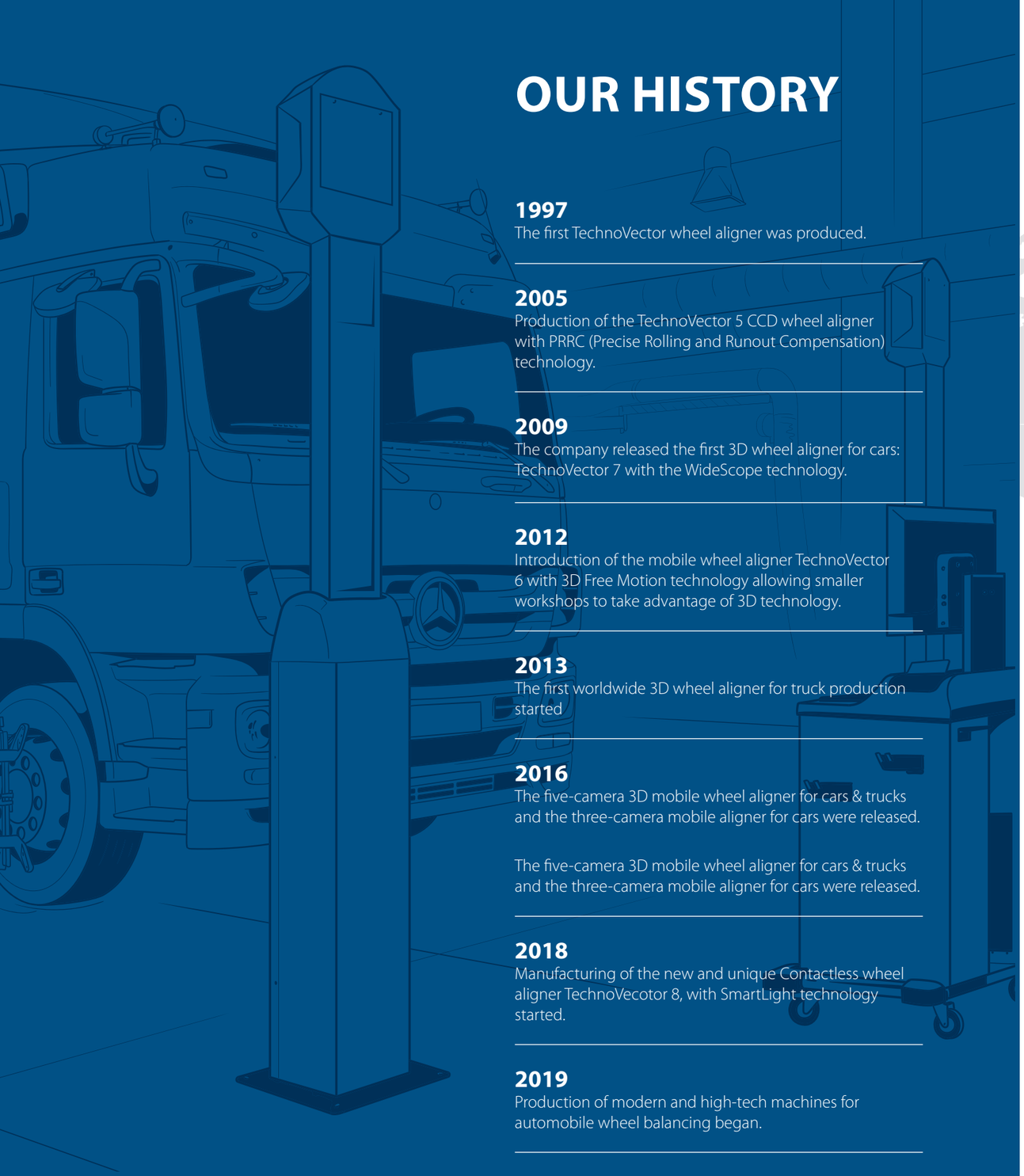
TechnoVector Group

Precision in Motion

TechnoVector 7 Truck&Bus / TechnoVector 7 Truck&Bus Mobile

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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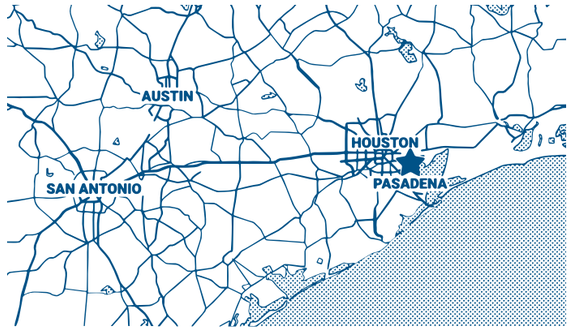
GLOBAL PRESENCE



TECHNOVECTOR INC.

USA 10565 Red Bluff Rd. Pasadena, Houston, TX, 77507 Status: Official representation in the USA
technovector.us

TECHNOVECTOR BULGARIA LLC.

21 Oborishte St., 1504 Sofia, Bulgaria
Status: Headquarters and main production

technovector.com

WHAT WE PRODUCE

MANUFACTURING

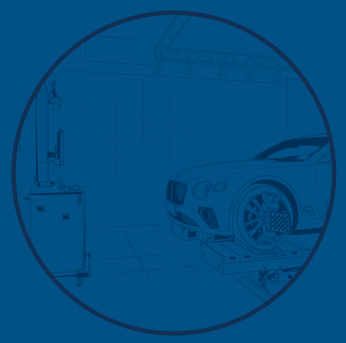
- Technovector is an ISO 9001:2015 certified production with facilities of 8,000 m^2 spread across a campus of 20,000 m^2.
- All the main components of Technovector wheel aligners, such as cameras, consoles, measuring blocks, metal parts, etc., are designed by TechnoVector Group and manufactured at the company's production facilities.
- The Equipment made in 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.

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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.

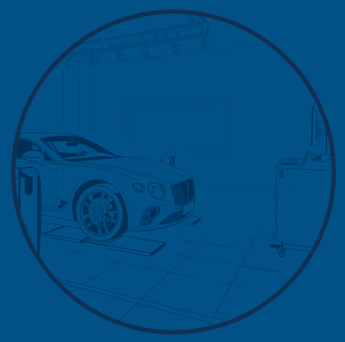
SMARTLIGHT TRUCK&BUS

