



We Know Tire & Rubber.



Millroom & Slab Processing



Laboratory Tire Testing



Controls & Data



Final Finish Tire Testing



Products & Services Overview



We Know Tire Testing.

The Poling Group: Five Divisions-One Goal



David Poling, Jr.
President / COO
of the Poling Group

In 2003, Mr. David Poling Sr. established the AKA Poling Group name to informally unify his five companies supporting the tire and rubber industry; and since then, the Poling Group has been known world-wide for innovation, quality, and customization. During this time, each of the companies had maintained its separate corporate identity.

In 2021, David Poling Jr. (President/COO) and David Poling Sr. (CEO) announced the official merger of Akron Special Machinery, Inc. (ASM), Akron Steel Fabricators (ASF), Commercial Timesharing, Inc. (CTI), ASM-Hasbach, and Firwood~ASM into the legal name **the Poling Group**, as a single corporation.

“Customers can expect the same quality products and services that they’ve always received. This is more of a legal restructuring of the company names and finances”, says David Poling Jr (COO). “Other than being able to more freely share each company’s resources and assets, the move also streamlines our software and billing systems”, he continued.

Each of the companies making up the Poling Group has a proud history with establishment dates ranging from 1898 to 1978. The new Poling Group will honor that history by keeping the original company names as division names.



ASM Division Founded : 1978

The Poling Group's ASM Division specializes in Final Finish Tire Processing, which includes Tire Uniformity and Geometry Testing, Grinding, Flash Removal, Balance Testing, and Machine Remanufacturing & Retrofit Upgrades.



Firwood Division Founded : 1940

The Poling Group's Firwood Division manufactures Tire Sidewall Painters and Buffers, in addition to Post Cure Inflators.



ASF Division Founded : 1946

The Poling Group's ASF Division focuses on Rubber Processing, specializing in cold slab stocking cutting solutions, mill blenders, rubber calendaring, and batch off equipment.



CTI Division Founded : 1978

The Poling Group's CTI Division provides innovative software and electrical controls to the tire industry. Our TTOC TUO machine controller is second to none and includes our TDAQ and TSAS products. CTI Division also provides enterprise-level software solutions for Final Finish (FFH) and the entire tire factory (TFFIS), including advanced controls for material handling.



Hasbach Division Founded : 1898

The Poling Group's Hasbach Division specializes in Laboratory Tire Testing, which includes testing for Endurance, Rolling Resistance, Tire Noise, Force & Moment, and High Speed Uniformity.

X150
TU FOR TRUCK/BUS TIRES
CE



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We Know Tire Testing.

“We Know Tire Testing” is not just a slogan — it’s the foundation the Poling Group is built on.

From Laboratory Tire Testing, including Rolling Resistance, Endurance, Durability, and Force and Moment, to Final Finish Uniformity and Sidewall Testing, and all the Controls, Data Management, Material Handling, and Quality Assurance in-between, we’ve got you covered, trained, and fully supported.

Together with our comprehensive line of testing equipment, we also have over 70 years’ expertise in durable, customizable, and innovative Millroom and Rubber Processing Equipment.

PolingGroup.com
Sales@PolingGroup.com

Five Divisions-One Goal.

With over 200 years of combined experience, the five companies acquired by David Poling, Sr., now Poling Group Divisions, strategically compliment each other to provide customers unparalleled expertise in all facets of tire testing and rubber processing.

The Poling Group name has become known world-wide for quality and innovation, with their five divisions currently holding over 33 patents for various rubber-related equipment and software inventions.

One Goal: We are committed to remain a globally trusted source for tire-testing equipment & software, factory data management, rubber processing equipment, and engineering solutions.

Our focus moving forward is on integrating data analytics, AI, and robotics to formulate the next generation of smart tire manufacturing solutions.

COMING IN
2024

TVIS software uses already-collected geometry images from an inflated tire to create an interactive 3D tire model



Enhanced Visual Imaging for Tire Classification and Inspection.

TVIS software uses already-collected geometry images from an inflated tire to create and display an interactive 3D tire model. This tire model can be displayed at a TVIS kiosk on the factory floor or on a workstation in an office. It can highlight any failed geometry measurements and any visual defects found by the TVIS software. Since most tire classifiers or inspectors in final finish are inspecting a non-inflated tire, using our interactive 3D model of an inflated tire allows them to quickly verify the problems, making them more efficient.

Currently the TVIS software uses rules-based algorithms to find any defects like cuts, gashes, pin vents, etc. Later in 2024, the TVIS software will be upgraded to include AI deep learning models. These future Anomaly and Object Detection deep learning models will be trained to find curing defects and other surface damage. Additionally, they can be trained to locate objects, like the DOT Date Code and the treadwear indicator bars located deep in the tread grooves. Once located, the TVIS software can read and validate the DOT Date Code, stopping tires with incorrect dates from leaving the factory. It can also measure the height of the treadwear indicator bars, grading them against customer limits if desired.

TVIS software runs "on-premises" and does not require a cloud connection outside of the plant network. Kiosks can be integrated in the factory at each of the existing final finish classifier or inspection stations. Additionally, the kiosk software can display the interactive 3D model of an inflated tire on a workstation in an office environment for tasks where the physical tire is not needed.

THE RESULT: For a small investment, a factory can add our Tire Visual Inspection System to generate interactive 3D models of their inflated tires produced from their existing large investment in tire geometry systems. TVIS makes the human inspector more efficient and highlights potential defects that they may not have noticed.



Rules-Based Detection

In the example above, predefined rules were established to flag any area 0.4mm below the sidewall surface as a defect.

Deep Learning Models

Later in 2024, Anomaly and Object Detection deep learning models can be trained to find visual defects that the rules-based algorithms alone cannot. Additionally they can be used to locate other objects on the tire's surface, like the DOT. With the new government penalties in place for incorrect DOT Tire Date Codes, using TVIS to locate, read and validate those codes can stop tires with incorrect date codes from leaving the factory.

DB111

Dynamic Balance Tester

The Poling Group Dynamic Balance Testing Machine has the capacity to balance test all tires processed by the CX111 Tire Uniformity Machine.

Since early 2022, the Poling Group has been completely redesigning the DB111 to create a superior balance tester with a focus on ease-of-maintenance, while having sound industrial-strength framework and only the latest components. Our flexible design provides the ability to measure dynamic imbalance on any range of tires also measured by a Poling Group CX111, or most other competitive TU machines.

Place the DB111 behind a CX111 machine to provide a single modular solution for Tire Testing, Grading, Marking, and Sorting for uniformity, geometry, and balance within a fully automated line.

COMING
SOON

NEW IN
2021

Interchangeable Decal/Hot Stamp Marker

In 2021, the Poling Group introduced a new option for their existing Hot Stamp (Hot Foil) marking system. While keeping the same controls mounting base, easily change the Hot Stamp marking head with a clear tape (LTA) decal marker for OE tires. This interchangeable solution saves time and money, creating flexibility for internal or external marking on a Poling Group uniformity machine.

- ▶ Interchangeable Hot Stamp (Hot Foil) and Clear Tape Decal heads use the same mounting base
- ▶ Mount internally or externally to the testing machines

THE POLING GROUP KNOWS



Tire Uniformity Testing

Poling Group patented X-Frame Technology forms the robust core of our latest line of versatile X-Series Tire Uniformity testers. We include best-in-class machine control and data acquisition with each machine to ensure unmatched accuracy, reliability, and throughput.



CX111
PC/LT TU



MCX75 Motorcycle TU



CX111 Car / Light Truck TU



X150 Truck / Bus TU



Smarter

Advanced proprietary testing algorithms, along with patented devices and testing methods, allow our machines to test tires accurately, even as they age and supply services change.



Faster

A testing machine with a TTOC6 and TDAQ data acquisition system can process tires SEVERAL seconds faster than any prior or currently competing machine.



Stronger

Our dedication to continually develop and update machine components ensures a long life for the machine and its various wear parts.

X-Series TU Testers

By installing, maintaining, and supporting hundreds of CX111 PCR/LT machines in manufacturing plants all over the world, the Poling Group saw the immediate demand for the same repeatable precision-testing on motorcycle and truck/bus (CVT) tires, as they've come to expect with our CX111 TUs. Responding to this demand, the Poling Group builds the MCX75 TU (motorcycle), and X150 TU (Truck/Bus) with the same technologically-advanced subsystems, assemblies, and components as our benchmark CX111 TU to provide an industry-leading machine in durability and accuracy, for all tire sizes.

Through improvements to the hydraulics, motion systems, lasers, software, electronics, and even steel, we have created the next generation of these robust testing machines. Our controls, electronics, and software are updated with several patented devices and algorithms that make the X-Series TU Testers on the forefront of seamlessly integrating machine durability, reliability, low cycle time, predictive maintenance, top notch diagnostics, accurate data acquisition, and data analytics.

Standard Features

- › TTOC6 Machine Controller
- › TDAQ - Tire Data Acquisition
- › Timing Belt Center Conveyor
- › Anti-mischuck system
- › Servo controlled spindle motor (precise positioning for marking and barcode spotting)
- › Precision spindles and bearings
- › Frictionless loadwheel carriage
- › Loadwheel characterization hardware & software
- › Communications software and interfaces to upper level computers, MES, external PLCs
- › Waveform Validation & Correction (WVC)
- › TAIR with Air Learn Software for quick inflate and precise regulation

Optional Equipment

- › Full list of Optional Equipment is listed on [Pg. 15](#).



