the floor drilling steps and will allow the installation crew to leave the workspace clean.
- 7) Customer should provide a vehicle with working headlights for technician training. Technicians should already be familiar with Porsche adjustment procedures and any Porsche software relevant to headlight adjustment. Neither the installation crew nor Maha Technical Support will be able to provide training on Porsche software or procedures that are not a part of the VAS 621001/A headlight aimer equipment.
- 8) If you are unable to install the unit with the below-floor rail or in front of your alignment rack, please open a Special tools PRMS Ticket and you'll be reached out to shortly.

How to measure Headlight Adjustment Place based on VAG Requirements

Preliminary

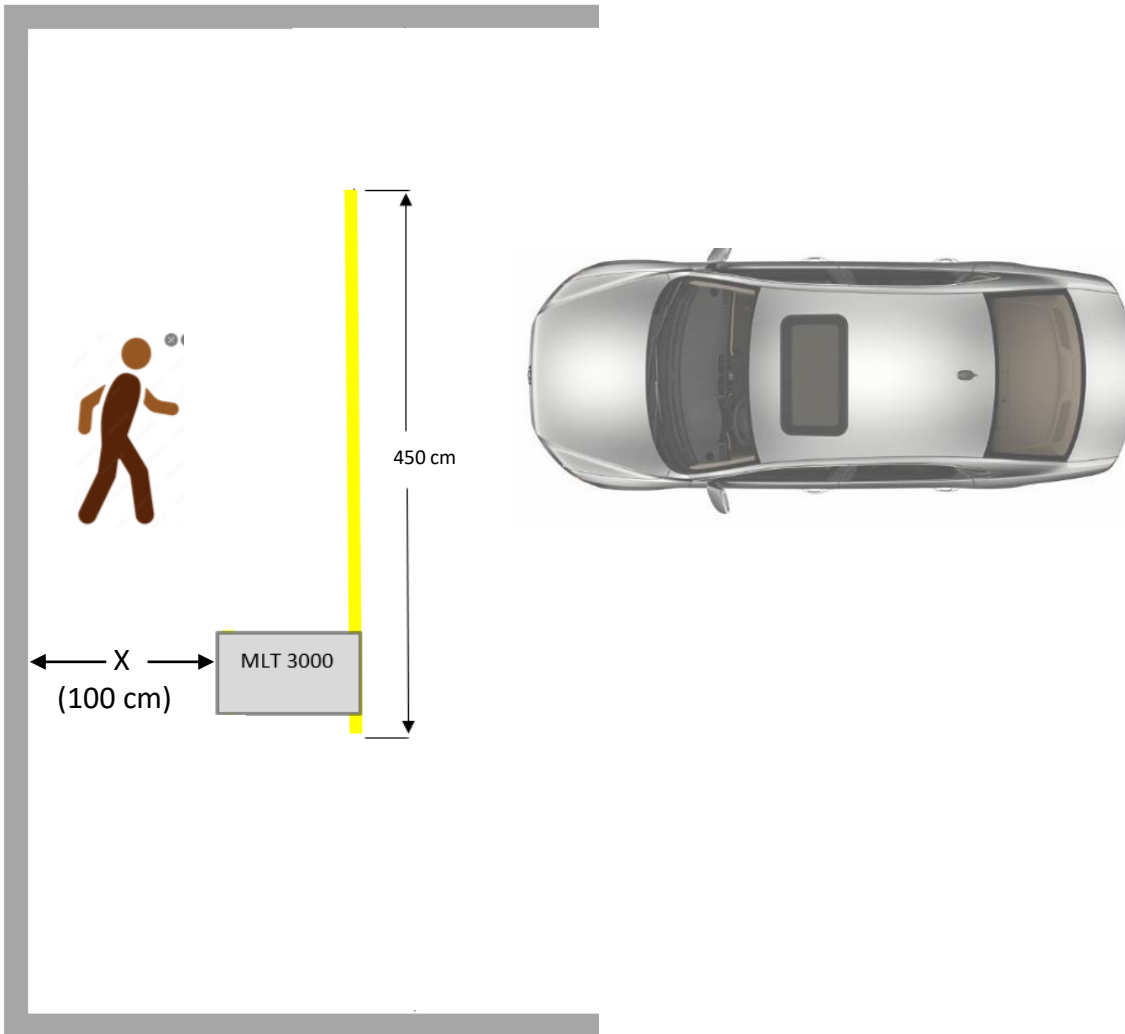
- The following instructions explain how to measure a headlight adjustment place based on VAG requirements
- The division of the inch unit is not small enough, so the metric system is used. Most commercial tape measures have both units
- The used line laser is a commercial self-leveling laser. Every similar laser is useable. The MAHA calibration laser is an industrial high precision laser.
- Deviations between both lasers are possible and can influence the result
- The headlight aimer adjustment place should be as much as possible even
- An inclination of the area up to +/- 1.5% in lengthwise and crosswise is allowed

