



**TechnoVector Group**

Precision in Motion



# **TechnoVector 8 Contactless: SmartLight / Velox**

Wheel Alignment Systems

# OUR HISTORY

**1997**

The first TechnoVector wheel aligner was produced.

**2005**

Production of the TechnoVector 5 CCD wheel aligner with PRRC (Precise Rolling and Runout Compensation) technology.

**2009**

The company released the first 3D wheel aligner for cars: TechnoVector 7 with the WideScope technology.

**2012**

Introduction of the mobile wheel aligner TechnoVector 6 with 3D Free Motion technology allowing smaller workshops to take advantage of 3D technology.

**2013**

The first worldwide 3D wheel aligner for truck production started

**2016**

The five-camera 3D mobile wheel aligner for cars & trucks and the three-camera mobile aligner for cars were released.

The five-camera 3D mobile wheel aligner for cars & trucks and the three-camera mobile aligner for cars were released.

**2018**

Manufacturing of the new and unique Contactless wheel aligner TechnoVecotor 8, with SmartLight technology started.

**2019**

Production of modern and high-tech machines for automobile wheel balancing began.

**2021**

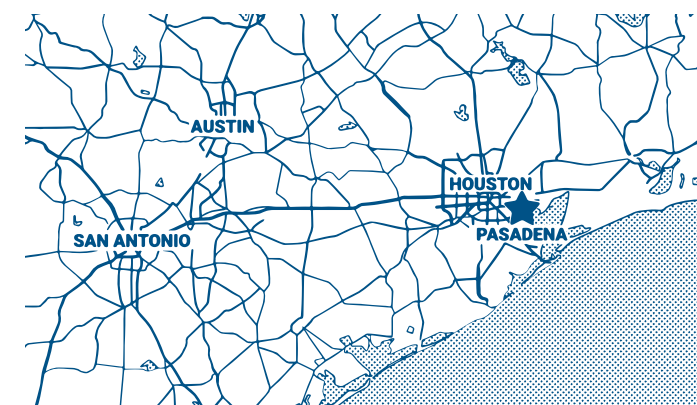
The world premiere of a contactless solution for heavy-duty truck alignment and express angles check.

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# GLOBAL PRESENCE



- Distribution Network
- 📍 Official Representation



## TECHNOVECTOR INC.

Address: 10565 Red Bluff Rd. Pasadena, TX 77507 USA  
Status: Official representation in the USA  
[technovector.us](http://technovector.us)

## TECHNOCAR LLC.

Address: 55 Zheleznodorozhnaya St. Tula, Tula Region 300020 Russia  
Status: Headquarters and main production  
[technovector.ru](http://technovector.ru)

## TECHNO VECTOR BULGARIA LLC.

Address: 21 Oborishte St. Sofia, 1504 Bulgaria  
Status: Official representation in Europe  
[technovector.com](http://technovector.com)

# WHAT WE PRODUCE

## MANUFACTURING

- Technovector is an ISO 9001:2015 certified production with facilities of 8,000 m<sup>2</sup> spread across a campus of 20,000 m<sup>2</sup>.
- All the main components of Technovector wheel aligners, such as cameras, consoles, measuring blocks, metal parts, etc., are designed by TechnoVector Group and manufactured at the company's production facilities.
- The Equipment made in Russia or the EU.
- There is an extended three-year warranty on most products.

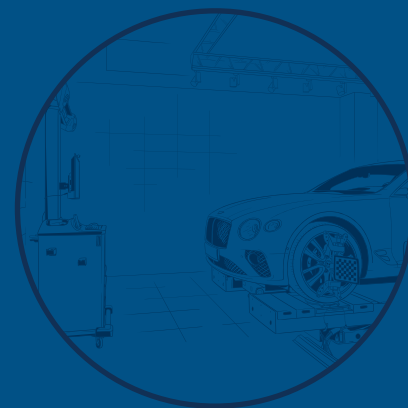
## INNOVATIONS

Continuous improvement of existing technologies and research into new principles for measuring wheel alignment has put us among the industry leaders for a decade. Ground-breaking technologies such as PRRC, WideScope, and SmartLight have become unrivaled worldwide. Technovector produces all types of wheel alignment systems: 3D, CCD, and Touchless.

