



Track«man®

**Rubber Track Manual &
Warranty Guide**

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➤ Introduction.....	3	➤ Warranty Key Points.....	30
➤ Purpose of the Manual.....	3	➤ Warranty Review.....	31
➤ Glossary of Terms.....	4-8	➤ Eligibility.....	32
➤ Rubber Track Construction.....	9-11	➤ Filing Instructions.....	33
➤ Key Points in a Track Suspension System.....	12	➤ Warranty Follow Up.....	34
➤ Friction Drive vs. Positive Drive.....	13	➤ Track Identification Numbers.....	35
➤ Undercarriage Drive Components.....	14-17	➤ Measuring Tread Wear.....	36
➤ Track Rotation.....	18	➤ Claims Overview.....	38-60
➤ Track Preconditioning.....	19-20	➤ Tread Lugs.....	39-45
➤ Rubber Track Maintenance.....	21-23	➤ Carcass.....	46-51
➤ Track Storage.....	24-25	➤ Guide Lugs.....	53-57
➤ Ag Warranty.....	26-27	➤ Other	58-62
➤ Scraper Warranty.....	28-29		

Continental, a worldwide supplier of quality rubber products, is committed to providing new and improved products to meet the ever changing needs of its customers. This dedication to innovation, technological leadership and continuous quality improvement has led Continental to develop its line of *Trackman* Rubber Track, a family of flexible, reinforced rubber tracks designed to serve as the primary tractive component for a wide variety of applications.

The Continental *Trackman* line of rubber track combines advanced rubber compounding, tread design, and production technology to provide the user with an endless rubber track that will provide superior performance in the most demanding of applications. *Trackman* Rubber Track is specifically designed to provide the durability, versatility and traction required to satisfy customer requirements in all types of services.

Purpose of this Manual

The purpose of this guide is to provide the user a better understanding of rubber track technology and how it relates to their equipment. This educational tool can be used with various equipment and applications and be a reference for years to come. The warranty manual section provides clear photographs of the various conditions and characteristics seen on rubber track, and how to assess these conditions. In addition to describing the appearance and probable cause of the condition observed, this manual will also provide actions to be taken for the track, the tractor, and the operation in which the track is used.

GLOSSARY

Continental Rubber Track Terminology

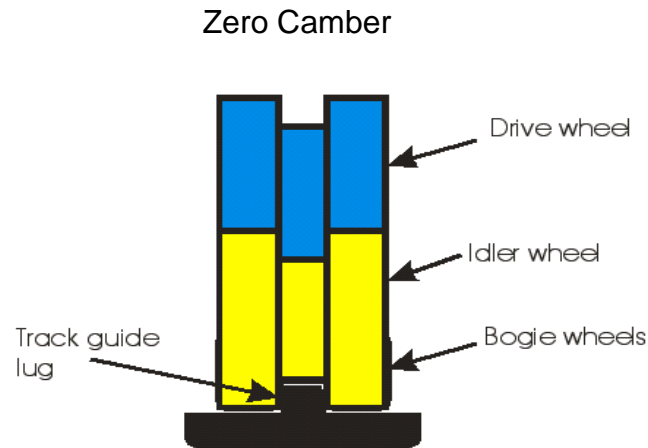
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- **Alignment** - Term referring to the mutual parallelism of the elements of an undercarriage, especially the drive wheel, idlers, and bogies. Also, the mutual parallelism of paired undercarriages. Alignment is important because it affects the tracking of the track.
- **Bogie** - (Bogie Wheel) - A small, non-powered wheel which runs on the ground engaging length of the track, the purpose of which is to distribute the machine load over the track footprint. Typically, multiple bogie wheels comprise a bogie wheel system. Generally, the term “bogie wheel” is synonymous with the term “roller wheel”. However, in some contexts, the term “bogie wheel” indicates an independently suspended wheel, while “roller wheel” denotes a rigidly fixed wheel. An alternate term for bogie wheel is mid-roller or roller wheel.
- **Carcass** - The “belt” which forms the main body of a rubber track, and which contains the steel reinforcement package.
- **Chunking** - a vernacular term describing a condition of rubber in which macroscopic “chunks” of rubber are torn from the wear surface. Typically, as it relates to track, this condition is indicative of severe ground conditions, such as those containing scrap metal or flint.
- **Compaction** - The relative degree to which soil is compacted by the passage of vehicles across its surface. Primarily a function of machine ground pressure(s). In agriculture, high levels of compaction have been found to reduce germination rates and total crop yield.
- **Delamination** - A rubber condition in which the various layers of rubber separate along the planes between cross-sectional laminae. Can refer to separation within a carcass, or separation of tread and/or guide/drive lugs from a carcass (usually in a “sheet”). This type of condition may indicate poor adhesion within the track.
- **Drawbar** - Vernacular term for “Drawbar Pull,” the force which can be supplied at the drawbar of a draft vehicle. Typically quoted as a measure of tractive effort.
- **Drive Lug** - A rubber lug (usually, one of a series) located on the undercarriage-engaging surface of the track, the purpose of which is to drive the track by positively engaging the drive wheel.