Preliminary

- Areas that are aligned to a water drain are very often out of tolerance
- The wheel alignment lift is mostly a good alternative location to meet the VAG required tolerances

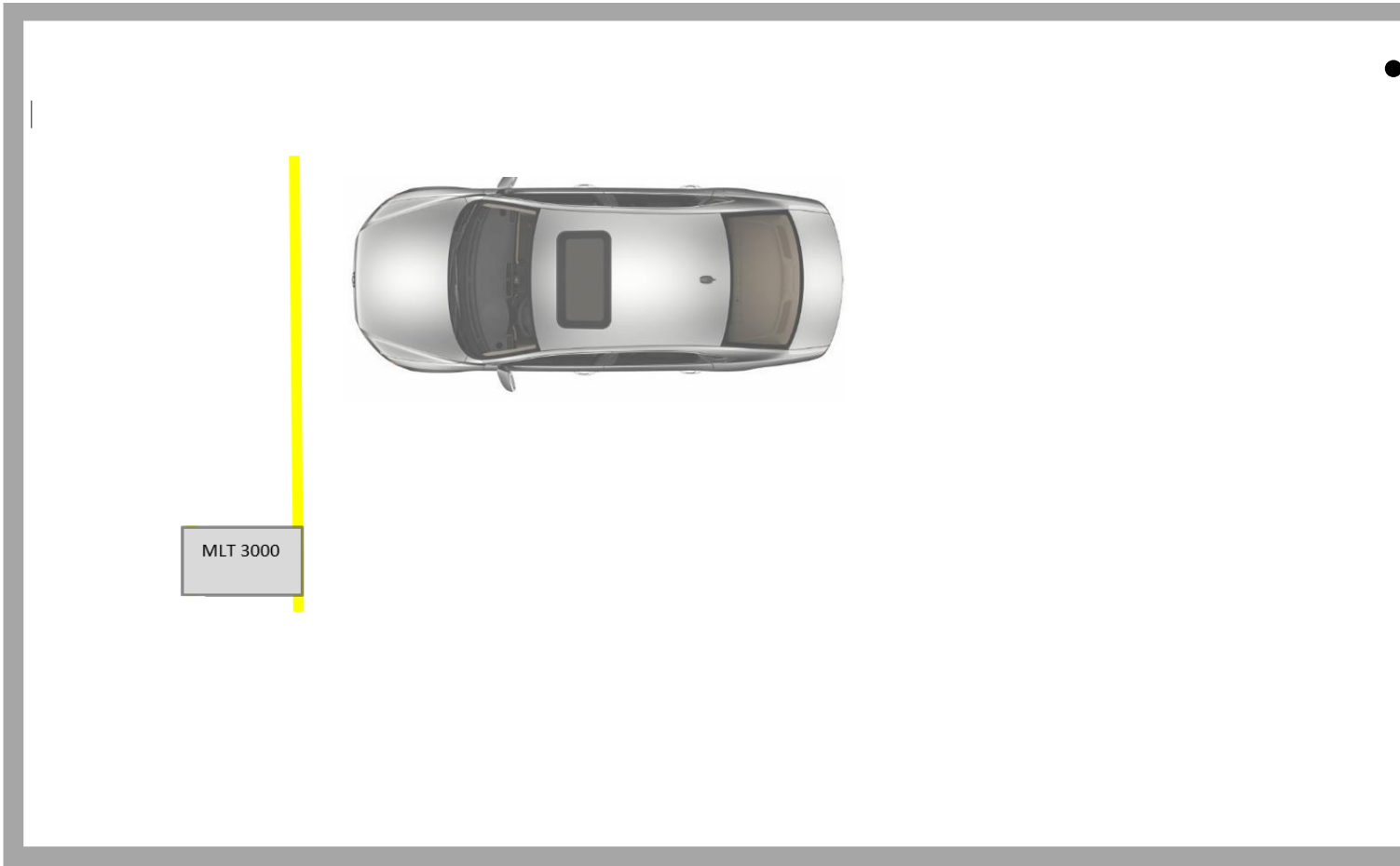


Pre-Measurement



- The distance (X) of 100 cm of the operator area is a recommendation.
- Note local regulations EX: emergency exit
- Tape in the distance A) a tape parallel to the wall on the floor and note the value
- Length of the tape min. 450 cm

