

COMPUTERIZED  
**AXLE**  
**ALIGNMENT**



**Drive Ahead with Right Technology**  
TOE & LOCK ANGLE setting equipment for front axles



**MANATEC**  
... In Technology state of mind

- Wireless Communication using Zigbee RF Technology
- Less Takt time
- Compact design, occupies less floor space
- Software guided process sequence
- Alignment summary report with Xmr chart for statistical control and process capability analysis
- Max Turn (Lock angle) measurement *(Optional)*

# MANATEC'S AXLE ALIGNMENT SYSTEMS

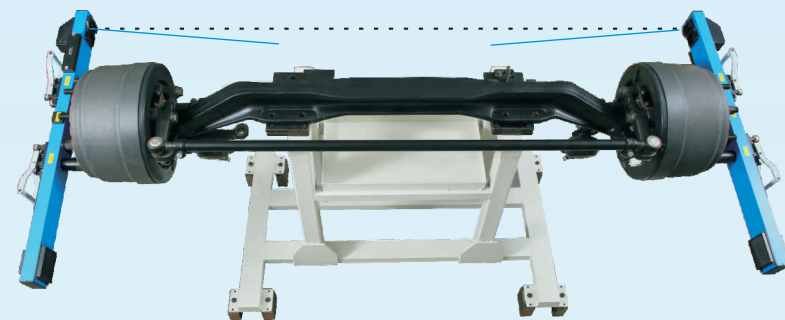
An Axle Alignment System is meant for setting the Total Toe of an Axle in the Axle assembly line.

The system adapts the latest Camera technology on both sides with specially designed sensor arm hubadapters for Axles on the move in a conveyor. The combination of camera and IR LED deployed on either side of the sensor arm hubadaptor, is used by the Proprietary Vision based soft ware to derive the angle of inclination of the respective wheel hub in relation to the geometric center line of the axle. A total cycle time (takt time) of 70 seconds is all it takes to complete the entire process.

The camera IR technology used by Manatec is capable of providing accurate result of Toe with the help of High precision cameras in the shortest possible time. Customized Toe setting software along with Data management software are exclusively developed to suit vehicle manufacturer's requirement.



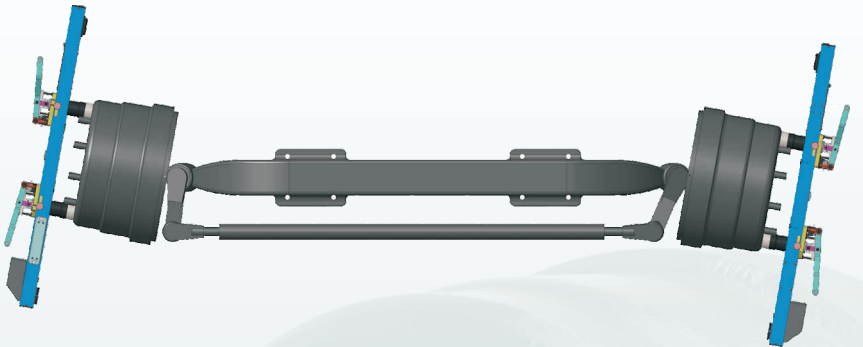
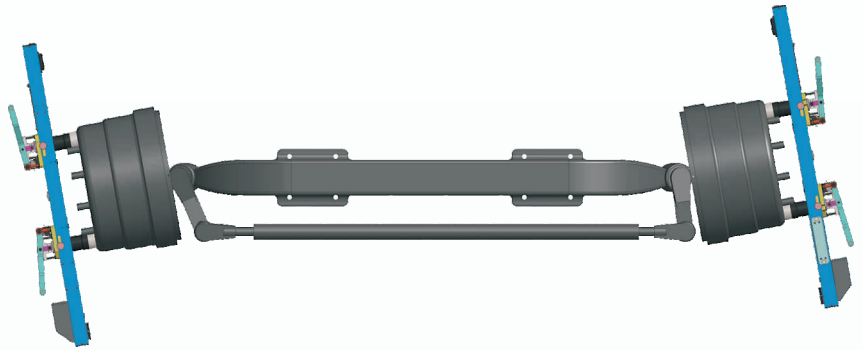
## MEASUREMENT PRINCIPLE



The camera hub adaptors should be mounted on respective sides (LH & RH) of the axle & the software will guide the user to achieve the horizontability of the Camera hub adaptors, to set the straight ahead position first and then rotate the hub adaptors by 180 degree to compensate the static errors. The measurements will be taken in both front & rear side of the axles. The system will measure individual toe of each axle hub independent of the distance between the axle hubs.

The inclinometer is also provided to measure the axle inclination for camber compensation with all these data. The proprietary software computes everything internally and displays relevant results like Straight Ahead, Individual Toe, Total Toe and Camber.

# LOCK ANGLE SETTING (MAX TURN)



- If required the equipment can be customised with the provision for Lock angle measurement (Max Turn) by adding two more cameras on each sensor arm.
- The cameras will be incorporated in the hub adaptors itself, hence no separate (ceiling) setup is required for the system to measure the Lock angles.
- As per the onscreen guidance the Operator need to turn the axle extreme left & should adjust the lock angle bolt. Press enter key followed by turning the axle to extreme right & adjust the lock angle bolt.
- The sequence will be completed when the values are set within tolerance limit. The data will be stored automatically & can be linked with manufacturer MES for quality control purpose.
- One minute of takt time all it takes for Lock Angle setting.
- All the above sequence to be performed under stationary condition (not on the conveyor).

## SYSTEM CALIBRATION

The Camera hub adaptors & inclinometers can be calibrated periodically to ensure accuracy of the measurements. Our user friendly software guides the user to successfully perform the calibration.





## CHARGING UNIT

A battery charging unit is provided to charge the camera hub adaptors and inclinometers during idle condition. The unit also has provision for charging the spare batteries.



## SECONDARY MONITOR



Additional 32" monitor is provided for better visibility

## DATA MANAGER



Data manager software for storing Axle alignment results with reference to Axle ID / Date for future reference.

## BARCODE READER & PRINTER



A Bar code reader is provided for scanning axle information which is used for quick and easy retrieval of specification from the stored database.

Measurement results can be printed as a Barcode & pasted over the respective Axle.

## STANDARD ACCESSORIES

- Camera Hub adaptors (LH & RH) : 1 Set
- Inclinometer : 1 No.
- PCD Brackets with stand : 1 Set
- Calibration Kit with stand : 1 Set
- Main cabinet with cooling system : 1 No.
- Industrial PC & Peripherals : 1 Set
- UPS : 1 No.
- Bar Code scanner (Cordless) : 1 No.
- Bar Code printer : 1 No.
- Secondary Monitor (32") : 1 No.



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