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.

MACHINE VISION SYSTEMS INTRODUCTION

TECHNOLOGY

Traditional 3D Technovector alignment system for heavy-duty truck alignment. Decades of proven machine vision technology combined with affordable pricing. The implementation of the system technology measures truck wheels' angular parameters using cameras that analyze reflected images from attached-to-wheel targets. Video cameras are built using CMOS technology. Reflected radiation processing (wheel images) allows for calculating the relative position of vehicle wheels with high accuracy. Measurement results obtained with video cameras are processed using a Windows-operated computer.

OUR MACHINES

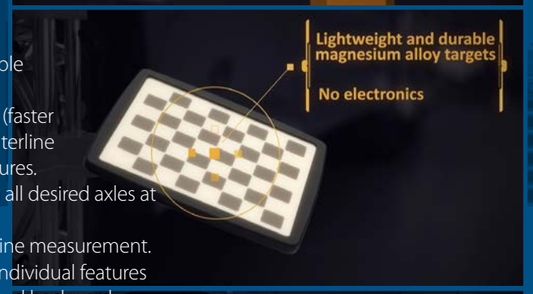
Measuring Systems with Four or Two WideScope high-resolution industrial-grade cameras fixed on system measuring columns, installed in front of a vehicle with high-accuracy image targets attached to the truck wheels.

Digital high-resolution WideScope cameras with embedded IR backlight enable the TechnoVector™ software to track and process targets' accurate spatial positions in real time.

A unique system configuration allows simultaneous rolling compensation and tracking of all truck or semitrailer wheels.