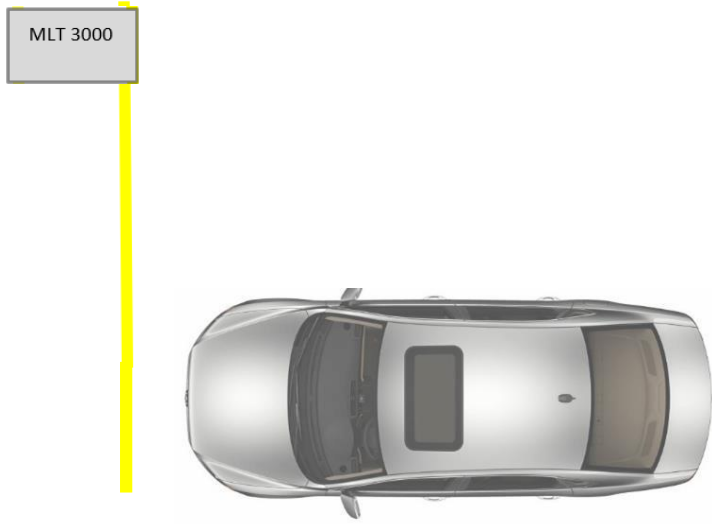
Pre Measurement



- Parking Position of the MLT could be left or right

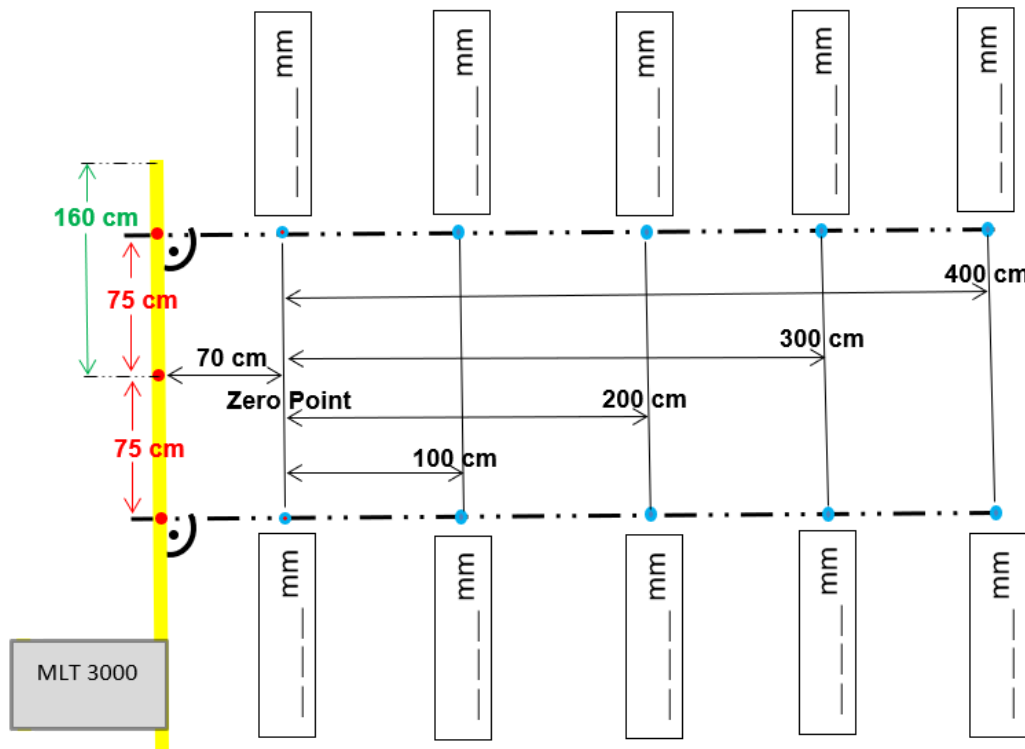
Pre Measurement

MLT 3000

A top-down view of a silver car parked in a rectangular space defined by grey lines. A vertical yellow line is positioned to the left of the car, extending from the top boundary to the bottom boundary. A grey rectangular label with the text 'MLT 3000' is positioned above the yellow line.

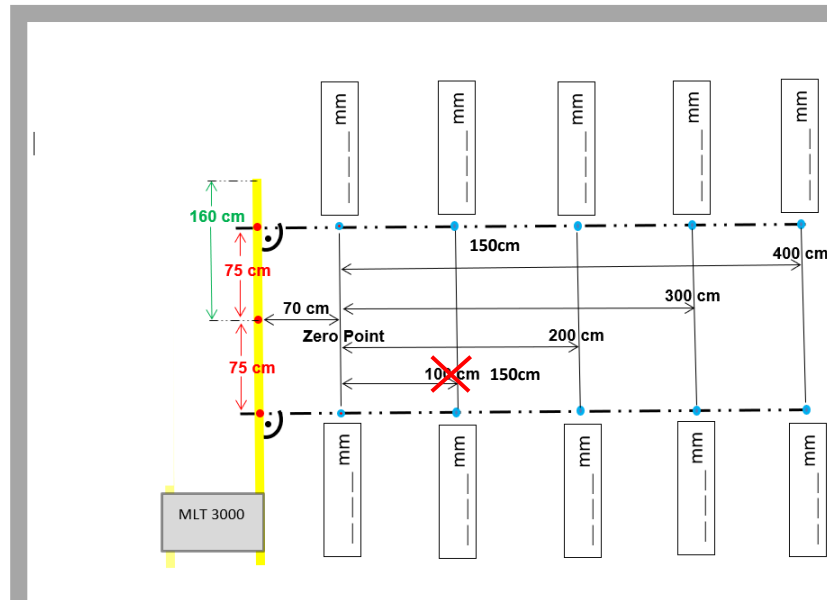
- Parking Position of the MLT could be left or right

Pre Measurement



- Mark 160 cm on the tape opposite the MLT parking position. That point is the vehicle center point
- Measure and mark on the tape from that center point 75 cm to the left and right
- Position the laser on the left 75 cm points and project square forward
- Mark in a distance of 70 cm the zero point left
- Set a mark in a distance of 100 cm, 200 cm, 300 cm, and 400 cm beginning from zero point
- Do the same for the right side

Pre Measurement



Avoid taking
measurements
here



- If measurement points fall onto obstruction of alignment rack (raised platform for example), you may adjust the measurement point forward or back and notate the new measurement distance.
- Be sure to adjust BOTH sides to match, and all subsequent measurements are still taken from the initial zero point

Pre Measurement

- Position the self-leveling laser on a position that the laser covers the complete vehicle standing area
- Don't move the laser for the next measurements
- Measure now at the position zero, 100 cm, 200 cm, 300 cm and 400 cm all distances from the laser to the floor/alignment rack platform.
- Try to keep the measuring tape upright
- Take the reading always at same point of the laser e.g. upper edge, lower edge or in between
- Note all values on the attached data sheet



