Alignment Runways

Bee Line Advanced Aligners featuring patented Bee Line Turning Aligners are multi-functional work horses for alignment shops, body shops, garages, dealer service centers, tire centers, and fleets. They handle all makes of small cars through the heaviest trucks up to 32,000 lbs. per axle. These systems are available in a variety of Drive-On, Drive-Thru, and Pit Model Installations.

Bee Line Advanced Aligners accommodate vehicles with tread widths from 48" to 100" or 54" to 106". Numerous pit or above ground models are available for alignments from either direction.

Mixing and matching Bee Line alignment equipment lets you custom design an aligner system to best fit your facilities and your production requirements.

The Bee Line add-a-unit design safeguards your investment against obsolescence and is expandable to meet your needs. Each piece is engineered to assure safety and flexibility through a wide range of vehicles.

Alignment Runway Specifications:

- Load capacity 16 tons (14.51 M ton) per vehicle axle.
- Removable 19 inch x 45 inch (48.26 cm x 114.3 cm) runway sections. (25 inch x 45 inch optional)
- Adjustable tread width 48 inch to 100 inch (121.92 cm to 254 cm), or 54" to 106" (137.16 cm x 269.24 cm)
- AR330C - 24 inch double approach 15' 9" long (480.06 cm) or AR330D - 30 inch double approach 19' 3" long (586.74 cm).

The forward runways are removable for easy access to the vehicle when making a variety of adjustments.

Bee Line's Heavy-Duty Air Lift Jacks provide safe and easy vehicle lifting on all Advanced Aligner Runways. The dual air lift jacks have a capacity of 3500 lbs. for each 25 lbs. of line pressure at the valve.

Space Saver Ramps

Bee Line designed the Space Saver Ramp to be installed in a smaller area than a standard ramp alignment system by reducing the total number of machine sections required. The design of the Space Saver allows a major portion of the ramp to be raised hydraulically to an operating level equal to the height of the Advanced Aligner Runways.

The Bee Line Space Saver Approach Ramp eliminate the problems associated with pit drainage, pit leakage, and soil contamination, making EPA compliance much easier. The approach ramp incline angle allows low profile busses and RV's to drive on without bottoming out.

The Space Saver Alignment System is totally above ground adding these great benefits.

- Easier to maintain and clean.
- No air circulation requirements.
- No water problems associated with pits.
- No exhaust fan requirements.
- No building permits, digging or EPA considerations.
- Lessen insurance and injury worries.

Space Saver Ramp Specifications:

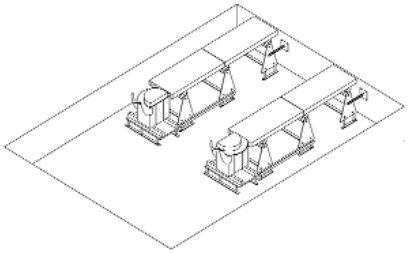
- Length of Approach Ramp: 23 feet 4 inches
- Lifting Length: 16 feet
- Ramp Height: 24 inches or 30 inches
- Lifting Capacity: 12 tons, hydraulically powered
- AR350 model is used with 24 inch high Runway Sections. Incline angle: 4.5 Degrees
- AR350.30 model is used with 30 inch high Runway Sections. Incline angle: 5.7 Degrees

The longer design of the new Space Saver lifting ramp creates a more gradual incline and requires less runway sections.

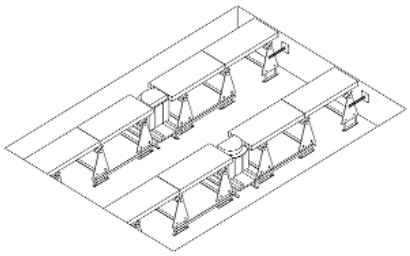
With the truck in position, the Runways are hydraulically lifted with the touch of a button.

Runway Setups

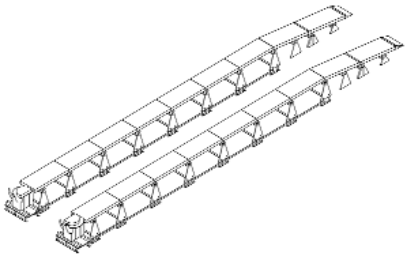
Illustrated below are nine samples of Alignment Runway setups. Bee Line engineers can custom design any configuration to best fit your shop floor space.