## TECHNOVECTOR 7

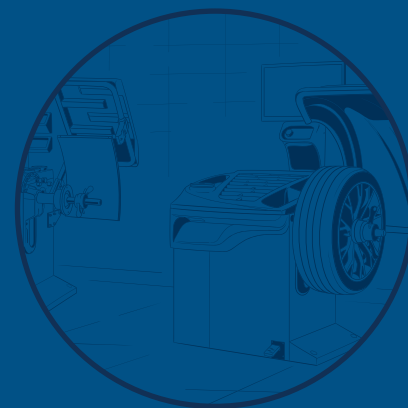
### 7202 / 7204 – TWO–/ FOUR–CAMERA MACHINE VISION WHEEL ALIGNMENT SYSTEMS WITH WIDESCOPe TECHNOLOGY

Angle readings at any rack height and distance up to 385" / 9.75 m.\*  
7204 - four-camera model.  
Two-camera model within an effective range of working heights along with the system cost-efficiency.  
Real-time accurate readings.  
Ultra-compact installation without loss of accuracy and process reliability.  
Automatic rack incline correction.



## TECHNOVECTOR IPRO BM WHEEL BALANCING MACHINES IPRO BM SERIES

Short measurement cycle and high accuracy readings.  
Automatic ultrasound width detection for steel-rim wheels for all models.  
High degree of automation of measuring and balancing processes.  
A wide range of wheel and rim imbalance and geometry determining tools.  
Ergonomic design and system reliability.



## TECHNOVECTOR 7 TRUCK&BUS 7204HTS AND 7204HTMC FOUR-CAMERA MACHINE VISION WHEEL ALIGNMENT SYSTEMS WITH WIDESCOPe TECHNOLOGY FOR HEAVY-DUTY VEHICLES

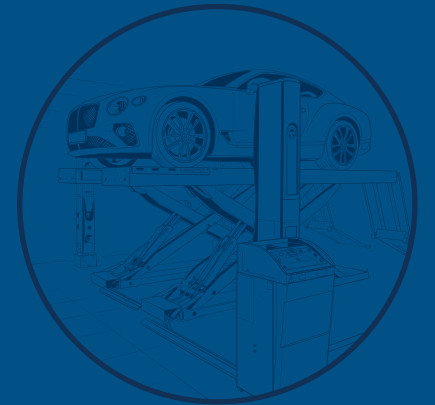
Most effective and convenient 3D wheel aligner for heavy-duty trucks on the market.  
For all heavy-duty vehicles with wheelbases of up to 630 inches / 16.00 m.  
Up to four-axle simultaneous rolling compensation and live readings.  
TechnoVector 7 Truck&Bus Mobile, which is the first in the industry 3D mobile solution for heavy-duty vehicles.



## SMARTLIGHT

### CONTACTLESS WHEEL ALIGNMENT MACHINES FOR PIT OR LIFT INSTALLATIONS

No wheel adaptors or targets on wheels.  
Automatic readings in seconds. Express alignment inspection or full vehicle adjustment.  
More room in front and back of the vehicle.  
Complete and accurate full alignment check and adjustment process. Wheel Bases from 79" / 2.00 m up to 154" / 3.90 m. Automatic rear-measuring-tower aiming.  
Several alignment bay configurations available.



## SMARTLIGHT TRUCK&BUS

### CONTACTLESS WHEEL ALIGNMENT SOLUTION FOR HEAVY-DUTY VEHICLES

The first in the industry contactless solution for heavy-duty trucks.  
All the benefits of SMARTLIGHT technology for express alignment inspection and total adjustment of heavy vehicles.  
Rear automatic movable columns for multi-axle measurement and adjustment.



## VELOX

### CONTACTLESS WHEEL ALIGNMENT EXPRESS CHECK MACHINES

Contactless technology for an express alignment inspection.  
Automatic and accurate readings in seconds.  
Four-column configuration for a full alignment check and two-column system for tire-wearing angles inspection.



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# MACHINE VISION SYSTEMS INTRODUCTION

## TECHNOLOGY

Most advanced and up-to-date technology, based on new wheel alignment measurement principles. The system measures the desired parameters of wheel alignment angles using computer (machine) vision. Readings are taken by processing reflected radiation, which the system's projectors emit to the vehicle's wheels. Radiation pulses, which are reflected from the wheels, are processed by the system's video cameras. Video cameras are built using CMOS technology. Reflected radiation processing (wheel images) allows the relative position of vehicle wheels to be calculated with high accuracy. Measurement results obtained with video cameras are processed using a Windows-operated computer.

## OUR MACHINES

- Depending on the model and purpose, a system can have two or four measuring towers. Pit or lift configurations are available; short towers with a pair of video cameras and a projector, or high columns with two pairs of cameras and two projectors each are used.
- Each pair of video cameras and a projector process the corresponding wheel position at the time.
- The system allows to receive all wheels simultaneous compensation and accurate live-data-reading.