Pre Measurement

Example Taking Measurements on points along alignment rack:

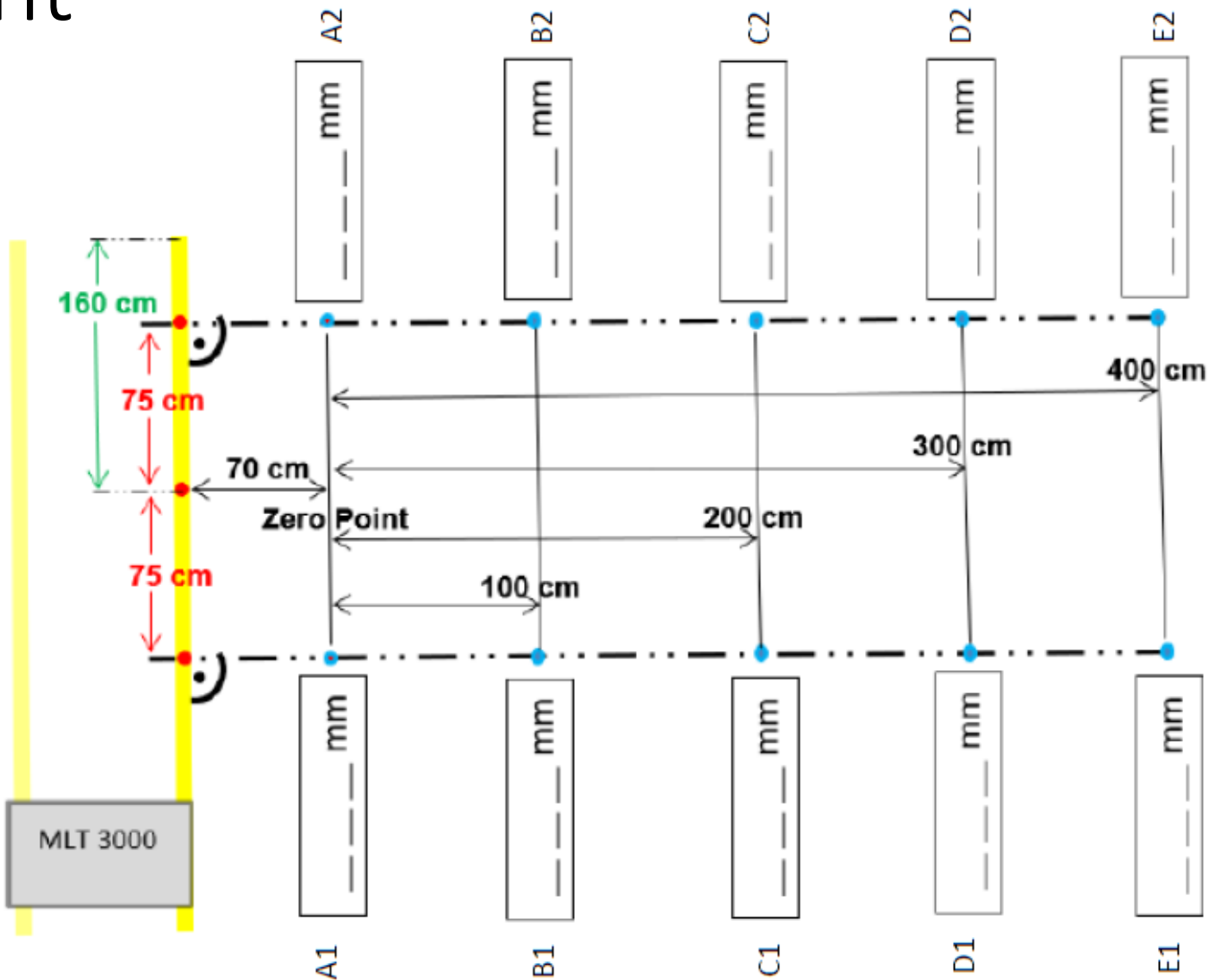


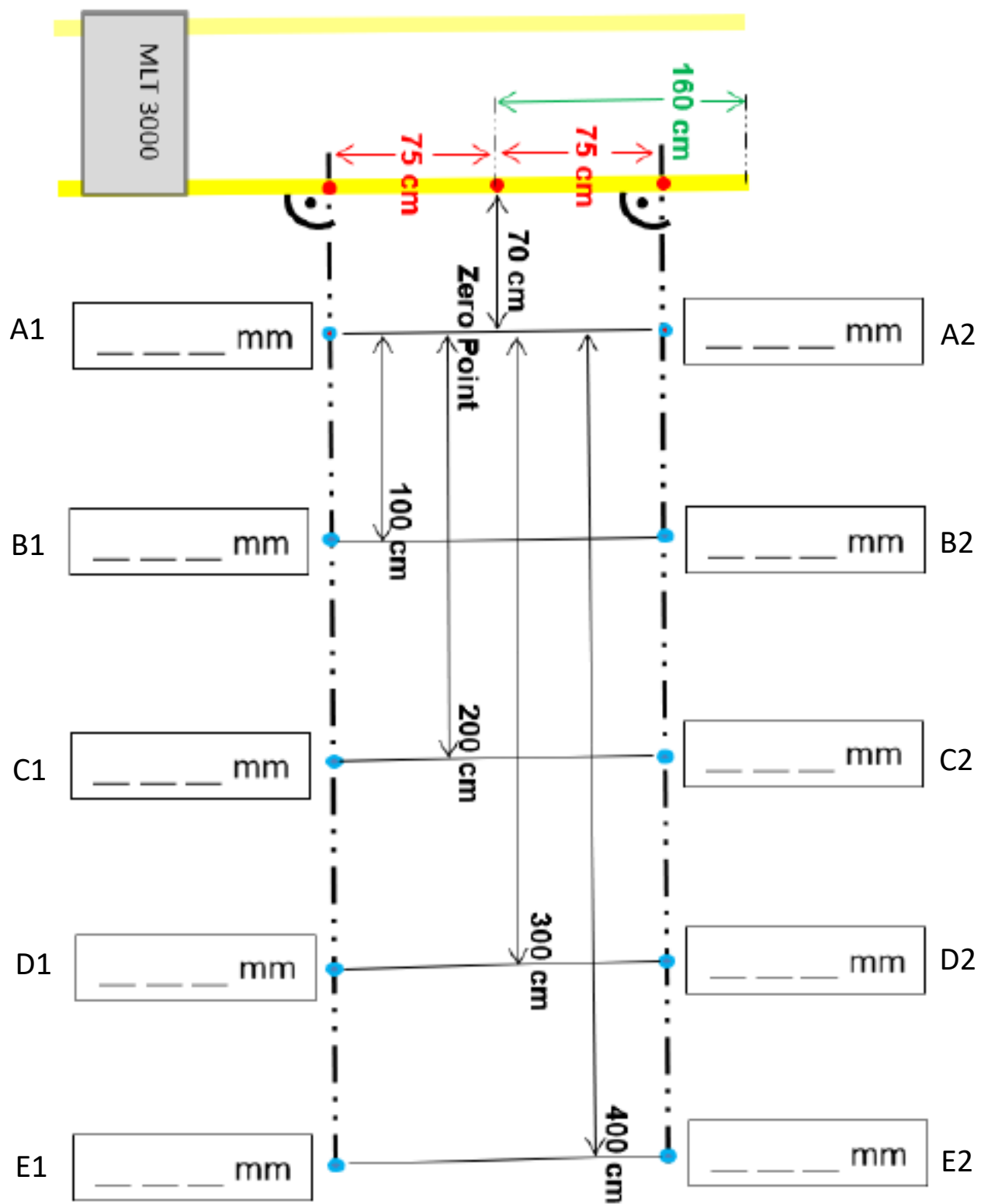
You can see the laser in the middle of the alignment rack platform remains in same position, and measurements are taken along all the points and the measurements are documented. You will be performing the same with a tape measure.