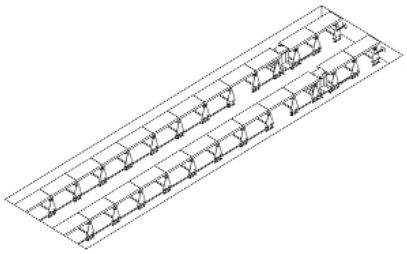
Two Section AA Pit Model with Turning Aligners for Wheel Alignment.



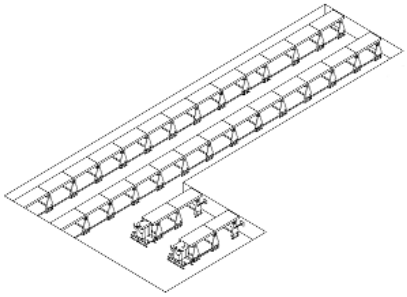
Four Section AA Drive Thru Pit Model with Turning Aligners for Wheel Alignment.



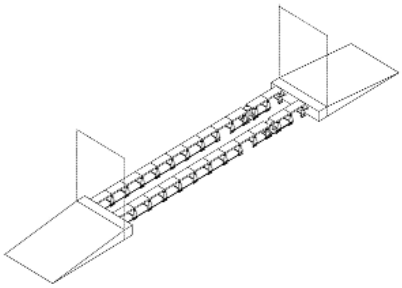
Seven Section AA Above Ground Model with 15'9" Double Approach Ramps and Turning Aligners. 9' Single Approaches are also available for cars and light trucks.



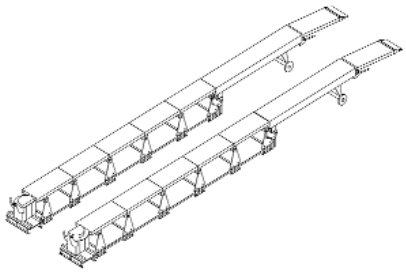
Twelve Section Drive Thru AA Pit Model with Turning Aligners for Wheel and Frame Alignment.



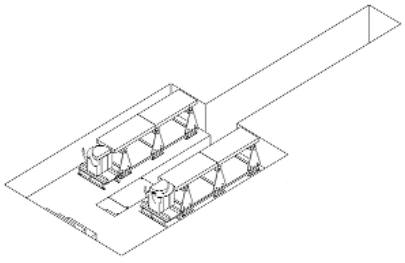
"L" Pit - Thirteen Section Drive Thru Frame Machine and Two-Section AA Pit Model with Turning Aligners for Wheel and Frame Alignment.



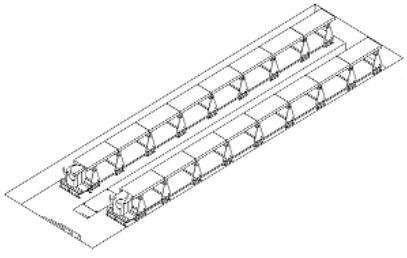
Twelve Section Drive Thru AA Pit Model with Turning Aligners and exterior concrete approaches for Wheel and Frame Alignment.



Five Section Above Ground AA with Space Saver Approach Ramps. Include Turning Aligners for Wheel Alignment.



Two Section T-Style Step Down Center Pit with Turning Aligners for Wheel Alignment and easy under truck access.



Eight Section Step Down Center Pit with Turning Aligners for Wheel Alignment and easy under truck access.

King Pin Turning Aligners

Bee Line KPI Turning Aligners handle all points of alignment: toe, camber, caster, KPI (SAI), toe change, load change, bump steer, and max turn angle. When rotated or turned, the turntable's caster and KPI (SAI) readings create the same natural turning radius and arc that were originally designed into the vehicle's front end. Only this method gives the most consistent, accurate readings of steering geometry available.

The rugged yet versatile design of our Turning Aligners provide the base for accurate wheel alignments. Five bearings under the turntable plates help to maintain large load capacities. The bumper stops can be lowered but not removed. This increases safety by making it less apt to be overlooked by the alignment operator.