MCX75 TU
Motorcycle







CX111 TU
Car / Light Truck

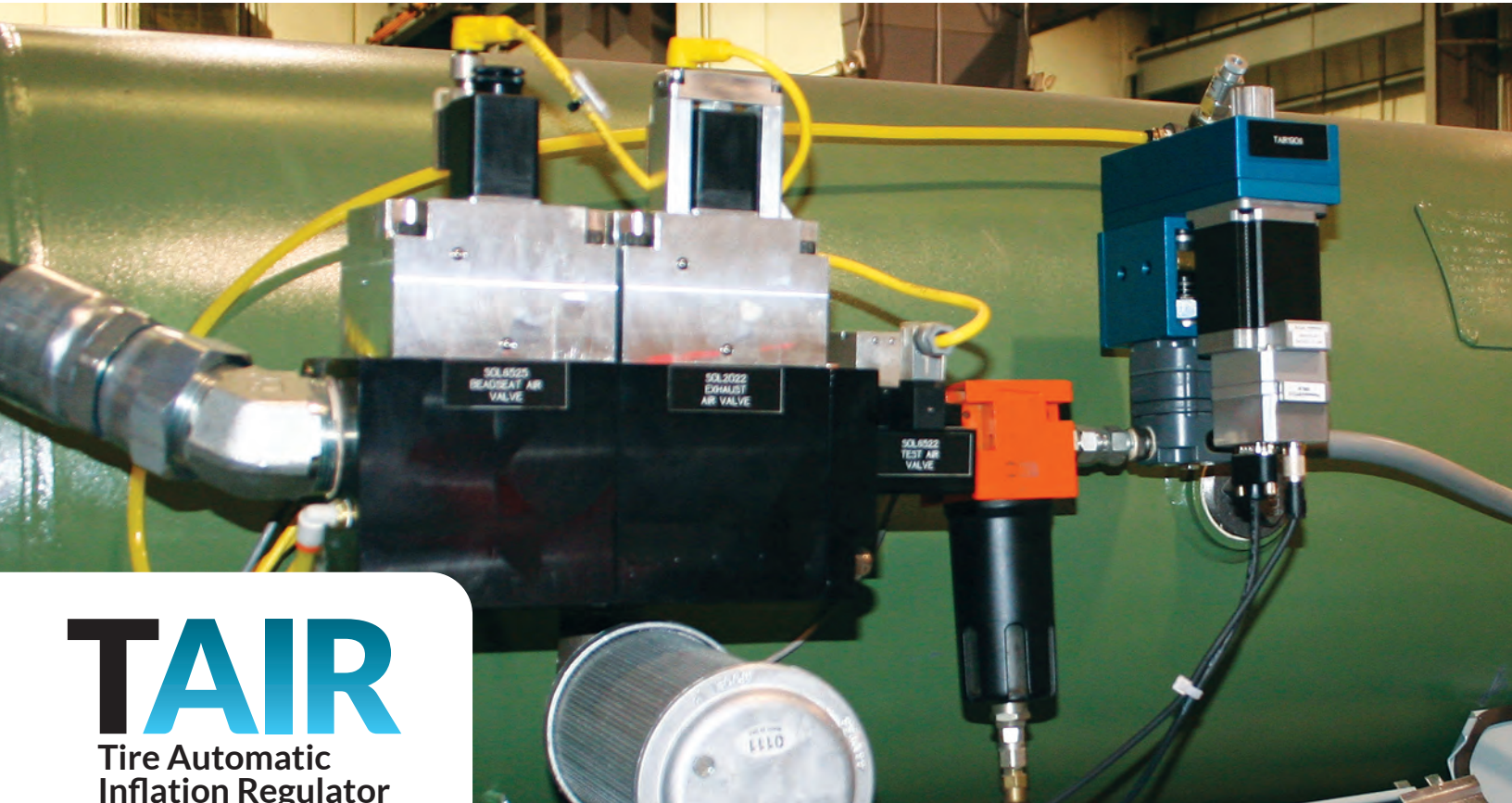


X150 TU
Truck / Bus

Visit PolingGroup.com for complete spec list

 Outside Diameter	Min. Max.	22 in 32 in	559 mm 813 mm	Min. Max.	20 in 42 in	508 mm 1067 mm	Min. Max.	26 in 60 in	660 mm 1524 mm
 Rim Width	Min. Max.	3 in 11 in		Min. Max.	3 in 17.5 in		Min. Max.	6 in 24 in	
 Applied Load	Max.	4,000 lbf	1780 daN	Max.	4,000 lbf	1780 daN	Max.	16,000 lbf	7,117 daN
 Cross Section Width	Max.	13.5 in	343 mm	Max.	18.5 in	470 mm	Max.	27.5 in	698 mm
 Bead Diameter	Min. Max.	15 in 21 in	381 mm 533 mm	Min. Max.	14 in 30 in	356 mm 762 mm	Min. Max.	16 in 25.5 in	406 mm 648 mm

X-Series Advantages



TAIR

Tire Automatic
Inflation Regulator

The Poling Group designed the Tire Automatic Inflation Regulator (TAIR) system to be the perfect complement to our proprietary WVC (Waveform Validation & Correction) method of tire testing.

Accurate

Unlike analog alternatives that are highly susceptible to electrical noise, TAIR's digital regulator does not change the pressure sporadically, or at inopportune times.

Fast

The TTOC machine controller uses its WVC software algorithms to "LEARN" about the tire testing machine, its air supply and the dynamics of the air system. After the bead-seat stage of inflation, the main valves are switched to enable the regulated tire test air supply. A resulting pressure "undershoot" response always follows this event, and the air regulation system must compensate for it.

Without WVC/TAIR, this process adds significant cycle time while the machine controller waits for inflation to reach set point. With WVC/TAIR, the additional time taken to reach the desired pressure set point is virtually eliminated. In this case, the point of quiescence (no further air adjustment) is reached almost instantly!

TAIR System hardware consists of:

- › Servo driven digital regulator
- › Air surge regulator
- › Air dryer/debris collector
- › Optional reverse direction air-assist valve
- › Industry standard two poppet valve system & muffler
- › Air supply blocking poppet valve

The TTOC testing machine controller directs the TAIR system, resulting in quick, yet accurate, adjustment of the air system to new inflation set points. This is of particular benefit if your testing machines process tires in mixed mode (lot size = 1), or your tests routinely require multiple pressure inflation set points.

The same methodology actuates the main valves in the reverse direction to enable the air system to more quickly reach air pressure quiescence after tire reversal. As a result, air quiescence always occurs at the earliest point possible, remains stable throughout testing and makes the data more repeatable.

Any TTOC-controlled testing machine with WVC and TAIR can now measure more quickly, and with enhanced radial force repeatability. Another reason why Poling Group machines are SMARTER. FASTER. STRONGER.

Automatic Adjustable Width Chuck (AAWC)

Updates to the AAWC stem increase cycle life and reduce failure:

- > A deeper undercut diameter along the nose cone traps debris with less chance of scoring and galling
- > We doubled the number of grease grooves and enlarged the grease feed holes

The AAWC is available for all new Poling Group tire uniformity and geometry machines, or available as a retrofit option.

THE RESULT: A machine with the Automatic Adjust Width Chuck processes a wider range of tire widths, without manual adjustment. Delivery of the chuck width in the tire recipe reduces setup time, increasing machine throughput.



Patented Main Spindle Assembly

Our patented "cartridge" design main spindle assembly, now a standard feature for all X-Series TU Testers, makes it possible to completely replace a test machine spindle assembly in about 3 hours, greatly reducing changeover downtime.

With properly trained associates, you can rebuild the assembly in the plant workshop. Another popular option is to take advantage of our spindle exchange program - replace your worn-out spindle with our factory rebuilt cartridge assembly, then return the old spindle to us. We'll only charge you for the necessary replacement parts and rebuild labor.

THE RESULT: Stronger spindle assembly is easier to maintain with or without our after-market service.



THE POLING GROUP KNOWS

Controls & Data

TTOC6

More than just a controller.



Standard on new test machines and available as an upgrade, **TTOC6 • TDAQ** greatly improves the speed and reliability of tire test data acquisition



Simplified Maintenance

- › Fewer electronic parts, less points of failure, and better reliability
- › “Instant Message” support at every machine and extensive online help



Adapts to your Control Methodology

- › Variety of customizable architectural implementations
- › Choose your PLC
- › Distributed or rack I/O



Easy to Use Graphic-Based UI

- › Machine visualization screens convey tire position and machine status "at a glance"
- › Real-time and oscilloscope plotting modes
- › Real-time production and maintenance statistics display on demand
- › Action Viewer tracks all configuration/calibration changes to TTOC6 by user/date/time



Improved Capability

- › Air Learn software that monitors the machine's air regulation performance statistics to quickly stabilize tire inflation to the desired set point
- › Tire motion algorithms, along with WVC and TDAQ, allow a testing machine to test, mark, and sort more than 3 tires every minute, while maintaining industry-required measurement repeatability

Exclusive Software for TTOC6



With advances like Waveform Validation and Correction (WVC) and Machine Effect Characterization and Compensation (MECC), the TTOC6 Controller actually “learns” about machine and tire characteristics to deliver the fastest throughput and most accurate results available.

WVC

Waveform Validation
& Correction

TTOC SOFTWARE BY CTI

Better Measurement Quality

This proprietary and industry-leading process of *waveform collection / validation / potential waveform correction* results in tires tested more accurately and with greater repeatability, within a much faster measurement cycle.

Learn more at :

PolingGroup.com/wvc_software

MECC

Machine Effect Characterization
and Compensation

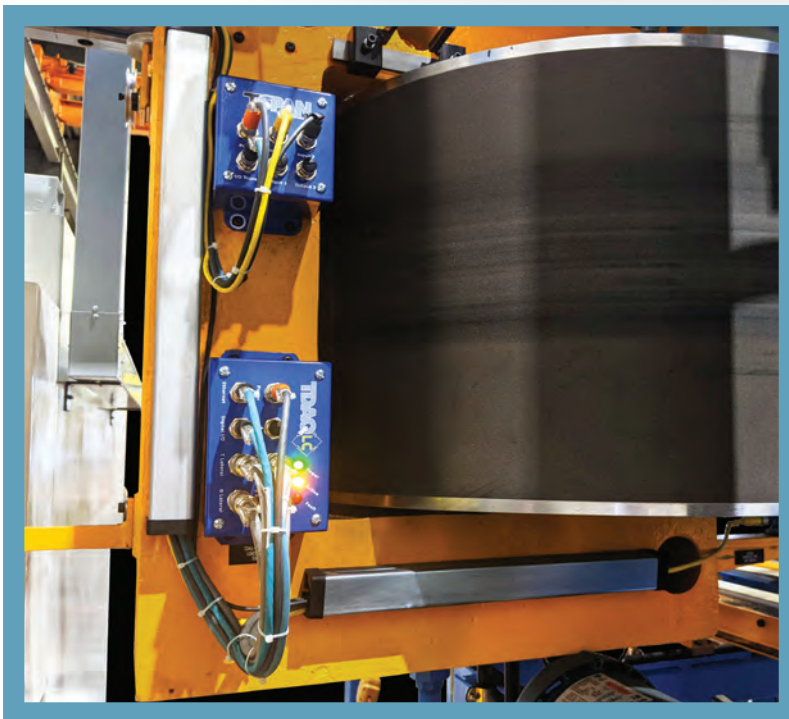
TTOC SOFTWARE BY CTI

Smarter Testing

This patented concept for *characterization of mechanical deficiencies and then compensation to mitigate the effect they have on the measurement* is a huge step forward in advanced tire uniformity measurement methods.