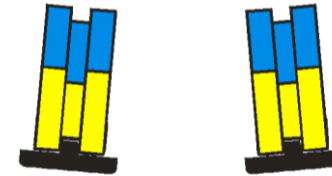
GLOSSARY

Continental Rubber Track Terminology

- **Camber** - Term referring to the “roll” attitude of an undercarriage. Typically, camber is expressed as the angular departure from an “upright” or “flat” attitude, where the rotation occurs about a front to rear line running through the mounting location of the undercarriage. The purpose of providing camber is to ensure that the undercarriage runs “flat” to the ground surface when (elastically) deformed under the typical operating load of the machine.



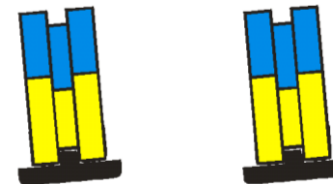
Negative Camber



Positive Camber



One Positive & One Negative



GLOSSARY

Continental Rubber Track Terminology

- **Drive Wheel** - The direct driving component of a rubber track undercarriage and/or system. Drive wheels may effect power transmission to the track by friction, by some form of positive mechanical engagement, or by a combination of the two.
- **Durability** - Refers to the ability of a rubber track or component to survive time in service. Typically, durability is a measure of the rate at which the track is consumed or destroyed by use.
- **Elongation** - A synonym for “strain.” Informally, refers to deformation causing an increase in length (usually, within the elastic limit). For example, most rubber track exhibits a 3 percent elongation at ultimate loading.
- **Flotation** - Refers to the relative ability of a machine to stay “on top of” soft ground conditions, rather than penetrating or sinking in. Generally, “high” or “good” flotation is a consequence of low ground pressure, and thus, of a large effective footprint.
- **Guide Lug** - A rubber lug (usually, one of a series) located on the undercarriage-engaging surface of the track, the purpose of which is to “guide” the track within set boundary limits, and thus, to prevent detracking.
- **Guide/Drive Lug** - A rubber lug (usually, one of a series) located on the undercarriage-engaging surface of the track, the purpose of which is both to “guide” the track within set boundary limits, and to drive the track by positively engaging the drive wheel.
- **Idler** - A non-driven wheel which defines a bend radius in a track system. Idler wheels define the “shape” of the track system.
- **Inboard** - A relative term denoting the “side” or “edge” of a member (e.g., a track or a wheel) closest to the centerline of the machine on which it is running.
- **Life Cycle** - The period of time from a product’s initial use to its date of retirement.
- **Misalignment** - A condition in which the various elements of an undercarriage (especially the drive wheel, idlers, and bogies) are not “in line,” or are not mutually parallel. Misalignment can result in poor tracking.
- **Mis-engagement** - A condition in which a track (especially a positive drive track) does not interact correctly with its drive wheel. Typically, a condition in which positive drive lugs fail to properly engage the recesses in a positive drive wheel.