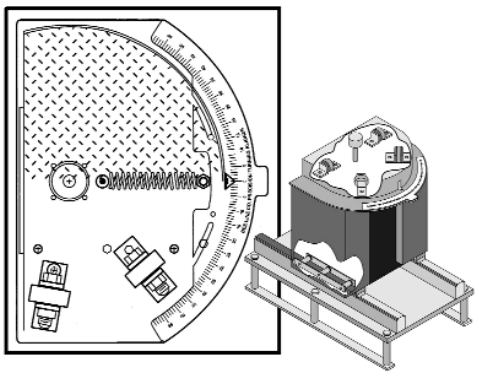
Turning Aligners can be electronically interfaced with the Bee Line LC7000 Series Alignment Systems to electronically measure and display the Ackerman Angle, the turn radius, KPI and the caster without pushing buttons or interpreting a scale. This means one person can do the alignment measurements, saving time and increasing profits in your shop.

Turning Aligners allow the steer tires to turn at a wide 55 degree turning angle and make it easier for the alignment operator to set steering stops accurately.

King Pin Turning Aligner Features:

- Adjustable tread widths: 48" to 100" or 54" to 106"
- Adjustable bumper stops
- Electronic interface capability

Alignment heads recieve live data from the King Pin Turning Aligner.



Sturdy construction handles a variety of vehicles.

LC7000 Series Alignment

The Bee Line LC7000 Series laser guided computer alignment gauging system is the new benchmark for the heavy duty truck alignment industry. Every aspect of this system builds on 85 years of alignment expertise and has been refined to make alignments easier, faster and more accurate than ever. Several innovative features make this the best heavy duty truck alignment system ever from Bee Line and by far the best system on the market today.

We know your business wants an alignment system that makes you money. We understand your business wants equipment that is designed to last. We realize you want equipment that is user friendly and easy to learn. And we know you need equipment that is accurate 100 percent of the time. With those basic needs in mind, we have designed our LC7000 Series laser guided computer to be the best alignment system on the market for today's alignment technicians. Please take a look at these advantages from our LC7000 Series and consider whether or not you can afford to use anything else but the best. Our competition can not compete with our proven alignment philosophy, our stability, our accuracy, our outstanding service and most importantly, our 85 years of experience. We are confident you'll realize why serious professionals choose Bee Line every time.

Precision you expect from Bee Line.

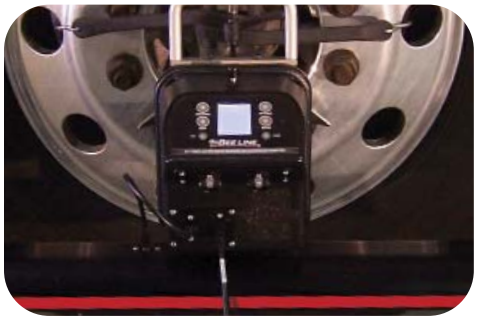
The LC7000 continues the excellence of laser accurate measurements up to 1/1000th of an inch. The LC7000 instantly produces live measurements that are consistently repeatable. When making corrections, live readings serve as the guide to bring the vehicle into the optimum alignment position. Our alignment accuracy is so precise, we developed our own alignment specifications that align vehicles *better* than the O.E.M. specifications

A self reliant alignment system.

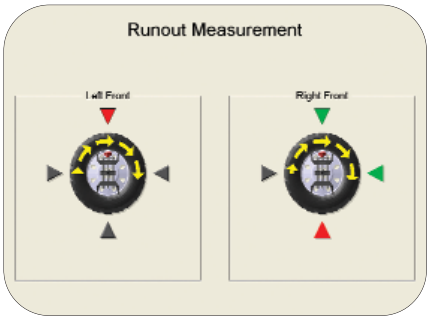
Bee Line gives you the ability to maintain the precision of your Alignment system. Unlike our competition, our entire system can be calibrated in a few minutes by any technician in your shop. WindSpeed 7000 Alignment Software will remind technicians to calibrate on regular intervals that are based on your work load. There is no downtime waiting for a service rep to maintain the accuracy of your alignment system. When you own Bee Line equipment, we make sure your shop is making money in the alignment business by backing up our system with the best warranty in the industry.