TECHNOVECTOR 7 TRUCK&BUS AND TECHNOVECTOR 7 TRUCK&BUS MOBILE ALIGNERS

- One-of-a-kind four-camera machine vision wheel system for alignment of heavy-duty vehicles.
- Fast and accurate measurement of all kinds of truck, semi-trailers & buses.
- Unique WideScope technology allows readings and adjustment on Truck and Bus wheelbases of up to 630 inches.
- Lightweight and compact design of adaptors and targets. Self-centering 15" - 28" rim range wheel adaptors with an adjustable central carriage are compatible with most heavy-duty vehicles.
- Fast and accurate multi-axle readings for just one forward roll (faster compensation), measurement relative to a frame or a vehicle centerline and drive-through or backward truck running measuring procedures.
- Wheel adaptors and targets can be mounted onto wheels on all desired axles at the same time.
- Frame gauge for quick and accurate vehicle frame reference line measurement.
- Several alignment procedure configurations allow for use of individual features of a specific alignment bay. Dead-end or drive-through forward and backward truck-running bay compositions available.
- Mobile system version for use of aligner on several bays.
- A complete vehicle database of the US market.



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MACHINE VISION BENEFITS FOR HEAVY-DUTY WHEEL ALIGNMENT

- Adapters and targets installed on moving parts of a vehicle contain no electrical components.
- Does not require constant recharging of system components.
- All sensitive electronics are located away from moving parts of vehicles and out of the mechanic's reach.
- Requires no complex calibrations during operation or in the event of the fall of a target.
- Absolute system accuracy and reliability.

WIDESCOPE

Unique WideScope technology allows readings and angles adjustments over an extensive range of lengths without adjusting the gauge system's height, which enables working with an extended range of wheelbases without loss of accuracy and significantly increasing the productivity of a wheel alignment bay.
Wheelbases up to 630″* can be measured starting from 110″* from the system columns. In combination with shortened rolling distance of just 30 inches for runout compensation, this creates optimal conditions for heavy-duty wheel alignment measurement.

* Depends on the installation distance of camera housings.

WHEEL ADAPTORS & TARGETS

Lightweight and compact design of adaptors and targets. Self-centering 12″ - 24″ rim range wheel adaptors with an adjustable central carriage are compatible with most heavy-duty vehicles.
Double-sided extended heavy-duty studs for easy attachment to both steel and light-alloy rims.
Additional range adjustment is carried out by inserting studs into outer or inner adapter holes.
Quick and reliable target mounting in a wheel adaptor housing with a shaft lock.
High definition targets are coated with a protective layer and contain no electronic components.
A super-light magnesium alloy target base is used.
Target corner plastic frame for outstanding protection against drops and other impacts. Constructed from impact-resistant polycarbonate and double-enforced with a shock-absorbing silicone inner sleeve.

CAMERA ASSEMBLY BLOCK

High-definition cameras for immediate and stable target capture and a high-speed image transfer over TCP/IP. The system software carries out the wheels' spatial-position definition based on the reflection of target images. Each block comprises RGB auxiliary indicators of alignment procedure status.
Colored backlight for the mobile version or backlight board indication for the stationary model with a convenient indication for the duplication of the screen directions to facilitate measurement and adjustment procedures.