Learn more at :

PolingGroup.com/mecc_software



TDAQ

TIRE DATA ACQUISITION

Designed by the CTI Division to process the load cells, pressure transducers, and other key tire test machine sensor signals, the TDAQ and TDAQ-LC have emerged as a robust and economical way to:

- › Simplify field wiring
- › Locate data acquisition closer to the source
- › Produce stronger and cleaner signals to bring about a substantial increase in resolution

Durability is a hallmark of the TDAQ design. Over 600 units currently provide full-time service on machines around the world.

While modern PLCs peak at about 1,000 I/O per second, TDAQ runs at a lightning-fast 16,000. But its real power comes from the ability to make split-second decisions without relying on outside commands from the machine controller.

THE POLING GROUP KNOWS

Geometry Testing



Features include:

- › Automatic detecton of test regions (with manual override)
- › Store thousands of tire images for later inspection
- › Perform a complete geometry setup from a single screen
- › Save geometry setup directly to your host. Don't have a host? Check out our Final Finish Host (FFH) solution (pg. 25)

Geometry testing has never been smarter!

Our new TSAS incorporates our patented Multi-Path Inspection (MPI) algorithm, complex mathematics, and 3D line laser scanning to locate and accurately measure a tire's geometry, including bulges, depressions, runout, and wobble.

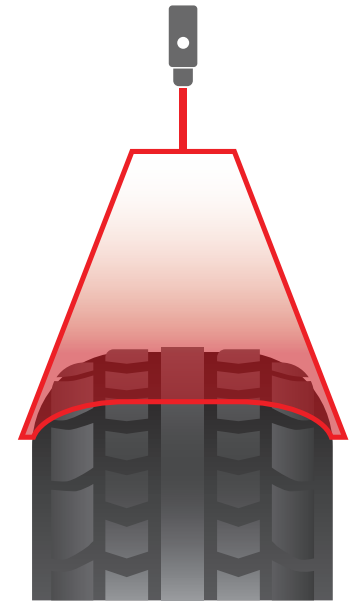
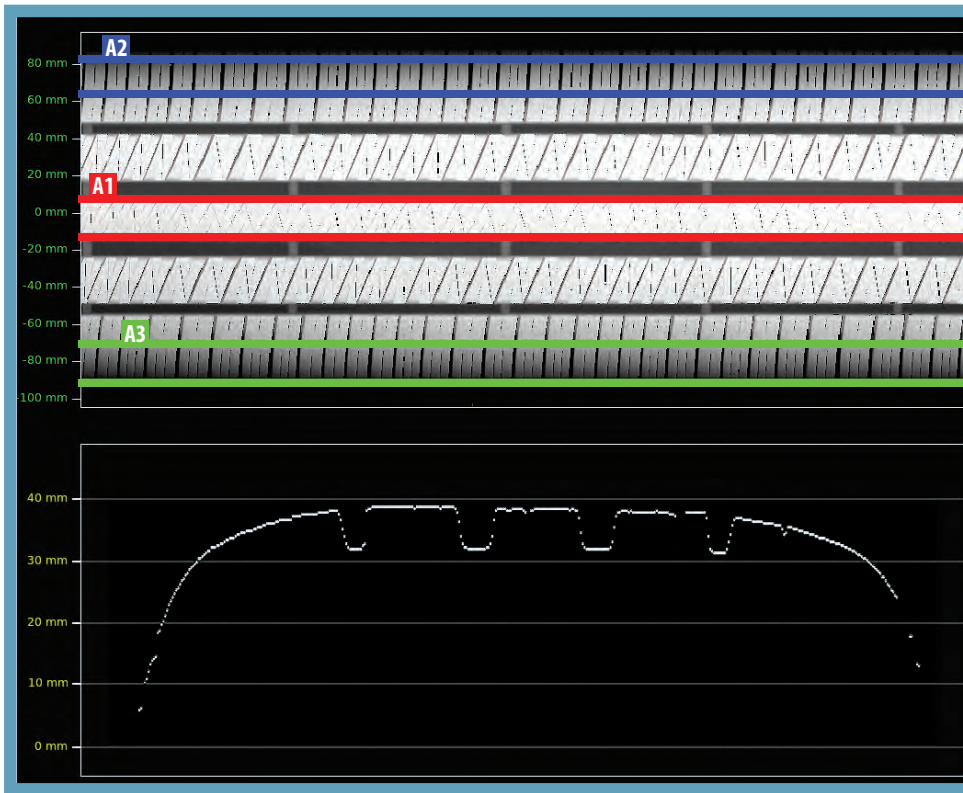
The TSAS is available as a fully integrated TTOC6 controller option or as a standalone unit for replacement of your inadequate sidewall or RRO System.

The Poling Group's new **Geometry Verification Wheel** provides the quickest way possible to verify your LRO/RRO geometry testing lasers. The verification wheel chucks directly on your testing machine's current rims (up to 20") and, therefore, requires no machine requalifying after verification, since the rims are not removed.

Sidewall (Lateral): Both sidewall faces consist of four bulge/depression plates of varying heights. A ring on the outer 1" has lateral runout of 0.015".

Tread (Radial): Three bands on the "tread" surface of the wheel each have a different radial runout for verification of the RRO laser measurement. An optional insert can be used to measure tread bump/dent (a.k.a. TDIP).

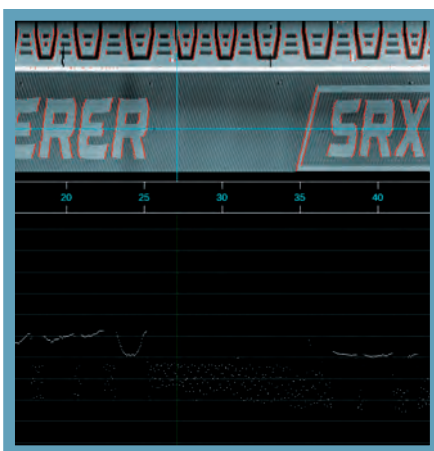
TSAS now supports new, larger tread measurement lasers.



The TSAS tread laser can cover the entire tread and shoulder area in one pass.

For the tread measurement, TSAS now incorporates a line laser, with a larger field of view for viewing the whole tread of a tire—shoulder to shoulder (maximum 375mm). Establish regions of interest using the on-screen recipe editor, or allow the TSAS system to choose the optimal region for each tire automatically.

Measure up to 32 harmonics for top, bottom, and center RRO in a single pass, saving cycle time and energy. When coupled with the Poling Group's grinding option, TSAS feeds geometry data directly to the grinders for precise grinding of the tread, covering both the center and shoulder regions. After grind, TSAS results can be used to determine exactly how much material was removed in the process.



TSAS Features Automatic 'Letter Elimination'

TSAS detects and ignores lettering and artwork on a tire's sidewall, which drastically reduces false-positive test results (Alpha-misses) and increases throughput.

This feature, along with the many other features in our TSAS algorithm, allows our customers the most flexibility, by recipe, for testing all tire designs.

TSAS also supports traditional 'spot lasers' (fixed point lasers), which utilize our patented MPI (Multi Path Inspection) software, and are significantly less expensive than line lasers.

THE POLING GROUP KNOWS

Testing Options



Automatic Drive Roll Bead Luber

Updating your process to handle mixed mode production?

Our Drive Roll Bead Luber automatically handles a full range of tires arriving at the machine with no downtime for manual adjustment. Long-lasting steel drive rolls quickly and effectively center and lubricate each tire's bead to improve repeatability without sacrificing cycle time.

Integrate a barcode reader to accurately position tires relative to the machine's spindle location (i.e., barcode spotting), which simplifies testing waveform/data analysis and enables offline marking.