New Bee Line Interactive wireless alignment heads increase efficiency.

Our alignment heads feature color LCD screens that give the technician the option to perform alignments right at the wheel. Each screen in our WindSpeed 7000 Software is displayed on the head and prompts the technician through an alignment just as if he were looking at the monitor. This advantage dramatically reduces the time to gauge the alignment of a vehicle. For additional speed and convenience, our heads also contain lasers that automatically seek out their target area on the opposite head. Lithium Ion batteries charge heads for up to 10 hours.



New interactive alignment heads are now a "workstation" for the technician.



Whenever a step is illustrated on the computer monitor...

...the same step is displayed with live readings on the head!

A cabinet with everything.

The new LC7000 cabinet charges the rugged alignment heads in a vertical position that reduces the chance for damage and saves shop space. Additional exterior storage racks safely hold wheel mounts when they are not in use. The cabinet has also made work easier for the technician by ergonomically designing features like a swivel mounted 19" flat panel monitor, a foot rest bar and a large gliding drawer for the color printer. There are even coffee cup holders built into the work top to prevent accidents!

The sleek new LC7000 Series from Bee Line combines convenience with efficiency.

WindSpeed 7000

Software that adapts to the user.

WindSpeed 7000 Alignment Software has the capability to assist beginners with pop up reminders, extensive help screens and help videos; while more experienced technicians have the option to customize their workflow to fit their skill level. When alignments are complete, detailed before and after color documents are printed for the customer. Comprehensive database management options give your shop the ability to save and recall any previous alignments.

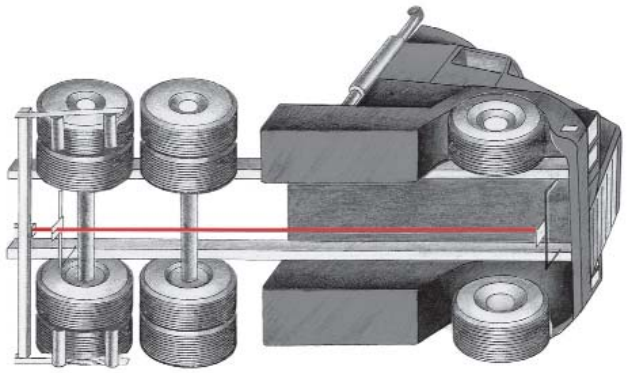
Rear Axle Alignment

With the 21000 Rear Axle Aligner you can take rear axle alignment to your customers' shops, terminals or wherever they might be located. The 21000 is constructed out of light-weight, durable and strong aluminum, making it easy to transport. The 21000 comes with the laser assembly built into the rear channel, reducing the risk of damage to your equipment during transportation to and from different locations.

Bee Line develops alignment systems based on the center line of the vehicle. In order for a vehicle to achieve proper tracking, the wheels must travel parallel to the center line. All rear axles, including offset axles and axles with different tire spacers or different size tires are set perfectly at 90 degrees to the centerline of the vehicle regardless of whether the chassis is centered over the axle.

The Proven Bee Line self-centering Wheel Cradles assure the correct position of the laser when seated on the cradles in relation to the axle. Wheel Cradles eliminate the need for run-out and raising the vehicle off the floor, allowing the operator to gauge the suspension alignment in its operational position.

The 21000 system is so versatile, it can be used on the floor of your shop or on Bee Line's Advanced Aligner Runway System.



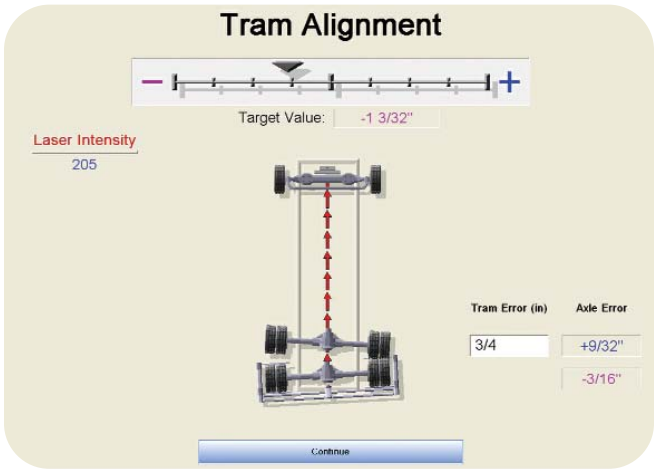
The proven 21000 lets you accurately position your rear axles perpendicular to the vehicles center line allowing the wheels to travel in a straight line.