## SMARTLIGHT UNIQUE, CONTACTLESS WHEEL ALIGNMENT MACHINES FOR PIT OR LIFT INSTALLATIONS

- Full alignment check and complete adjustment process, with toe, camber & castor angles on a user-friendly printout.
- No wheel adaptors or targets are attached to wheels, saving time during the process, and avoiding scratches on rims.
- Automatic readings in seconds.
- More space in front and back of an alignment bay.
- Wheel Bases from 79" / 2.00 m up to 154" / 3.90 m.
- Automatic rear-measuring-tower aiming.
- Several alignment bay configurations are available.
- Fast and accurate both vehicle axle readings for just one forward runout compensation roll.
- A complete vehicle database of the US market.

## VELOX CONTACTLESS WHEEL ALIGNMENT EXPRESS-CHECK MACHINES

- Express full alignment check, or express tire wearing angles inspection.
- No adaptors or targets are attached to wheels, saving time during the process, and avoiding scratches on rims.
- Fully automatic readings in seconds.
- Wheel Bases from 79" / 2.00 m up to 154" / 3.90 m.
- Automatic rear-measuring-tower aiming.
- Drive-through configuration.
- Fast and accurate both vehicle axle readings for just one forward runout compensation roll.
- Absolute system accuracy and reliability.
- A complete vehicle database of the US market.



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# FULL ALIGNMENT INSPECTION OR EXPRESS-CHECK IN SECONDS

## TECHNOLOGY

- Increase alignment bay profitability and customer loyalty with fast and accurate measurement of every vehicle.
- All basic alignment angles, including toe, camber & castor angles, can be taken and compared to vehicle specification in a few seconds upon automated car presence detection.
- Durable and accurate live readings during the adjustment procedure.



## AUTOMATIC VEHICLE RECOGNITION

- Constant tracking of vehicle wheels in the field of view of measuring system cameras.
- Upon detection of a car, an aligner automatically starts an alignment parameters reading.
- For an existing database record, a vehicle model and customer data are filled out automatically. Based on the vehicle registration record and next VIN matching \*, a vehicle model and appropriate specification are selected.

\* service details may vary depending on the country.

## AUTOMATIC REAR MEASURING TOWER AIMING

Increased wheelbase range of measured vehicles compared to competitors. The software automatically detects the position of the rear axle wheels, and the measuring system's rear towers are driven by specialized servo motors to aim cameras at the vehicle's rear wheels.



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# THE SOFTWARE / THE POWERFUL AND RELIABLE ALIGNER CONTROL TOOL \*

\* Runs under Windows 10



## MOTORDRIVEN

- Live data processing and readings display. Easy remotely op-erated using system color indicators.
- Readings are automatically compared with OEM vehicle specifications.
- Quick program modes access: Database View; Target Setup & Rolling Compensation Mode; Reading Mode; 3D Adjustment; 3D visualization; 2D Adjustment; 2D visualization; Report View.
- Aligner program database for 55000+ includes OEM wheel alignment specifications, tire pressure specifications, 3D animation, adjustment diagrams & images.
- The Electronic Help system contains thorough data on working with the wheel alignment machine and software: video manuals for working with equipment and program, adjustments data, diagrams, images, video, and 3D animation.

Extremely fast readings refresh. The software keeps up with the camera's live data speed of 40 frames per second. Multiple target detection passes allow operation in extremely bright bays. The multithreaded architecture utilizes all the capabilities of modern multi-core processors. Scales correctly on every modern display, including 4K monitors. All the screens are preloaded to ensure that there are no pauses during readings & adjusting.

- Animated 3D model of a generic car chassis. The wheels positions are illustrated according to measured values of toe, camber & caster. The adjustment mode has several views: for each wheel, for each axle, general view, geometry view, and a 2D mode.
- The software utilizes the latest version of the complete US local market vehicle MOTOR Driven™ database. The choice of a vehicle model by its VIN eliminates operator error when choosing a specification. New illustrated OEM instructions for adjustment procedures. Regular database updates are available through direct download. The software allows adding an unlimited amount of custom specifications and export/import them.