“Auto Position” Shoulder Grinders

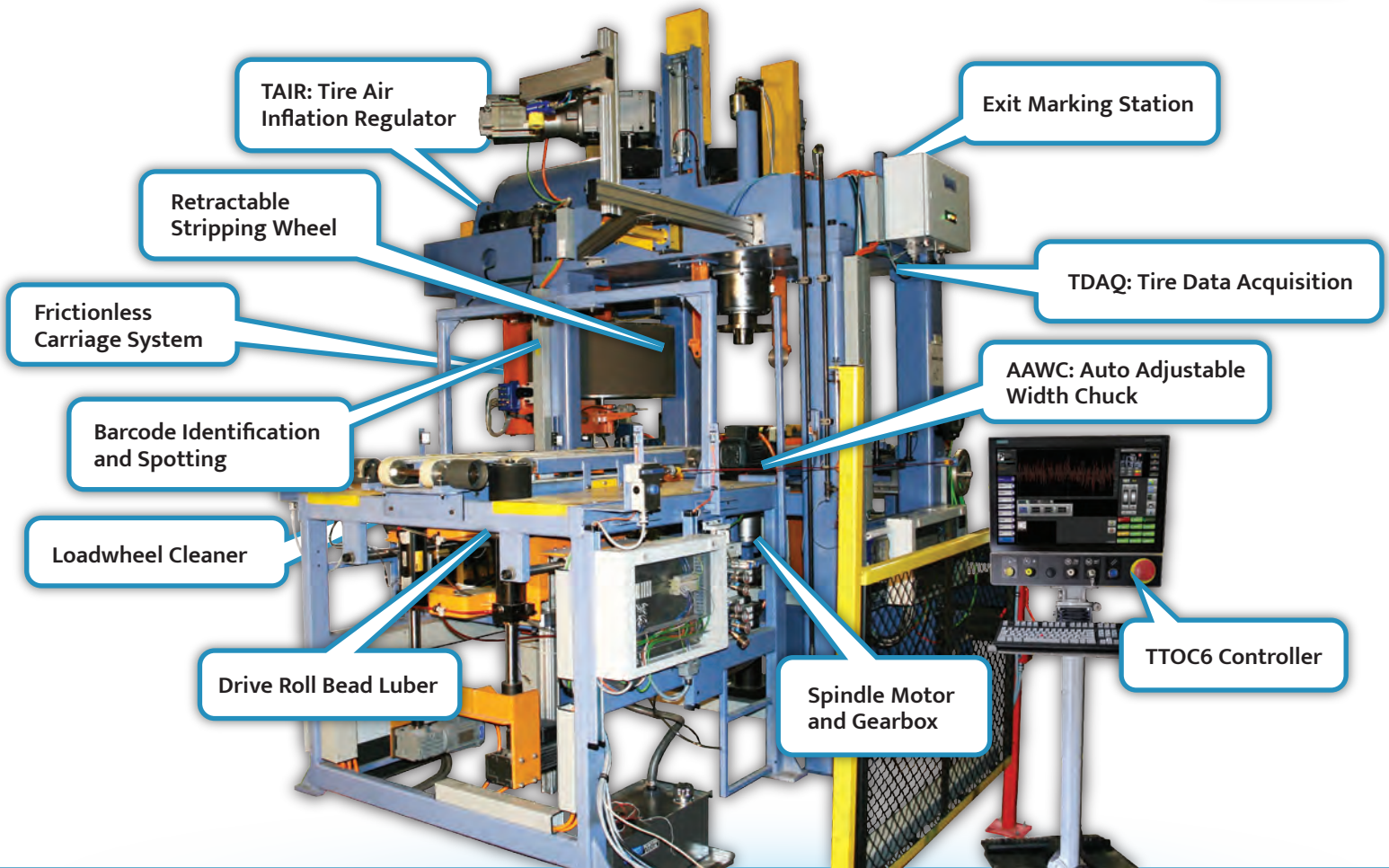
Proprietary and patented algorithms enable precise positioning to ± 0.001 " (0.025mm).

They also calculate an optimal grind depth that not only reduces grinding time but greatly improves tire appearance.

- › Movable hand-held manual control station provided to assist initial setup.
- › Extended range of adjustment covers a full range of tire sizes.
- › Grinder parameters programmed as part of the recipe setup.
- › Available for all models of tire uniformity machines; easy to retrofit to existing machines.
- › Utilizes THK linear bearings for precise low friction vertical movement.
- › Four servo motor driven electric cylinders provide position adjustments.

PATENTS - 6431963, 6620030, 6773334, 6786800

Cost-effective options and upgrades that extend machine capability



Electrical Controls

- TTOC6 Controller
- TDAQ - Tire Data Acquisition
- TAIR - Tire Automatic Inflation Regulator
- Mobile Panel
- Encoder
- Waveform Validation & Correction (WVC)
- Machine Effect Characterization and Compensation (MECC)
- Air Learn

Geometry Testing

- Multi-Path Inspection of Sidewall (MPI)
- Tire Sidewall Analysis System (TSAS)
- Runout Transport
- Low-Cost RRO
- RRO Probe Replacement
- Laser Verification Wheel

Tire Positioning

- Drive Roll Bead Luber (Automated Mixed Mode Luber)
- Auto-Adjustable Width Chuck
- Timing Belt Center Conveyor
- Upper Spindle Assembly
- Spindle Motor and Gearbox
- Retractable Stripping Wheel
- Retro-Fit Stripping Wheel
- Anti-mischucking System
- Sorting Elevator
- Multi-level Sorting Conveyor

Grinding

- Auto-position Shoulder
- Dual Inline Shoulder
- Auto-position Center
- Grind Dust Removal System

Tooling

- Precision Test Rims
- Quick Rim Changeover

Marking

- Internal Marking Transport
- Exit Marker Station
- Hot Stamp Marker
- LTA Marker

Other

- Calibration
- Exit Drop Conveyor
- Loadwheel
- Loadwheel Cleaner
- Hydraulic Power Unit
- Frictionless Carriage
- Loadwheel Motor/Drives

THE POLING GROUP KNOWS

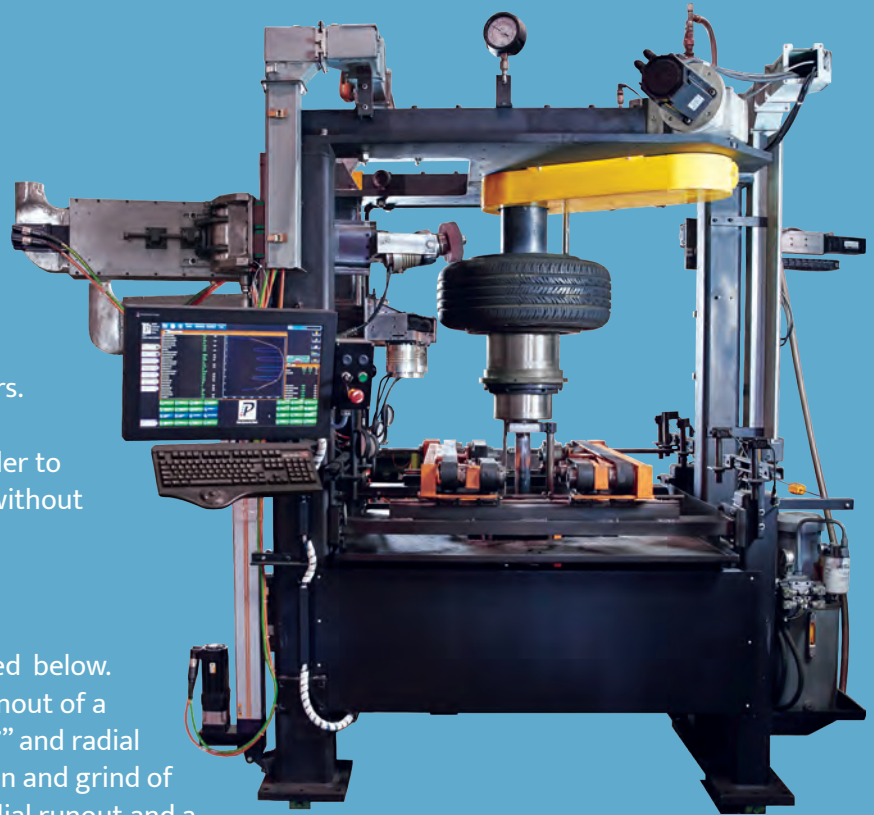
Tire Grinding & Buffing

PGM
Profile Generating
Machine



Increase Yield and Improve Customer Satisfaction

The PGM is a recipe-driven system that increases the ability of a tire manufacturer to supply consistently round tires, with identical diameter and profile, to the most demanding end-customers. Patented worldwide, the PGM uses dual precision grinder units, a laser, and Windows-based controller to reduce radial force, radial runout, and conicity -- without compromising finished tire appearance!



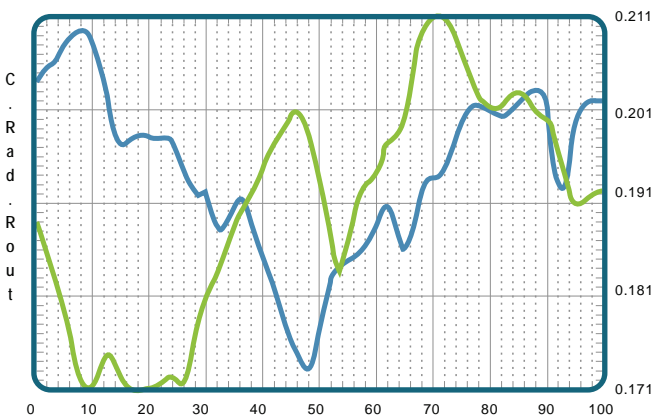
The Proof is in the Results

Consider the results of this trial, charted below. Before profile generating, the radial runout of a locally purchased, 15" replacement tire was 0.0317" and radial peak-to-peak force was 22.4 lbs. After a profile scan and grind of 0.028", the new test waveform shows 0.0035" radial runout and a drop to 17.6 lbs. of radial peak-to-peak forces. Conicity was corrected from -5.2 lbs. to +0.3 lbs.

In this trial, the grinders ran at 10,000 rpm with a feed rate of 0.062" per second. The grinders shaved a total of 0.028" off the outside diameter of the tire in two passes within a cycle that totaled 103 seconds.

Before PGM

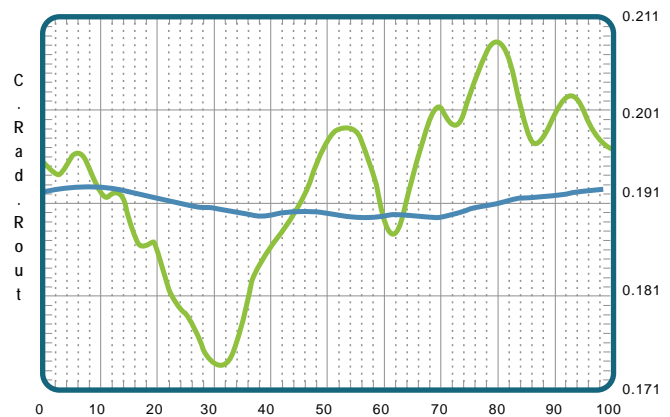
C. Rad. Rout Radial Load



RPP	RH1	CON	CRRO
22.4	15.8	-5.2	36.7

After PGM

C. Rad. Rout Radial Load



RPP	RH1	CON	CRRO
17.6	10.7	0.3	3.5



UFT-111 Universal Flash Trimmer

Patented Automated Flash Trimming

The patented Poling Group UFT-111 automates the task of flash grinding traditionally performed by an operator. The trimmer's two independent sanding discs automatically trim vertical and top mold flashing based on recipe information entered directly at the controller or supplied via scanned tire barcode for mixed mode operation.