The wheel cradles feature rack and pinion frame gauges that assure accuracy when determining the axle center.

21000 Rear Axle Aligner Features:

- Access to AC power is not required.
- Long life ni-cad battery that powers the laser for up to 20 hours before recharging is necessary.
- Wheel Cradles weigh only 32 lbs. and the Rear Beam weighs only 10 lbs.
- User friendly construction allows even novice users to assemble the Rear Axle Aligner and take all necessary measurements in just a few minutes..
- Easy one person operation.
- Calibrates easily to assure consistent accuracy.
- Fastest method of accurately gauging rear axle alignment.
- Save up to 30% on tire costs and up to 2% on fuel costs.

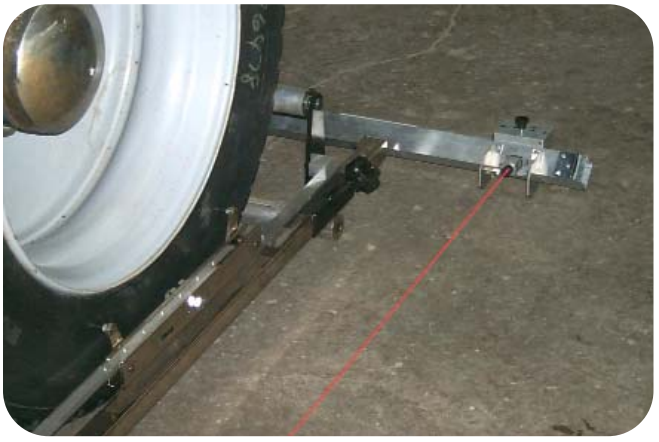
The aluminum beam is seated parallel to the axle and emits a laser that travels through a slot in the rear target that hangs in a centered position between the frame rails.



When used with an EPM850 Electronic Target, live readings are displayed in WindSpeed 7000.

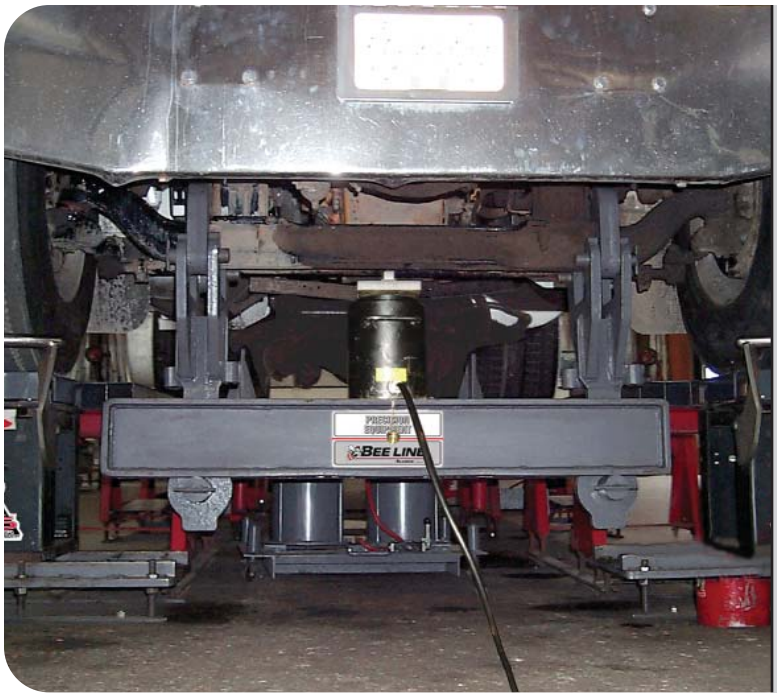
The laser travels forward in a line identical to the axles thrust line and strikes the front target which measures the amount of axle error from the centerline of the vehicle.