- The software employs all the modern techniques to improve the accuracy of calculating targets positions in 3-dimensional space. Multiframe smoothing reduces data instability due to vibrations and lighting conditions yet swiftly reacts to any significant changes. The software automatically detects lift movement during adjustment and corrects the live values if the lift skews. Two readings coordinated systems are supported: calibrated horizon and vehicle plane. Additional jacking wheels mode for adjustment or runout compensation.
- 3D gauges during the adjustment procedures allow better visualization of measured wheel alignment values. Live 3D performed data. Software-generated Print-outs can include 3D rendered images illustrating positions of wheels before and after the adjustment.

Default modes for compensation, measurement, or adjustment could be selected as well as several other fine-tuning for adjustment, compensation and measurement modes. Statistics screen with valuable information about wheel aligners productivity: how many adjustments were made over a given period, what was the average adjustment time, etc. Tire pressure tables for most of the models in the database.

- An intuitive workflow that utilizes only four navigation buttons at the bottom of the screen. Helpful images and OEM illustrations to remind the technician of procedure actions that need to be performed. All orders data is stored and can be reviewed at any time. All the navigation through most of the program can be done using hotkeys on the remote control or the keyboard.
- Web-camera program support to assist the driver in positioning the vehicle on the lift. The print-out setup allows to select one of the multiple templates and set up promotions, company logo, etc. on print-out, as well as the ability to send reports by email and SMS.
- Automatic screen transitions could be set up. For example, the software automatically detects when the runout comp starts and proceeds to the next step

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## SMARTLIGHT DUAL

- Four-column double-deck contactless aligner for installation on a rack for a total alignment procedure or express angles check at all lift operating heights.
- Alignment results in seconds. Fully automatic express-check mode on the lowest rack height.
- Highly-accurate live toe, camber & castor readings at any lift position.
- Unprecedented in the industry, a range of tested wheelbases from 79" up to 154".
- Automatic rear-measuring-tower aiming.

## SMARTLIGHT

Same as SMARTLIGHT DUAL, except the system has short measuring columns and can be installed on a pit or a flush floor for a total alignment procedure, or express angles check.



## VELOX / VELOX EXPRESS

- The unique tool, based on new measurement principles. Four or two-column (EXPRESS) wheel alignment check system.
- Alignment results in seconds. Total alignment express-check for the four-column version. Tire-wearing angles express-check for the cost-effective two-column machine.
- Drive-through bay configuration for nonstop angles checks increases the number of adjustments for an alignment bay.





# WHAT'S IN THE BOX

## OPTIONAL

- The 32" monitor can be supplied instead of the standard one and can be mounted on a regular bracket.
- Barcode & QR-code reader for automatic vehicle specification recall upon VIN reading.

## MOBILE DEVICE SUPPORT

- Mobile Apps are available for free downloading from Android Google Play or iOS App Store.
- Live readings on the aligner's mobile device screen. Main Mobile Apps features are: supporting a device as a remote control; saving and displaying aligner readings and/or adjustment results in a customer's device, viewing and exporting of reports as an HTML or PDF.
- Offline mobile features: obtaining an alignment report using a QR code on the aligner screen or printout; viewing of a complete adjustment report in a mobile device browser upon QR-code scanning without an additional application on the device or internet connection.



### 1] Machine Vision System

SMARTLIGHT: four double-deck measuring columns \*  
DUAL Version or short measuring columns; VELOX: four or two (EXPRESS) short measuring columns

### 2] Computer Console

Wide cabinet with four tool drawers and printer shell; electronic PC-based unit with Windows 10 operating system; 21.5" or above LCD monitor with universal telescopic monitor bracket for LCD position adjusting (height and inclination angle).

### 3] Electronic Unit

Powerful and reliable Windows 10 OS desktop.

- 4] Steering Wheel Holder & Brake Depressor
- 5] Set of Turn Tables \*
- 6] Remote Control Kit
- 7] Manual

\* Only with SmartLight models



## COMPUTER CONSOLES P-SERIES

AVAILABLE COLORS  
RAL 7011  
RAL 3002  
RAL 5010

## SPECIFICATION

	SMARTLIGHT DUAL	SMARTLIGHT/ VELOX	VELOX EXPRESS
Number of camera	18	10	4
Camera type	Industrial Grade HD high-precision optical RAW cameras		
Number of projectors	8	4	2
Configurations	Cabinet-mounted or Wall-mount		
Cabinet type	P-series		
Applicability	Lift	Floor or Pit	
Max wheel diameter	40'		
Power source	115 VAC single-phase 50/60 Hz		
Weight net/gross	1,188/785 lbs	867/627 lbs	680/475 lbs
Volume	126 ft3	73 ft3	60 ft3