The UFT-111 can quickly, easily, and consistently process any tire tested on our CX111 TU machine.



 Outside Diameter				 Rim Width				 Cross Section Width			
Min.	22 in	559 mm		Min.	3 in	76 mm		Min.			
Max.	42 in	1067 mm		Max.	17.5 in	445 mm		Max.	18.5 in	470 mm	




Model 1325 & 1342 Sidewall Buffers

Increase productivity and reduce downtime

The Firwood Division Sidewall Buffers satisfy both requirements. The Model 1325 & 1342 are precise and unique sidewall buffers due to their incredibly sturdy frame and locking chucks that have a 100 PSI specification.

And like all Poling Group products, it's built to last!



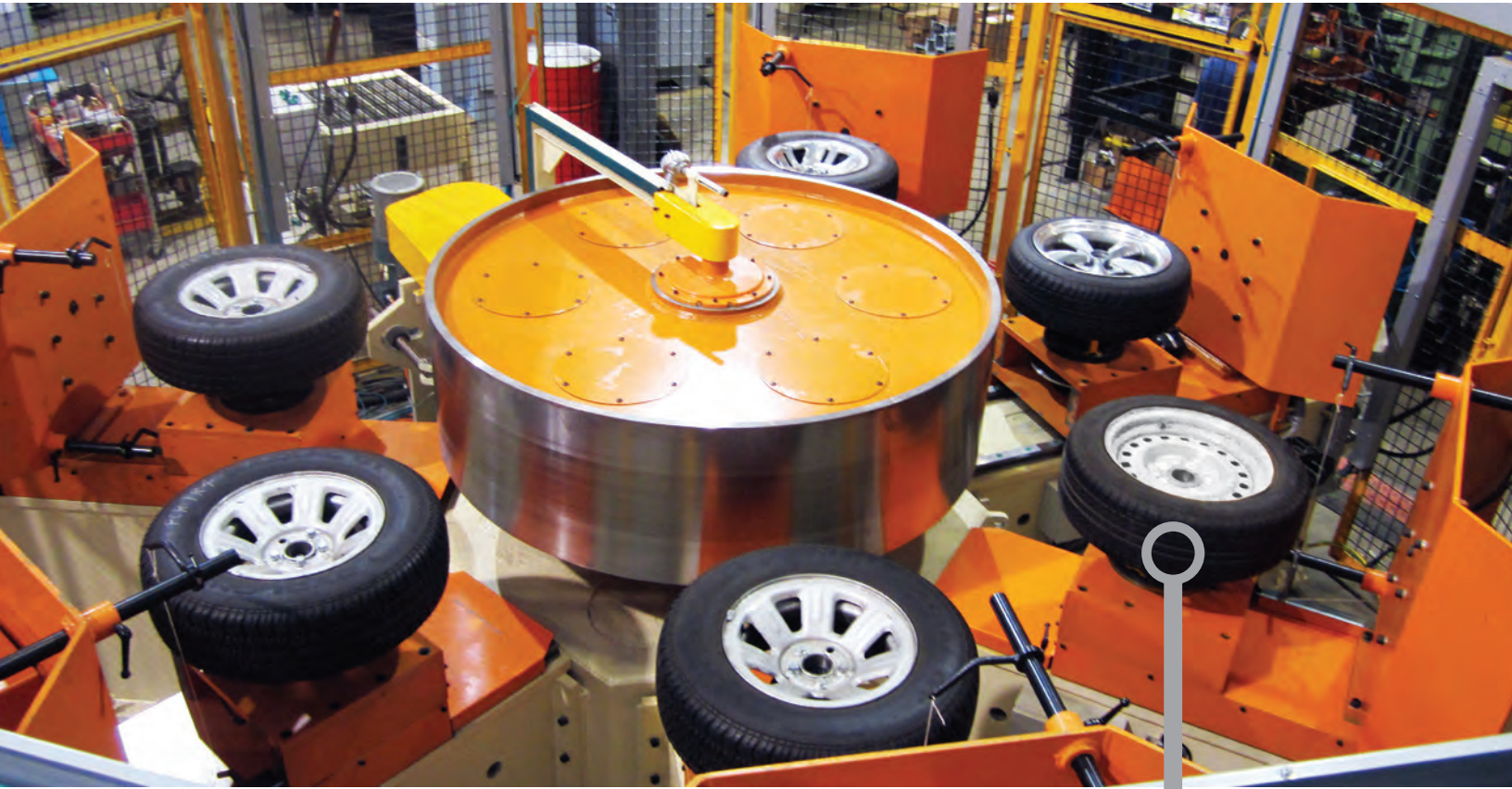
 Outside Diameter				 Pass Through				 Bead Diameter				
1325	Min.	20 in	508 mm	Min.	14 in	356 mm	Min.	13 in	330 mm	Max.	20 in	508 mm
	Max.	36 in	914 mm					Max.	24 in		610 mm	
1342	Min.	20 in	508 mm	Min.	18 in	457 mm	Min.	15 in	381 mm	Max.	24 in	610 mm
	Max.	42 in	1067 mm					Max.				

THE POLING GROUP KNOWS

Laboratory Tire Testing

HASBACH

DIVISION



Global tire standards and labeling requirements mean increased testing demands for government agencies, tire manufacturers, and third-party test centers.

The Poling Group offers a complete line of durability, tire noise, high speed uniformity, force & moment, and rolling resistance machines designed to properly qualify tires for the international marketplace.

Our machines come with selectable options and customizable features to help you address specific challenges like range of tires tested, types of testing required, and available floor space.



All Poling Group Divisions pride themselves on the flexibility and customization of their products to fit the client's needs. The Hasbach Division of the Poling Group met a customer's need for a multi-tire laboratory testing station, by creating this *Custom 6-Position Endurance / Durability Tester*.

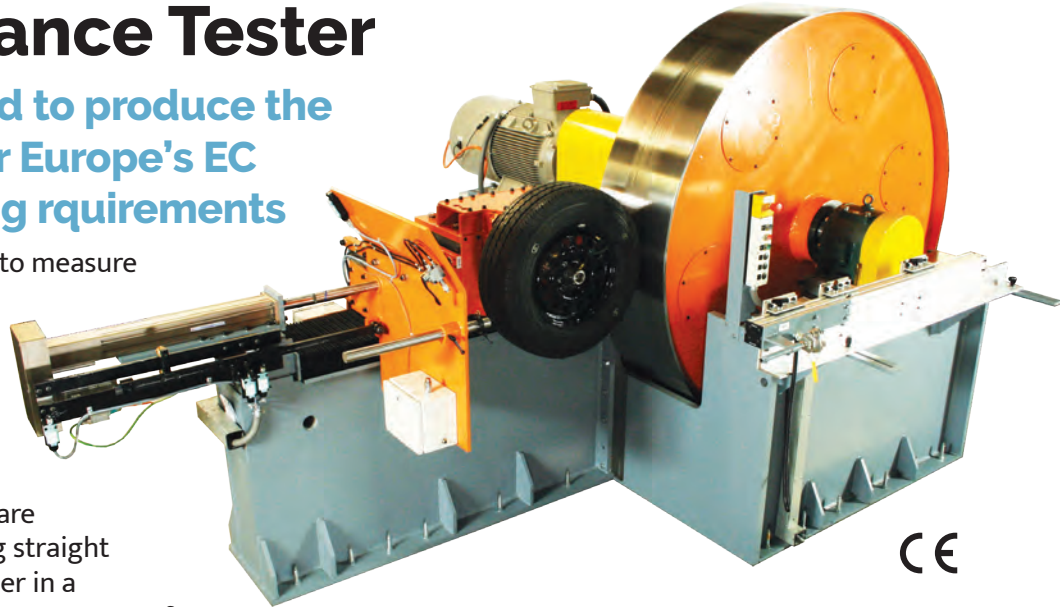
Contact the Poling Group's Hasbach Division at Sales@PolingGroup.com to find the perfect solution to your Laboratory Tire Testing needs.

Rolling Resistance Tester

Provides testing needed to produce the fuel efficiency rating for Europe's EC 1222/2009 tire labeling requirements

This machine uses the torque method to measure rolling resistance, under controlled laboratory conditions, for new motorcycle, passenger/light truck, or truck/bus pneumatic tires. It correlates measurement results to enable inter-laboratory comparisons.

Add the optional camber unit to compare rolling resistance from tires free-rolling straight ahead to a steady-state tire with camber in a position that is perpendicular to the drum outer surface.



Standard Features

- > Touch screen controller and ethernet communications
- > Frictionless radial load assembly platform (patented)
- > A/C drive control
- > Servo electro spindle for radial load
- > High accuracy torque method via torque shaft
- > Two plane high dynamic balanced drum
- > High natural machine frequency
- > No machine foundation required
- > Designed for container shipment
- > SAE: J2425 ISO: 28580 Rolling Resistance Standard