Trailer axles can be aligned by moving the cradles and beam to the trailer axles. The tandem target hangs from the kingpin.



The 21000 can be ordered with an optional side shooting feature. This configuration is ideal for lower profile vehicles.

Truck Axle Correction



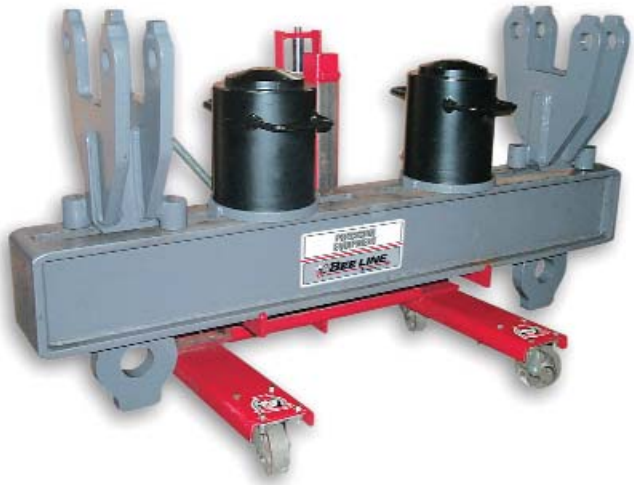
Bee Line's exclusive axle correction equipment is a must for the Truck Repair facility that wants to perform Complete Truck Alignment Service. Most passenger cars and light trucks have adjustments or after market kits to adjust camber and caster to preferred specifications vs. OEM tolerances, it only makes sense to set a Heavy Duty Truck to preferred specification also. Floating beam systems allow the operator to fine-tune the axles to these preferred specifications.

Heavy duty over the road truck tires are normally more than 3 times the cost of passenger car tires and average 4 times the miles per year. This allows equipment payback in tire savings over a very short period of time.

Bee Line promotes preferred Bee Line Wheel Alignment Specifications vs. the OEM manufacturing tolerances, and now the Truck Maintenance Council (TMC) also recognizes the importance of setting to a preferred target specification as stated in document RP642. The patented Bee Line Floating Beam allows you to adjust the axle into these preferred specifications.

The Floating Beam can be mounted parallel or at an angle to the axle, allowing the operator to remove both bends and twists. Specific tools were designed to be used safely with the beam. When used with the Bee Line AA Machine, one technician can correct heavy-duty truck axles on the vehicle.

Camber corrections are accomplished by using bridge hanger-type tie-downs to hold the axle in place while powerful Bee Line Hydraulic Rams (up to 130 tons) correct camber by pushing the axle upward



All axle corrections can be performed with the Bee Line Floating Beam System. Included in the system is the Beam Lift that effortlessly positions the floating tool beam with hydraulic rams and connectors in place.

Sample Axle Correction Setup:

NEGATIVE CAMBER CORRECTION - BOTH SIDES

Negative Camber correction can be accomplished on both the right and left wheels simultaneously. If camber is too positive on both wheels and the relationship between the wheels is correct, the correction should be done as shown with the clevises equally centered on the axle. A single clevis can be used, but two clevises provide more stability during the set up. If unequal amounts of correction are required, a single clevis should be used and moved toward the side where the most correction is needed.

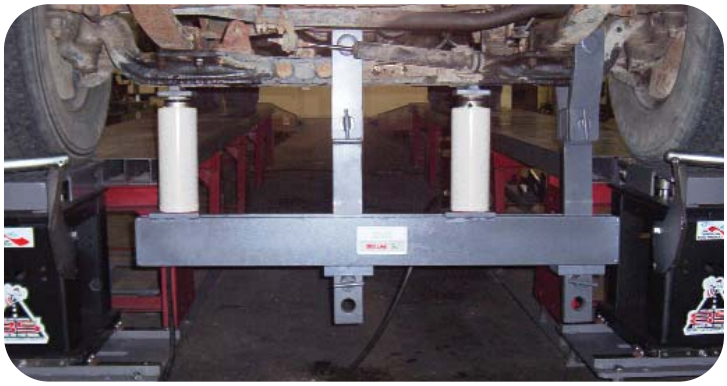
Negative Camber Correction on both sides.