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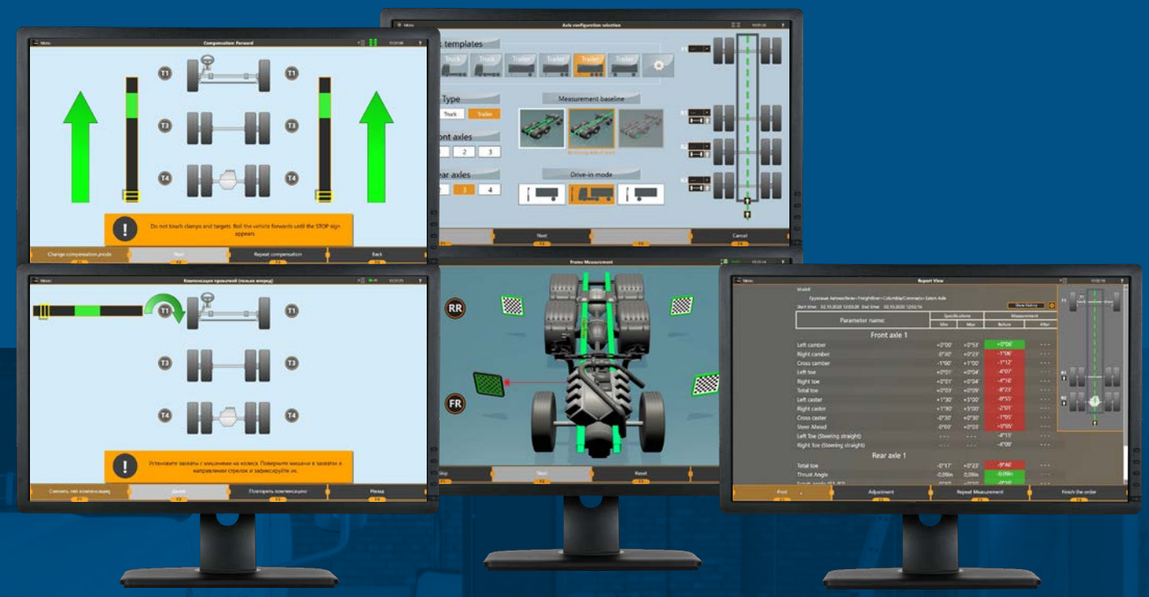
THE SOFTWARE / THE POWERFUL AND RELIABLE ALIGNER CONTROL TOOL *

* Runs under Windows 10



MOTOR DRIVEN

- Continuous data processing and live-reading displaying. Automatic step transition during measurement and adjustment procedures.

- Readings are automatically compared with OEM vehicle specifications.

- Quick program modes Access:
Database View; Target Setup & Rolling compensation Mode; Vehicle wheel formula and baseline adjustment selection Mode; Reading Mode; Live Adjustment;
Live adjustment mode of each axle; Report View.
An OEM specification database for more than 60,000 vehicles, including primary angles values, tire pressure specifications,
3D animation, adjustment diagrams
& drawings.

- Measurement modes with reference to the truck frame or the centerline.

- An OEM specification database for more than 60,000 heavy-duty vehicles and cars, including primary angles values, tire pressure specifications, 3D animation, adjustment diagrams & drawings.

- The comprehensive electronic help system contains quick workflow navigation or equipment reference: alignment workflow video, software tuition video, specific vehicle adjustment information, diagrams, drawings, video and 3D animation.

Extremely fast readings refresh. The software keeps up with the cameras' 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 eliminate possible pauses while reading & adjusting.

- Animated 3D model of a generic truck chassis. Wheel positions are pictured according to measured values of toe, camber, thrust & scrub angles. The adjustment mode has several views: each axle, a general view, a geometry view, and a tabular view.

- The software comprises over 60,000+ Heavy-Duty and Light-Duty vehicles. Database is compliant with the US market. Vehicle specifications contain angles data, images, videos on identification and preparatory procedures, and illustrated adjustment instructions. Regular database updates are available through direct download.

- The software allows for adding an unlimited amount of custom specifications and exporting/importing them.

- The software employs all up-to-date techniques to improve the accuracy of target positions calculated 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 vehicle movement during adjustment and corrects the live values. Two adjustment baselines are supported: references to the frame or vehicle centerline. Additional jacking wheel mode for adjustment or runout compensation.

- Program gauges during the adjustment procedures allow better visualization of measured wheel alignment values. Software-generated printouts can include rendered images illustrating positions of wheels before and after the adjustment.

- An intuitive workflow that uses only four navigation buttons at the bottom of the screen. Helpful drawings and OEM illustrations to remind the technician of procedural actions that have to be performed. The orders data is stored and can be recalled at any time. All the navigation throughout most of the program workflow can be completed using hotkeys on the remote control or the keyboard

- Built-in webcam support helps in positioning the vehicle in a bay and can be set up for automatic truck license plate recognition.
The final print-out has a selection of one of the multiple templates and customization of advertisement massages, a company logo, etc.