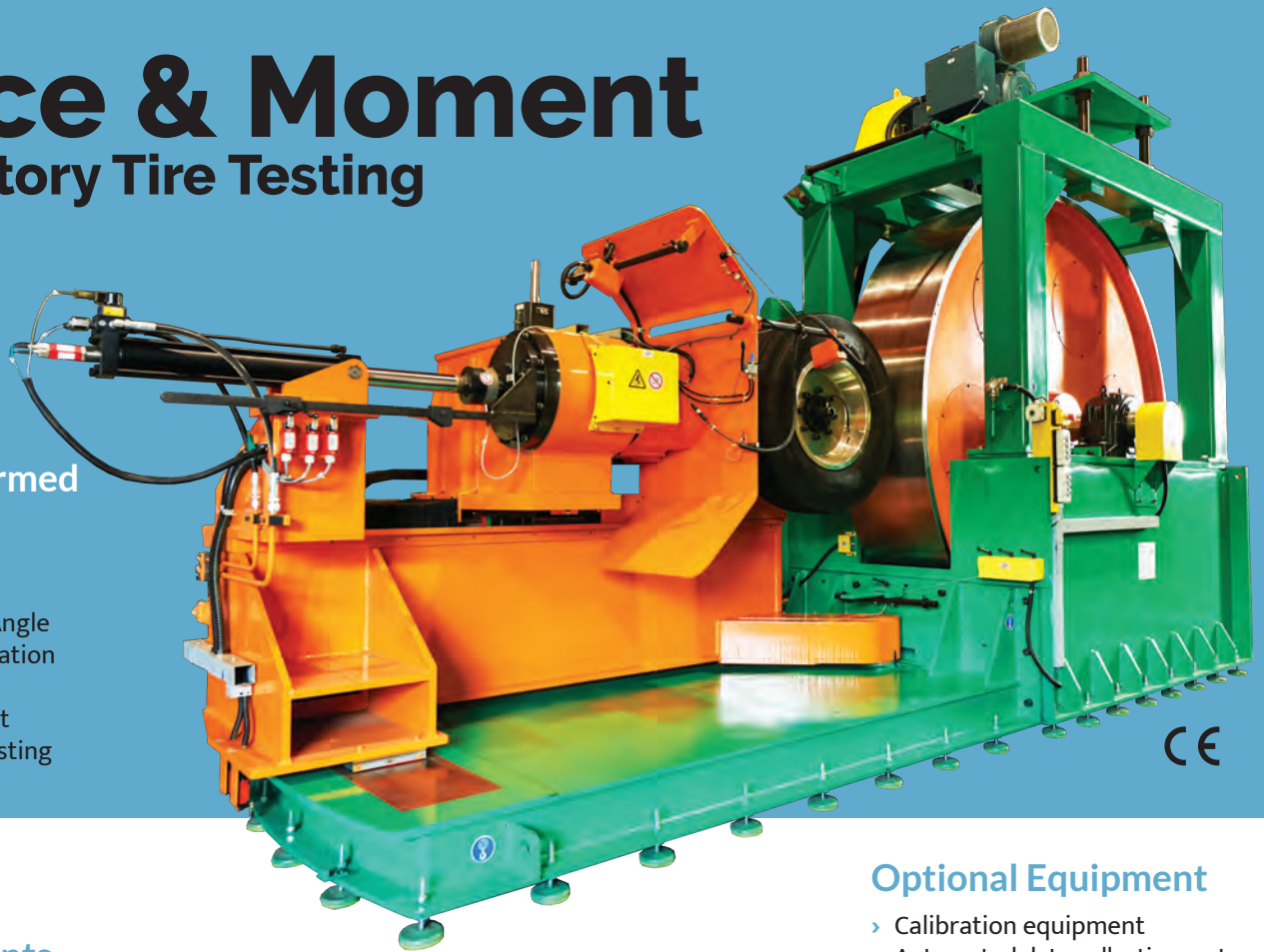
Testing Options

- > Deflection measuring
- > Tests Tire Inside Temperature
- > Tests Tire Outside Temperature
- > Tests Tire Radius Circumference
- > Capped and regulated air
- > Camber +/- 6 degrees
- > Tire inflation and regulation unit
- > Rolling resistance retrofit to existing machines

Motorcycle	USA	Metric		USA	Metric
Tire Outside Diameter Range	15.75 - 39.37 in	400 -1000 mm	Cross-Section Width	11.81 in	300 mm
Rim Width	3 - 11 in		Tread Width	Max 11.81 in	Max 300 mm
Inflation Pressure	Max 72 psi	Max 500 kPa	Test Load Maximum	2,248 lbf	1,000 daN
Loadwheel Diameter/Width	67.2 / 11.81 in	1707 / 300 mm	Test Speed Maximum	0-75 mph	0-120 kph
PC/LT	USA	Metric		USA	Metric
Tire Outside Diameter Range	15.7 - 43.3 in	400-1,100 mm	Cross-Section Width	19.6 in	500 mm
Rim Width	3 - 17 in		Tread Width	Max 17.7 in	Max 450 mm
Inflation Pressure	Max 95 psi	Max 655 kPa	Test Load Maximum	4,500 lbf	2,000 daN
Loadwheel Diameter/Width ■	67.1 / 19.7 in	1,707 / 500 mm	Spindle Speed	0-100 mph	0 - 160 km/h
Truck/Bus	USA	Metric		USA	Metric
Tire Outside Diameter Range	23.6 - 63 in	600 - 1,600 mm	Cross-Section Width	21.6 in	550 mm
Rim Width	6 - 16 in		Tread Width	Max 20 in	Max 500 mm
Inflation Pressure	Max 145 psi	Max 1,000 kPa	Test Load Maximum	11,000 lbf	5,000 daN
Loadwheel Diameter/Width ■	67.1 / 19.7 in	1,707 / 500 mm	Spindle Speed	0-75 mph	0 - 120 km/h

■ Optional loadwheel diameter of 78.7 in / 2,000 mm

Force & Moment Laboratory Tire Testing



Tests Performed

- › High Speed
- › Durability
- › Bead
- › Camber & Slip Angle
- › Belt Edge Separation
- › Tire Side Force
- › Force & Moment
- › Run-Flat Tire Testing

Measurements

- › Tire elapsed distance
- › Tire load and speed
- › Tire radius / circumference
- › Tire deflection
- › Tire ambient temperature
- › Optionally measures tire internal and tread temperatures, and RFT (run flat tires)

Standard Features

- › Frictionless loadwheel carriage
- › Hydraulic system
- › PLC controller Siemens / Allen Bradley
- › Tire Burst detection unit
- › Tire inflation and speed regulation unit

Optional Equipment

- › Calibration equipment
- › Automated data collection system
- › Camber assembly
- › Drum brake
- › Lateral side force
- › Machine guards
- › Precision test rims
- › Rolling resistance unit
- › Slip angle assembly
- › 6 axes load cell

PC/LT

	USA	Metric		USA	Metric
Tire Outside Diameter Range	15.7 - 43.3 in	400-1100 mm	Cross-Section Width	Max 21.6 in	Max 550 mm
Rim Width	3 - 17 in		Tread Width	Max 19.6 in	Max 500 mm
Inflation Pressure	Max 95 psi	Max 655 kPa	Test Load Maximum	11000 lbf	5000 daN
Loadwheel Diameter/Width ■	67.1 / 19.7 in	1707 / 500 mm	Spindle Speed	0 - 310 mph	0 - 500 km/h

■ Optional loadwheel diameter of 78.7 in / 2000 mm

Truck/Bus

	USA	Metric		USA	Metric
Tire Outside Diameter Range	23.6 - 63 in	600 - 1600 mm	Cross-Section Width	Max 21.6 in	Max 550 mm
Rim Width	6 - 16 in		Tread Width	Max 19.6 in	Max 500 mm
Inflation Pressure	Max 145 psi	Max 1000 kPa	Test Load Maximum	22000 lbf	10000 daN
Loadwheel Diameter/Width ■	118.1 / 19.7 in	3000 / 500 mm	Spindle Speed	0 - 125 mph	0 - 200 km/h

■ Optional loadwheel diameter of 67.1 in / 1707 mm

Force & Moment for Motorcycle Tire Testing

F&M Tester for motorcycle tire, measuring Tire Characteristics with Camber Angle up to +/-55 deg. and +/- 15 deg. Slip Angle fully dynamic simultaneously.

Measures Fz/Fy/Fx as well as Mz/My tire coordinates under extreme angles.



Motorcycle	USA	Metric		USA	Metric
	Tire Outside Diameter Range	15.75 - 39.37 in		400 -1000 mm	Cross-Section Width
Rim Width	3 - 11 in		Tread Width	Max 11.81 in	300 mm
Inflation Pressure	Max 72 psi	Max 500 kPa	Test Load Maximum	2,248 lbf	1,000 daN
Loadwheel Diameter/Width	67.2 / 11.81 in	1707 / 300 mm	Spindle Speed	0-75 mph	0-120 km/h

Laboratory Endurance Testing

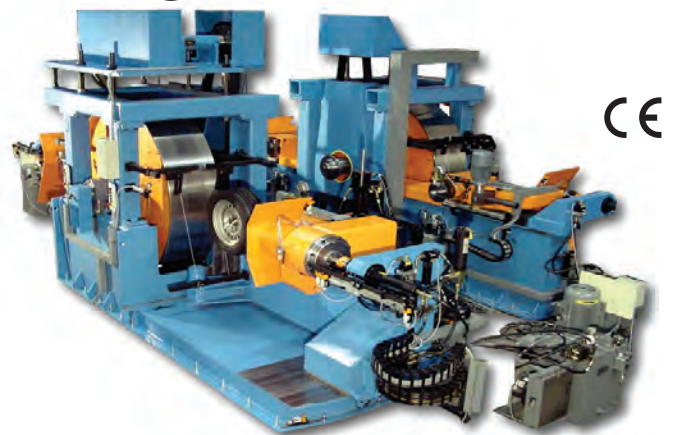
These machines from the Hasbach Division can provide High Speed Endurance, Bead, and Camber & Slip Angle testing.

Measurements

- > Tire elapsed distance
- > Tire load and speed
- > Tire radius / circumference
- > Tire deflection
- > Tire ambient temperature
- > Optional: tire internal and tread temperatures

Standard Features

- > Frictionless loadwheel carriage
- > Hydraulic system
- > PLC controller Siemens / Allen Bradley
- > Tire Burst detection unit
- > Tire inflation and speed regulation unit



PC/LT	USA	Metric		USA	Metric
	Tire Outside Diameter Range	15.7 - 43.3 in		400-1100 mm	Cross-Section Width
Rim Width	3 - 17 in		Tread Width	Max 19.6 in	Max 500 mm
Inflation Pressure	Max 95 psi	Max 655 kPa	Test Load Maximum	11000 lbf	5000 daN
Loadwheel Diameter/Width	67.1 / 19.7 in	1707 / 500 mm	Spindle Speed	0 - 310 mph	0 - 500 km/h

■ Also available for testing Truck / Bus Tires

THE POLING GROUP KNOWS

Millroom Equipment



Next Generation 1270 combines field-proven strength and reliability with new accuracy and labor-saving features.

With a heavy duty cutter frame fabricated from plate and structural steel, our latest slab cutter/feeder features a precision-machined cutter and anvil driven by a fixed speed gear motor and gears. The knife/anvil assembly mounts onto piloted bearings (consisting of double-row spherical roller bearings) and installs into line bored housings.