Sample Axle Correction Setup:

CASTER TWIST

A Caster Twist is normally performed on the right side of the vehicle for accessibility and operator convenience. Use the setup shown with the outside twisting tool toward the rear of the vehicle to increase right caster relative to the left side. The outside twisting tool will be on the front side of the axle to make the right caster more negative. Then equally shim both sides if more or less caster is desired on both sides.

Caster twist correction setup.



404 Tool Group

The 404 Tool Group is designed for camber correction on the growing market of medium duty trucks with 4000 to 7000 axles, motor homes, and the Ford Super Duty with straight axles. The 404 Axle Tooling can be used with any wheel alignment machine without a fixed beam between the turn tables. Optional accessories include the 404100AL Aluminum Cross Bar and a clevis for Isuzu & Mitsubishi trucks.

The Bee Line Electric Hydraulic Pumps are the finest pumps available on the market. The pumps allow operation of rams together or separately. They operate on 115V, 10,000 PSI and require 30 amp service. The two stage system has a high volume first stage for output below 300 PSI. It automatically switches to a 10,000 PSI second stage for efficient work. The electric pump unit is available with a solenoid control valve, or a hand held automatic release control switch valve.

On The Floor Alignment

The Bee Line On The Floor Alignment configuration is a popular setup for trucking fleets and shops that perform routine alignment checks but do not have a dedicated alignment bay. With our On The Floor system, any bay can be used as an alignment area in a matter of seconds. Catch misalignment conditions before they cost your fleet money with this proven gauging system.

All the same great gauging features of the LC7000 Series Computer Alignment System are available with our On The Floor System. This gives your shop the ability to accurately diagnose any misalignment condition and even correct the rear tracking and set the toe in any bay of your shop. If more extensive misalignment conditions are detected or if parts need to be replaced the truck can be sent out to a facility with a complete Bee Line Alignment system for these corrections. Our On The Floor Alignment configuration is a fast, easy and less expensive way to make sure your trucks are performing at optimum efficiency.

On the Floor alignment systems are made simple with the 7600 Floor Jack

Set the rear axles with computer accuracy with the 21000 Rear Axle Aligner.

WINDSPEED 7000
ALIGNMENT SOFTWARE

Mobile Alignment

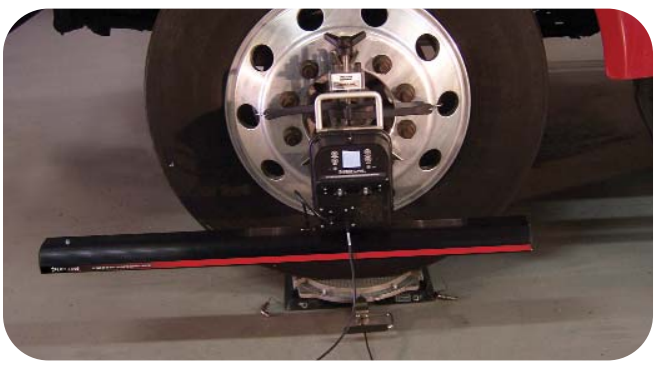
Take alignments to the vehicle with our totally portable computer alignment gauging system. This system is ideal for gauging truck wheel alignment on location, inside or out. Use your laptop computer loaded with our WindSpeed software to gauge runout, camber, caster, toe, KPI and steering stops.

If you never have an open bay for alignment it may be necessary to do mobile alignments wherever your trucks may be parked. This mobile alignment system can be ordered with a handy carrying case that allows one technician to gauge trucks on any reasonably flat surface with our wireless laser accurate computer alignment gauging system. It comes complete with everything you need to find misalignment conditions without the need for an alignment bay.

Like any precision instrument, the transport of the alignment system can be harder on the equipment than the actual use. This optional carrying case reduces the risk of damage and reduces set up time at the job sight.

Mobile Alignment Features:

- Diagnose alignment conditions and transport the vehicles to your shop if they need replacement parts or major adjustments.
- Save man hours by eliminating most transports.
- Gauge more vehicles per day.
- Save alignments on your laptop and print alignment results.
- Power unit will supply power to the alignment heads for up to 10 hours. A/C power is not necessary.
- Adjust toe and tracking at your terminal when used in conjunction with the Bee Line Rear Axle Aligner.