- Specific settings set automatic step transition during measurement and adjustment procedures, reducing time and facilitating the whole process.

- An operator can select default modes for compensation, measurement, or adjustment and several other fine-tuning workflow settings. A statistics screen with wheel aligner productivity data is available, displaying quantity of adjustments over a given time frame, average adjustment time, etc.

- Tire pressure tables for most of the in-database models. A detailed, user-friendly printout with an opportunity for automatically sending reports to a customer's phone or email address.

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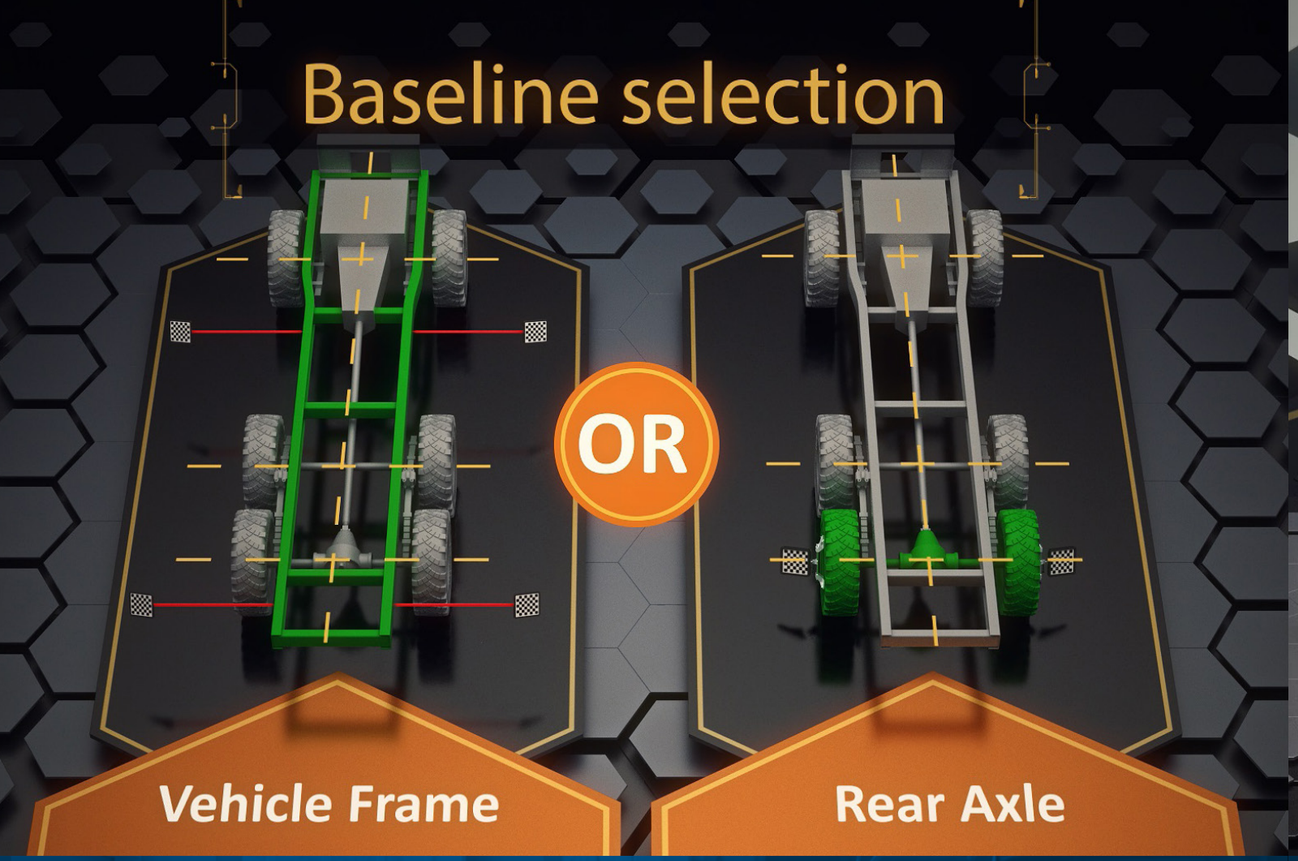
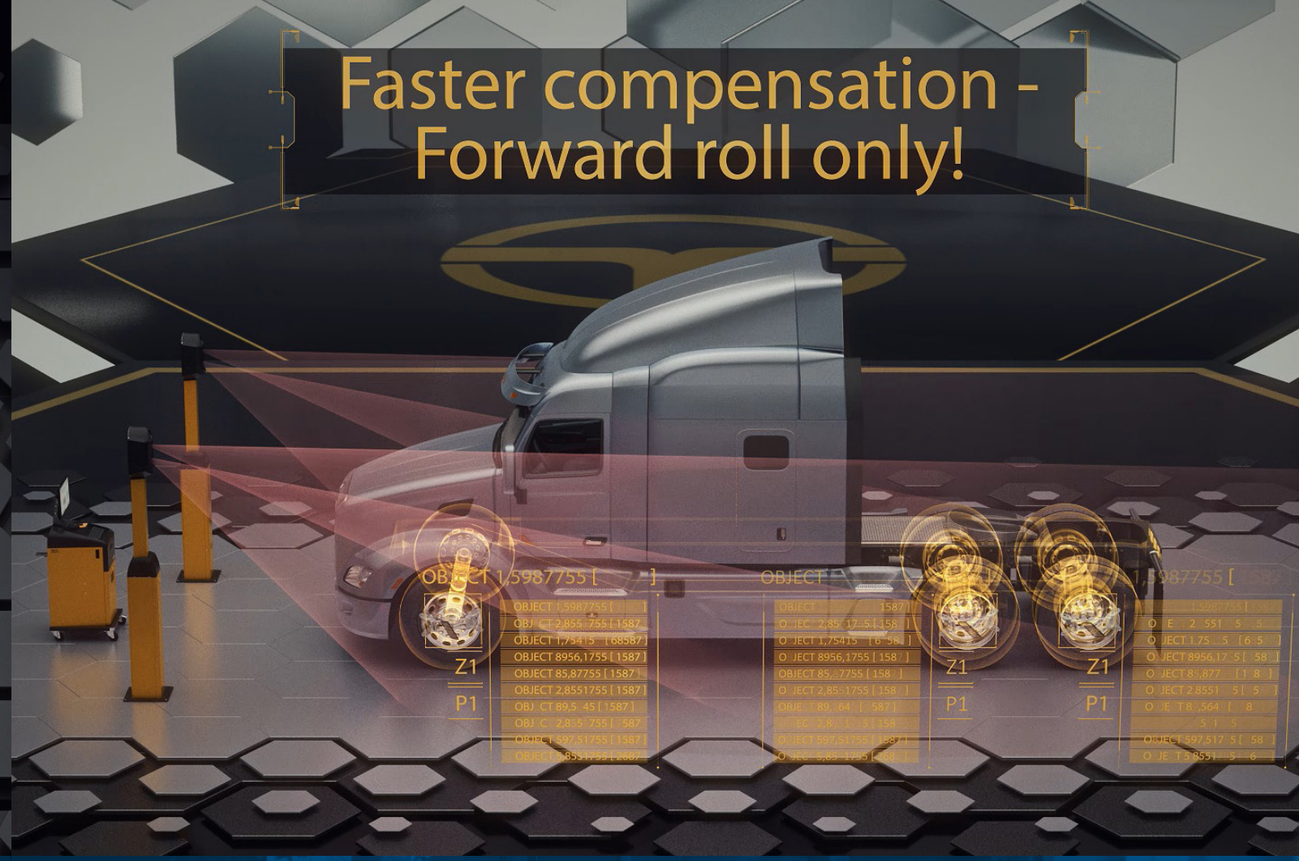


Two adjustment baselines are supported: references to the frame or vehicle centerline.