Cut pieces drop onto a weigh conveyor that sends a precise measurement to the control system. As the measurement nears target weight, the system automatically slows the conveyor to reduce piece size until the target is met - achieving more accuracy while reducing labor costs.



NG 1270
Slab Cutter/Feeder

Modular Flex design allows the fastest change-out of knife/anvil assembly in the industry

NG 1270 Standard Features

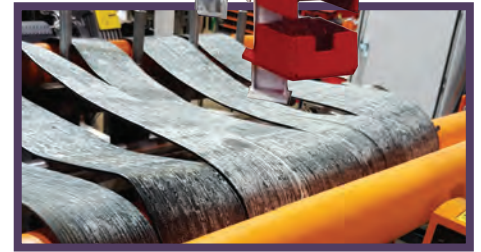
- › Cuts up to 3 thicknesses with an occasional fold
- › Knives and Anvil are made from Tool Steel
- › Heavy duty gears used to drive the cutter
- › ANSI guards including conveyor safety cable
- › Heavy duty frame and stand

Optional Equipment

- › ANSI approved complete drive and control packages
- › Plastic conveyor belt with pneumatic take-up
- › Centralized lubrication system
- › Integrated weigh and charge conveyors
- › Sized to fit your stock requirements

S2S Slitter

Cold Slab Stock Cutting Solution



To meet our customers' demands for precision strip production, we've introduced our New S2S Series Slitter. The S2S is a newly designed offline Cold Slitter with Automatic Strip Separation and Handling to a pallet/basket, offering the precision and flexibility the industry demands. This Slitter System is made up of an Intralox Belt Feed Conveyor feeding stock into the Slitter with a motor-driven quick change Slitter Assembly and two integrated pull roll assemblies.

The S2S series offers a quick change knife cartridge, allowing customers to quickly adjust for multiple strip sizes. With a minimum strip size of 25mm and the ability to increase the strip size in increments of 25mm, the S2S Series Slitter handles full or half sheets of incoming wig-wag, up to 75 ft (23 m) per minute, that is cut to customer specifications.

[Contact the ASF Division \(pg. 27\) to learn more.](#)

For over 70 years, the ASF Division has produced well-designed millroom machinery that is strong, reliable, and most importantly, customizable.

Conveyors

- › Wig-Wag type conveyors
- › Reciprocating conveyors
- › Fixed conveyors

Splice Press

- › Electrically heated or steam heated
- › ANSI-approved controls

Accumulator

- › Available in any size storage capacity
- › Chrome plated rolls as required
- › Easy thread option available

Let-offs

- › Dual let-offs, with or without guiding
- › Liner rewind, with or without guiding
- › Male or female chucks

Pull Roll Stands

- › Manufactured to your tension requirements
- › Available with hold and cutting feature

Wind-ups

- › Surface wind-up
- › Dual wind-up
- › Shuttle type wind-up

Blister Breakers

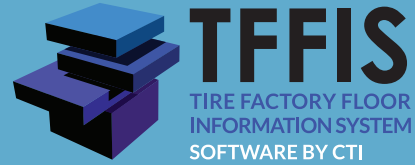
- › Fixed blade systems
- › Reciprocating blade systems
- › Multi blade systems

Process Rolls

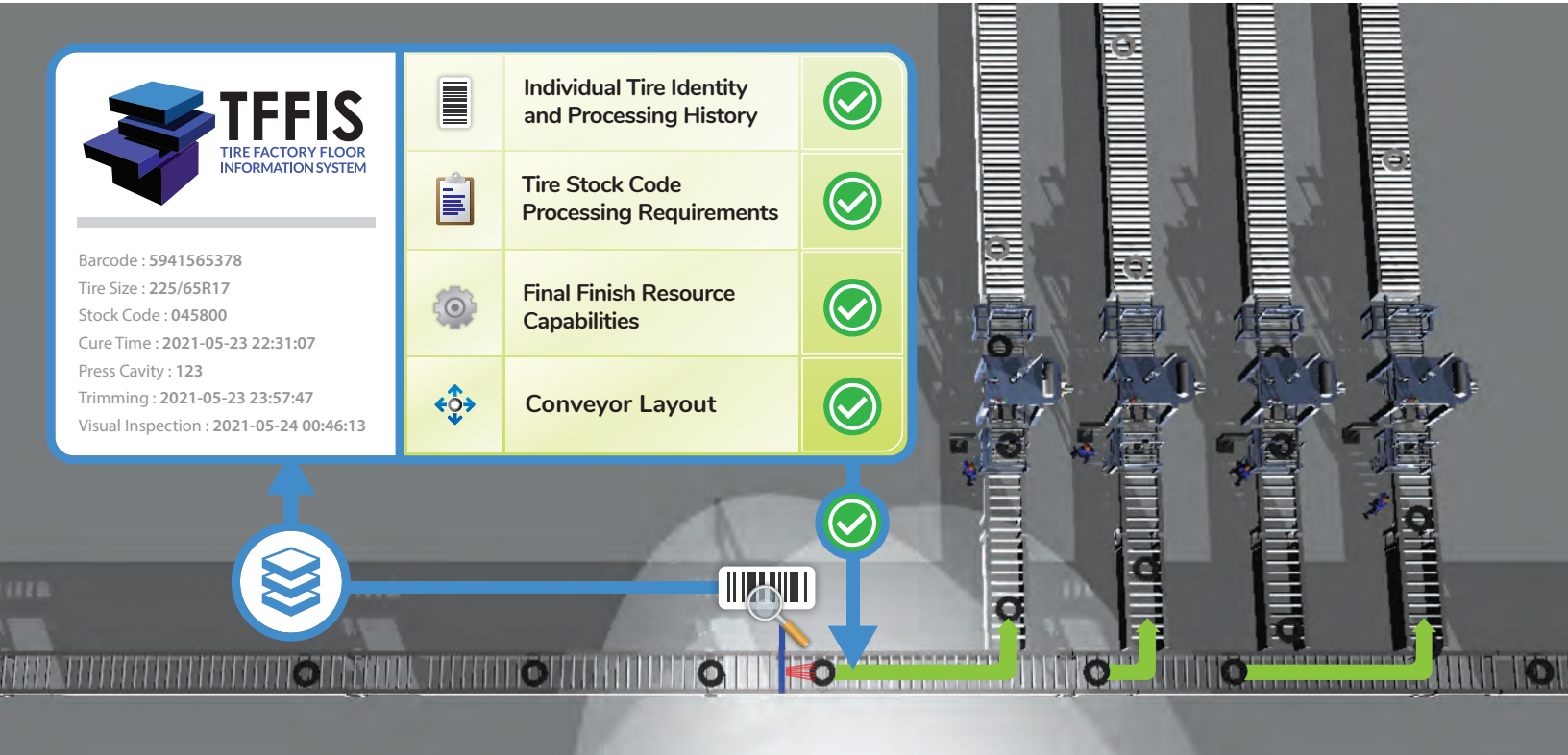
- › Cooling drums
- › Pressure rolls
- › Comb rolls

THE POLING GROUP KNOWS

Tire Factory Management Software



 TFFIS TIRE FACTORY FLOOR INFORMATION SYSTEM Barcode : 5941565378 Tire Size : 225/65R17 Stock Code : 045800 Cure Time : 2021-05-23 22:31:07 Press Cavity : 123 Trimming : 2021-05-23 23:57:47 Visual Inspection : 2021-05-24 00:46:13	Individual Tire Identity and Processing History
	Tire Stock Code Processing Requirements
	Final Finish Resource Capabilities
	Conveyor Layout



TFFIS collaborates with the PLC and provides the “big picture” decisions required to get the tire to its next processing step.

It does this intelligently by combining information about the processing requirements for your stock codes, the individual tire's identity and processing history, the capability and current tooling of your tire processing equipment, and the landscape layout of your final finish factory floor to decide the optimal path for the tire at each conveyor divert point.

The Power of TFFIS is in its Flexibility.

- › Provides tire barcode identification services to tire measurement machines, primarily the name of the measurement recipe required to measure the tire.
- › Customized to meet your specific needs, whether that is inventory management, product routing, component traceability, or a combination of all.
- › TFFIS comes with 24/7 remote support, typically from the very people that designed and implemented the software.

Delivers Accurate Production Accounting.

- › TFFIS is user-friendly – the UI is coherent and understandable to all plant and management staff.
- › TFFIS reports can be accessed anywhere in the plant and provides activity tracking based on tire barcode.
- › Reports deliver accurate reporting of production against designed objectives.



FFH converts tire test results into actionable data. Whether you need a standalone or building block solution, FFH can meet your QA goals.

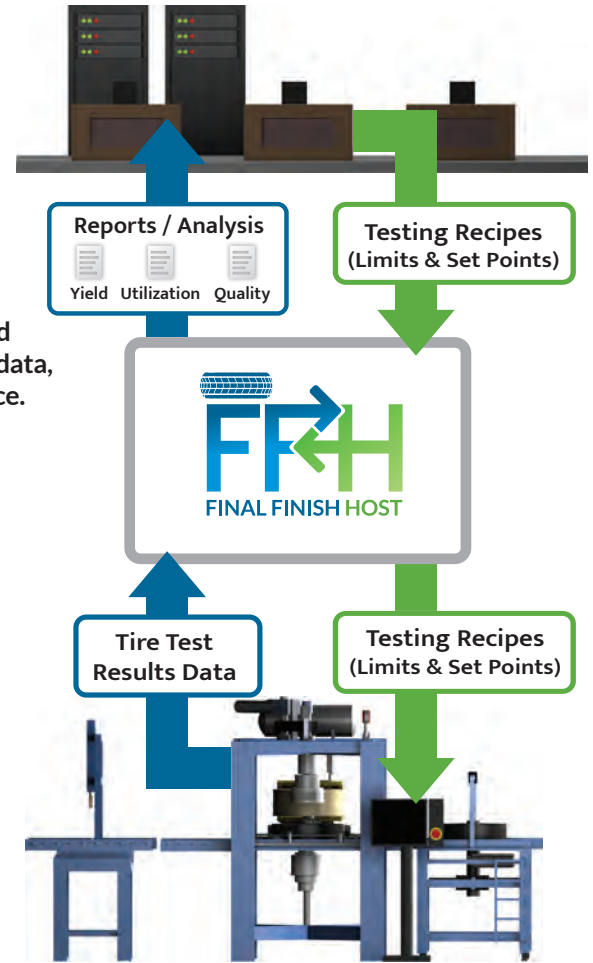
FFH has been successfully implemented at several global tire companies, and helps them provide a single access point to control customer specs, analyze data, view machine performance, and schedule machine preventative maintenance.