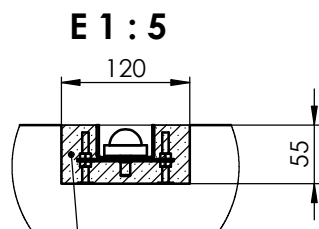
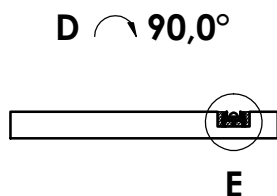
Reminder: What we are trying to measure here is the indifference between these multiple points. This allows us to visualize and measure how the floor/alignment rack is sloped/banked.

Pre Measurement

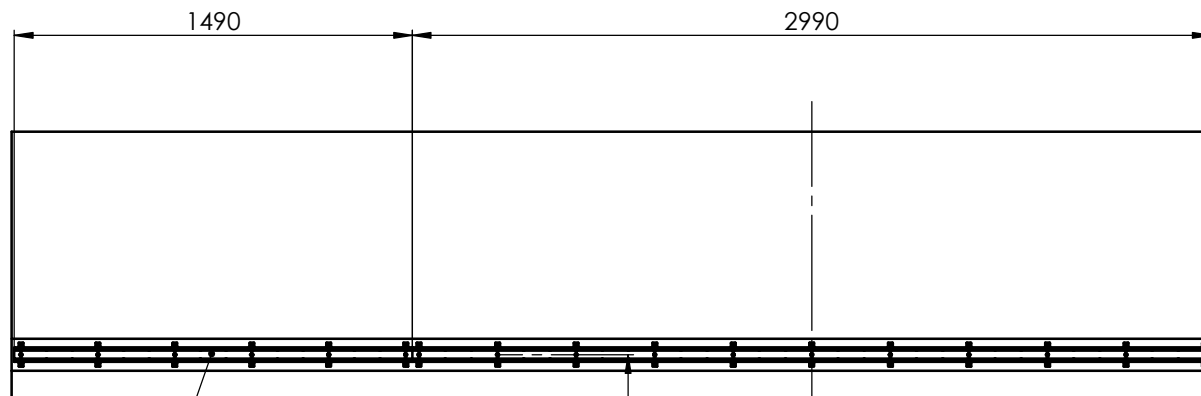
- Again, noting all measurements down on fill-out/MS form



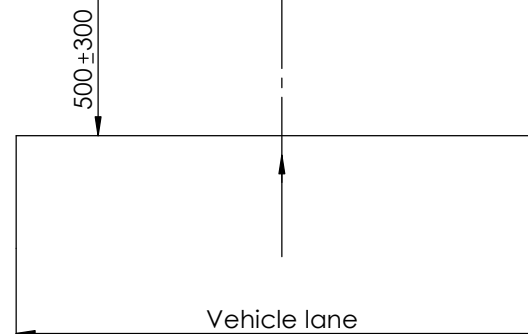




Completely fill the hatched area with potting compound



Parking position
headlight alignment tester



DIMENSIONS ARE IN MILLIMETERS For Measurements w/o TOLERANCES DIN ISO 2768-mK (E) applies:					Size ISO 14405 (E)				
Angle Measurements Tolerances in Degrees and Minutes for length increments measured on shorter angle length					Note copyright as per DIN ISO 16016		Surface	unchanged	
					General Tolerances		Minimum yield strength Re in N/mm²		Basic-Material
Length Measurements Tolerances in mm for total length increments measured					DIN ISO 2768-mK		Document Type		Basic-Materialnumber
					Scale		master drawing		Change Number
Up to 10	Over 10 to 50	Over 50 to 120	Over 120 to 400	Over 400	Weight in kg		100718		Office
±1°	±0°30'	±0°20'	±0°10'	±0°5'	16713.306		500		
Designation Foundation plan running rail "Underfloor"					Material Number		Revision	Document Number	Version
					1404285		00	10019304	Sheet 2 of 4
Date, Issue					Date, Check		Date, Release		old Material-Number
					2021-3-31 TAUST				