Alignment readings can be taken anywhere inside or out with our wireless alignment heads and FPT8000 Floorplates.

Wheel Balancing

The Smart Balancer is easily the most user friendly on the wheel balancer on the market today. The Smart Balancer replaces the old strobe type balancers with a new unit that anyone could use. From initial set up through the completion of the balance, the technician is prompted by a simple touch screen pad on the Smart Balancer console.

On the wheel balancing refers to the Truck Maintenance Council's official recommended practice of truck wheel balancing. On the wheel means the wheel is never removed from the truck during the balancing procedure. By leaving the wheel on, a technician not only balances the tire, he balances the hub and the drum in relationship to the truck's suspension. Balancing the entire wheel assembly provides a far more accurate, "smart" balance. Simply put, there is no equal.

The Smart Balancer takes the guesswork out of placing weights on the tire. In a few short spins the touch screen illustrates the exact amount of weight and the exact position on the wheel the weight should be added. This process removes the chance for error and dramatically decreases the time it takes to balance each wheel. With the Smart Balancer, you make more money with a better quality balance in less time.

1. A spinner brings the wheel up to speed.

2. A sensor measures wheel vibration.

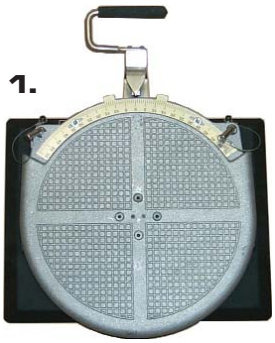
3. The touch screen indicates the position and how much weight should be placed on the wheel.

SmartBALANCER
WHEEL BALANCING SYSTEM
BEE LINE

Alignment Accessories

1. FPT 8000 Portable Turning Aligner
The portable turning aligner can be used on the floor or machine for Light Trucks, SUV's and Heavy Duty Trucks. It weighs only 32 pounds per plate and is rated to accept 10,000 pounds of weight. Order the FPT 8000E to interface directly with the computer heads producing electronic measurements of the turn angles.

1.



2. 19020 Spring Seat Gauge
Twisted axles cause trucks to shimmy and/or wander and also cause damage to the truck springs. The Bee Line 19020 Spring Seat Gauge is designed to measure the difference or amount of twist found between spring seats. If the axle is found to be twisted, the 405 or 406 floating beam systems can easily and accurately correct the problem.

2.

3. 100AL -100 Ton Aluminum Ram
Bee Line's Aluminum 100 Ton Ram weighs just 39 pounds, making it 61 pounds lighter than our Steel 100 Ton ram, and still just as rugged. Made from high tech aluminum the rams generate a full 100 tons of force at 10000 psi.

3.

4. LC4195B.1 Center Mount Wheel Mount
Designed for use on truck wheels, the Bee Line LC 4195B clamps securely to the lugs or studs on the truck wheel. It holds securely during and after run-out which facilitates a fast and accurate alignment.

4.

5. 404075 Confined Area Clevis
The universal design of this clevis eliminates the removal of the tie rod and in most cases the drag link when making a positive camber corrections to heavy duty axles.

5.

6. 7600 Floor Jack
The 7600 Air/Hydraulic floor Jack can lift vehicles from one or two points of contact along its 33 inch beam with the touch of a button. This popular shop tool is an innovative solution for safely lifting heavy duty trucks.

6.

7. 21130 Portable Rear Axle Aligner Cart
This mobile cart safely stores every piece of the 21000 Rear Axle Aligner including the laser recharging unit and two optional FPT 8000 Portable Turning Aligner Plates.

7.

A McLAUGHLIN Company

FOR PARTS, SERVICE, TRAINING OR TECHNICAL QUESTIONS, VISIT US ONLINE AT

BEELINE-CO.COM OR CALL TOLL FREE 800-728-7828

2700 62ND STREET COURT • BETTENDORF, IA 52722 • FAX: 563-332-6517

BEE LINE

85 YEARS ON THE ROAD, DRIVING THE ALIGNMENT INDUSTRY.

HEAVY DUTY WHEEL ALIGNMENT