GLOSSARY

Continental Rubber Track Terminology

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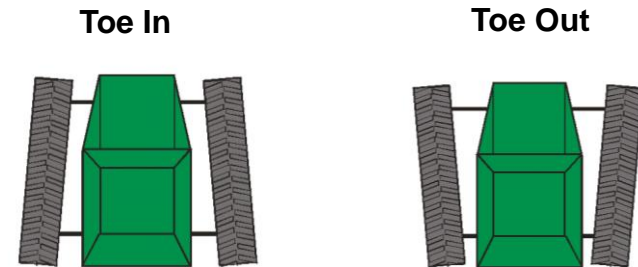
- **OEM** - **O**riginal **E**quipment **M**anufacturer. In the context of this manual, the designer and/or manufacturer of rubber track undercarriages and/or machines.
- **Outboard** - A relative term denoting the “side” or “edge” of a member (e.g., a track or a wheel) furthest from the centerline of the machine on which it is running.
- **Outside Guide Lugs** - Guide lugs that are located at the “edges” of a track, rather than at its centerline. Used in pairs (“dual outside guide lugs”), these lugs encapsulate drive and idler wheels to prevent detracking.
- **Penetration** - The relative degree to which a tire or a track impresses itself into the ground under load. High gross vehicle weights, small footprints, and soft ground conditions all result in increased penetration. In general, track systems exhibit less penetration than tires.
- **Roller** - (Roller Wheel) - A small wheel designed to guide and distribute machine load to a track. Generally, the term “roller wheel” is synonymous with “bogie wheel.” However, in some contexts, the term “bogie wheel” indicates an independently suspended wheel, while “roller wheel” denotes a rigidly fixed wheel. An alternate term for roller wheel is mid-roller or bogie wheel.
- **Ridging** - A ground condition created by the tight turning of a vehicle, in which the soil is scraped into “ridges” by the sideward movement of the tires or track. Generally considered detrimental, ridging can be reduced through the use of tracks with beveled tread lugs. An alternate term for ridging is berming.
- **Skid Steer** - Refers to a method of turning a vehicle in which there is no articulation of the tires or track; instead, the tires or track on either side of the vehicle are driven at dissimilar speeds (or in dissimilar directions). The term “skid steer” is also sometimes used to denote skid-loader type pieces of equipment, such as the Bobcat or Case Unloader machines.
- **Spreading Force** - The total force applied to a track by the tensioning system of an undercarriage. In the case of two-pulley type systems, the “spreading force” corresponds to the force with which the front and rear idler/drive wheels are “spread” apart, against the track. In this type of system, the track tension is equal to one-half the spreading force.
- **Track Tension** - The total tensile load supported by a given span of track.

GLOSSARY

Continental Rubber Track Terminology

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- **Tracking** - A term referring to a track's propensity to move laterally on its undercarriage. Typically, "good" or "proper" tracking is achieved when a track does *not* exhibit a propensity to move in either lateral direction. Conversely, "poor" tracking generally implies a condition in which the track *does* exhibit a propensity to move in a given lateral direction, and therefore "scrubs" its guide lugs against one side of the guide lug groove. Tracking is controlled through alignment, track tension and the internal construction of the track itself.
- **Tractive Effort** - Technically, the ratio of a vehicle's maximum drawbar pull to its total weight. Informally, this term is sometimes used to refer to the maximum drawbar pull alone. In either case, it is a measure of a vehicle's pulling ability.
- **Tread Lug** - A rubber lug (usually, one of a series) located on the ground-engaging surface of a track or tire, the purpose of which is to provide traction. An alternate term for tread lug is traction lug.
- **Undercarriage** - The supporting structure for a track operating on a vehicle. Typically, the undercarriage includes a frame, a drive wheel (and associated drive-line components), one or more idler wheels, and one or more bogie wheels.
- **Wheelbase** - The distance from the center of the foremost wheel in a track system (or on a vehicle) to the center of the rearmost wheel.
- **Tensile Strength** - The maximum load that can be supported by a member in tension, usually reported in PSI, and usually determined by the material yield point.
- **Toe** - (Toe-in, Toe-out) - Refers to deviations from parallelism between two members -- typically, between two paired undercarriages. Specifically, toe is the difference in the transverse distance between the track planes, taken, respectively, at the extreme front and rear points of the track treads. When the distance at the rear is greater than the distance at the front, the tracks are said to be "toed-in," and in the reverse condition, are said to be "toed-out."



Continental *Trackman* Rubber Track is produced on custom-designed manufacturing equipment that combines the latest advancements in rubber processing technology with sophisticated computer process controls. This manufacturing process results in a product which is unsurpassed in quality, uniformity, and performance.

Patented
Galvanized Cable

Patented Carcass
Design



Optional Breaker Ply

Multiple Layers of Steel Belting

In general, flexible rubber track is composed of three major components: the carcass, the tread lugs, and the guide and/or drive lugs. The carcass is the heart of the track, and is composed of several different rubber compounds, each of which is designed to perform a particular function (such as to promote adhesion, or to resist wear, cutting, chunking, etc.). This flat belt also contains the main steel reinforcement package that gives the track its strength, stiffness, and handling characteristics. The steel reinforcement package within the carcass usually includes several layers of steel belting - similar to that which would be employed in radial steel belted truck tires - as well as longitudinal steel cable. The purpose of the steel belting is to provide lateral stiffness, tear resistance, and proper tracking characteristics, as well as to protect the primary cable layer from impingement and damage. The purpose of the cable is to provide longitudinal tensile strength, so that the track cannot stretch (significantly) under load, or elongate over its lifetime. The cable employed is a heavy-gauge, high-tensile variety, which exhibits an ultimate elongation. Furthermore, it is treated to resist corrosion and to maximize its adhesion to the rubber substrate.