The adjustment procedure with the baseline references to the vehicle centerline defines a line through the center of the vehicle axles. After adjusting the rear axle thrust angle, the scrub angle of the subsequent axles and the total toe-in of the front axle are adjusted according to the rear axle thrust angle.

The adjustment procedure with the baseline references to the vehicle frame defines a centerline through the center of the frame. The rear-axle thrust angle, the scrub angle of the subsequent axles, and the total toe-in of the front axle are adjusted relative to the selected baseline.

A mechanical or electronic laser probe accurately calculates the frame position relative to a truck or semi-trailer axle. This option allows the alignment procedure to be carried out almost as quickly as quickly as the measurement relative to the vehicle centerline.



Several alignment procedure configurations allow use of individual features of a specific alignment bay. Dead-end or Drive-through forward and backward truck-running bay compositions available. Any bay configuration allows measurement of vehicle wheelbases up to 630"; this, in turn, reading of a tractor-trailer hitch, even for the dead-end equipment configuration.

The drive-through bay option can be indispensable for organizing a one-way vehicle workshop.

Both Dead end or Drive-through bays allow forward and backward running alignment procedure.

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WHAT`S IN THE BOX

OPTIONAL

- Electronic laser probe for accurate calculations of the frame to axle position of trucks, trailers, or semi-trailers.
- Magnetic wheel adapters for faster targets on wheel installation. This type of clamp allows for improved target attachment convenience and enhanced alignment bay operation speed. Usage increases the efficiency of the wheel aligner, makes work simpler and provides no adaptor rim contact.
- A remote-control tablet that helps to carry out the adjustment procedure if the primary system aligner display is not visible to the technician.
- A 32″ monitor can be supplied instead of the standard one and can be mounted on a regular bracket.

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 internet connection or an additional application on the device.

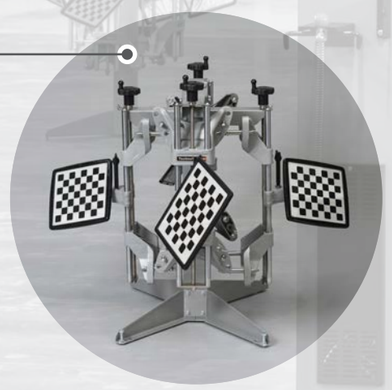
1] Machine Vision System
Measuring system with Four Widescope high-resolution cameras that are located in two towers.

Technovector 7 Truck&bus mobile kit: 7204HTMC Machine vision system + P-series console

2] Computer Console
Convenient clamp and target storage design, 21.5″ or larger LCD monitor with monitor bracket, Universal telescopic monitor bracket for LCD position adjusting (height and inclination angle)

Technovector 7 Truck&bus mobile kit: 7204HTS Machine vision system + P-series console

3] Set of eight HD Targets & Self-centering Wheel Adaptors
Kit of eight self-centering 15″–28″ rim range wheel adaptors with adjustable central carriage and eight high-definition targets coated with a protective layer and containing no electronic components.



4] Electronic Unit
Powerful and reliable Windows 10 OS desktop.

5] Two storage racks for wheel adapter-target assemblies
6] Steering Wheel Holder & Brake Depressor
7] Set of Turntables and Compensation Bridges
8] Mechanical Frame Probe
9] Remote Control Kit
10] Manual

COMPUTER CONSOLES P-SERIES

AVAILABLE COLORS

RAL 7011
RAL 3002
RAL 5010

SPECIFICATION

	TECHNOVECTOR 7 TRUCK&BUS	TECHNOVECTOR 7 TRUCK&BUS MOBILE
Number of camera	4	
Camera type	4x5MPix machine vision industrial cameras, RAW	
Installation type	Floor-mount	
Console type	P-series	
Applicability	Lift or Pit	
Min distance from cameras to the center of the front turn tables or the first axle	110″	60″
Wheel adapter mounting range	15 – 28 in	
Power source	115 VAC single-phase 50/60 Hz	
Weight net/gross	1180 lbs	1200 lbs
Volume	78 ft3	96 ft3