Automated Data Collection
FFH collects, summarizes, and stores test results for tire uniformity, geometry, and balance machines.

Centralized Recipe Maintenance
Use a web browser to design recipes that include test sequence, grading limit, and machine setup parameters (such as servo positions), then download the recipes directly to final finish machines.

Production and Uniformity Reporting
A variety of graphic and tabular reports display uniformity, repeatability, and machine utilization in PDF format.

Like other CTI products, FFH provides extra value because we customize it to fit your particular machines, operations, and business requirements. We developed FFH specifically for tire manufacturing final finish to provide the data and reporting you need to satisfy both external and internal customers.

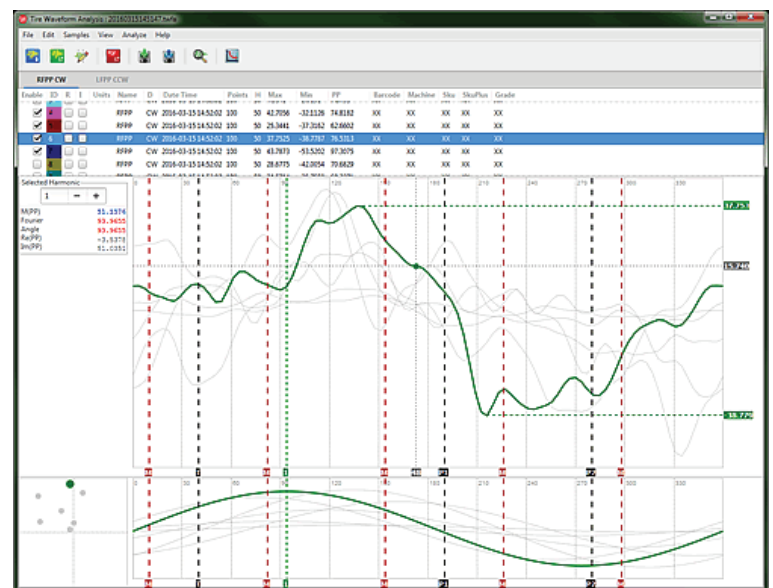


Easily collect, visualize, and analyze final finish tire test waveforms and harmonics

TWave software integrates with your existing plant database via ODBC. This new software plots harmonic information as a waveform view and transforms waveform data to individual harmonic magnitudes and angles. This process gives you unparalleled visualization and analysis of typical final finish data. Users can then overlay tire component splice and mold segment information on top of the waveform plot, and adjust individual harmonic magnitudes or angle values as needed and see the outcome instantly.

Replace your non-centralized custom spreadsheets with TWave and quickly view trend analysis, while you provide continuity from plant to plant.

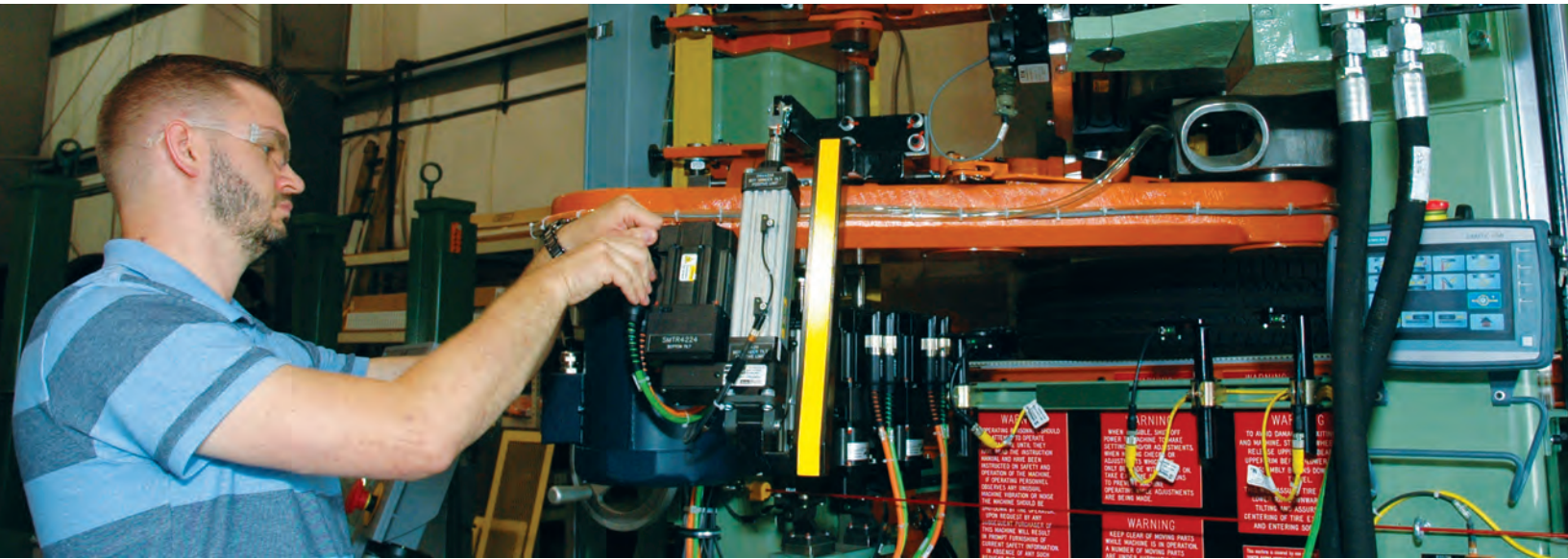
Plots for visualization of tire data include: Complex, Individual Harmonic, Waveform, Harmonic Magnitudes, and Trend.



TWave lets you view component splice angles relative to harmonic angles. Overlay any or all splice values on a waveform or harmonic.

THE POLING GROUP KNOWS

Quality. Service. Customization.



The Poling Group offers customized on-site support:

Typical Services Include:

- › Installation of individual machines, upgrade components, and complete machine lines with your maintenance personnel or contractors
- › Startup and qualification of equipment to production level
- › Monitoring of production startup to determine and implement desired modifications.
- › Train plant personnel in preventive maintenance, routine troubleshooting, and major machine/component repairs
- › Machine calibration and alignments
- › Rim inspection and testing
- › Machine relocation



The CTI Division provides internet-based remote support on a 24/7/365 basis, for any machine/system with CTI controls/software.

Tire factories run 24/7, and a large portion of lost production can be remediated with the off-hours support that the CTI Division provides on products such as tire testing machines, material handling, factory information systems, and more.

We can :

- › Instantly view and analyze tire test machine data, including current machine settings, component and drive status, and various status and error logs.
- › Instant message with engineering or maintenance personnel at the machine to diagnose problems and implement solutions.
- › Run diagnostics to evaluate machine fault conditions.
- › Download and install software updates, then monitor subsequent machine or data system performance.
- › Perform database and other routine system maintenance.



Poling Group Management

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David Poling, Jr.
COO of the Poling Group
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ASM Division

Focus : Final Finish Tire Testing, Machine options and upgrades, spare parts, tire grinding

Management

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Ed Bailey
Senior Engineer
EBailey@PolingGroup.com

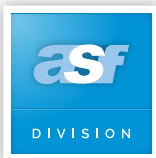


Firwood Division

Focus : White sidewall buffers, sidewall painting, post-cure inflators

Management

Stephen Ericson
VP of Firwood Division
SEricson@PolingGroup.com



ASF Division

Focus : Cold slab stock cutting / slitting, calenders, drying drums, batch-off equipment

Management

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Kevin Kline
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Victor Flinner
Lead Engineer
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CTI Division

Focus : Machine Controllers, Data Acquisition / Analysis, Geometry Testing, Factory Management Software, Custom Engineering

Management

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John McCarthy
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Jason McIntyre
Director of Machine Controls
JMcIntyre@PolingGroup.com



Hasbach Division

Focus : Laboratory Tire Testing for Rolling Resistance, Endurance, Durability, Force & Moment, Tire Noise

Management

Alexander Hasbach
President of Hasbach Division
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The Poling Group Knows Tire Testing.

Spare Parts

The Poling Group offers spare and replacement parts for all of our Testing, Millroom, and Rubber Processing machines, and even some replacement parts for machines that we didn't manufacture.

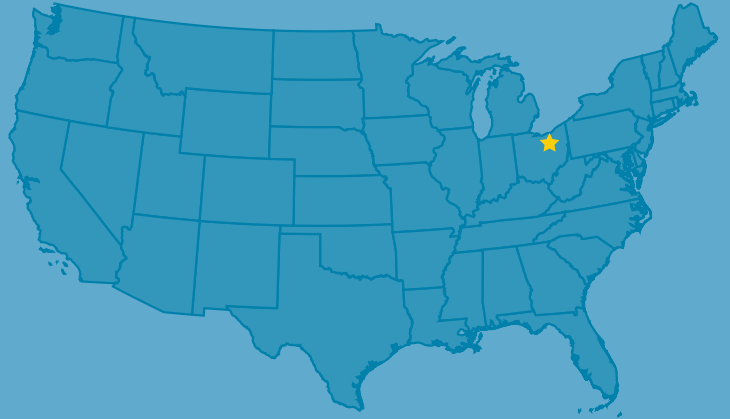
Our Spare Parts team is committed to making sure you get the right part at the right time.

Submit a request:

 Sales@PolingGroup.com

 +1 330 753 1077

 [Spare Parts Request Form at PolingGroup.com](#)



The Poling Group services tire and rubber manufacturers world-wide from our headquarters in Akron, Ohio USA



Find our full product & service offerings at PolingGroup.com