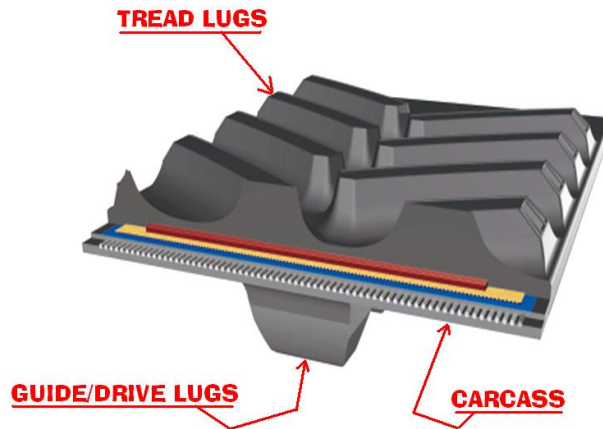
The tread lugs are molded to the ground-engaging side of the carcass. These lugs are designed to provide both exceptional traction and a smooth ride. The rubber compound used in these lugs is typically formulated for high wear resistance, as it is the tread surface of the track which will usually be subjected to the most wear and abrasion.

The guide and/or drive lugs are molded to the undercarriage-engaging side of the carcass. (That is, the opposite side from the tread lugs.) In friction-drive type track systems, where the track is driven solely by the friction between the drive wheel and the inside surface of the track, the purpose of these lugs is to retain the track (laterally) on the undercarriage, and to bear the applied side loads (such as when the machine is operating on a transverse incline). In positive-drive type track systems, where the track is driven via the mechanical engagement of the drive lugs by the drive wheel (much like a rack-and-pinion gear set), the purpose of these lugs is to retain the track on the undercarriage, to bear the applied side loads, and further, to offer a mechanical means for the transmission of the driving torque provided through the drive wheel. In virtually all cases, guide and/or drive lugs are formed from high modulus, abrasion resistant compounds.

Continental *Trackman* Rubber Track combines these three components into a fully molded, high quality construction that delivers maximum performance in the environment for which it was designed. This fully molded construction allows each component to be designed for optimum performance, while simultaneously assuring outstanding product uniformity and integrity.

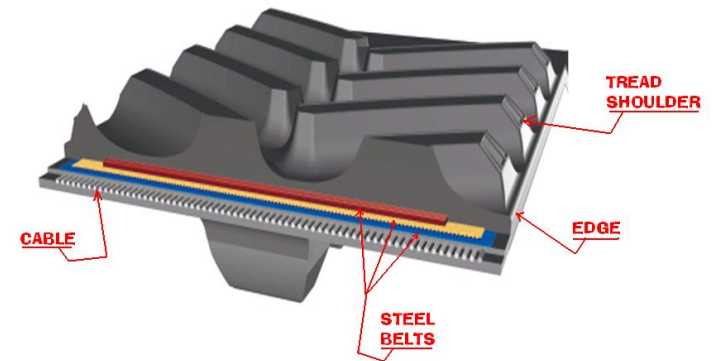
Main Exterior

- Tread Lugs - Ground Engaging, wearable surface
- Carcass - Foundation of track
- Guide/Drive Lugs - Primarily for retainement of track



Main Interior

- Steel Cable - Single cable, helically-wound
- Steel Belting - typically 3 – 4 layers





- Better, smoother ride
- Maximize the distribution of load
- Minimize the degree of penetration and compaction.
- Prohibit excessive loading on a single (or a specific group of) bogie wheel(s)
- Reduce the abusive "loading" caused by the ingestion of debris.

➤ Friction Drive

- Track is driven solely by friction contact between track and drive wheel
- High track tension minimizes wheel-to-track slip
- Simplest undercarriage to manufacture

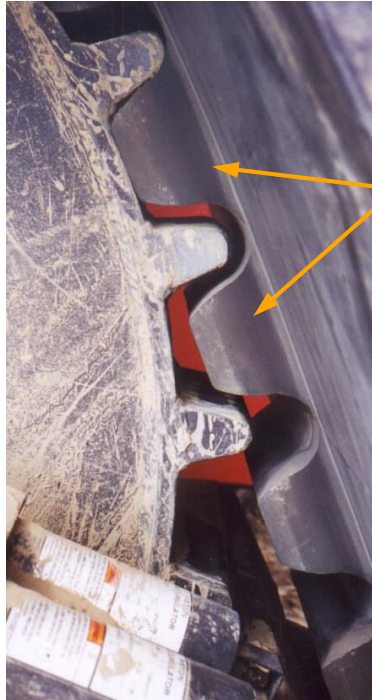
➤ Positive drive

- Track drive/guide lugs engage “cogged” drive wheel
- Wheel-to-Track Slip is completely prevented
- Drive wheel and track require precise manufacturing

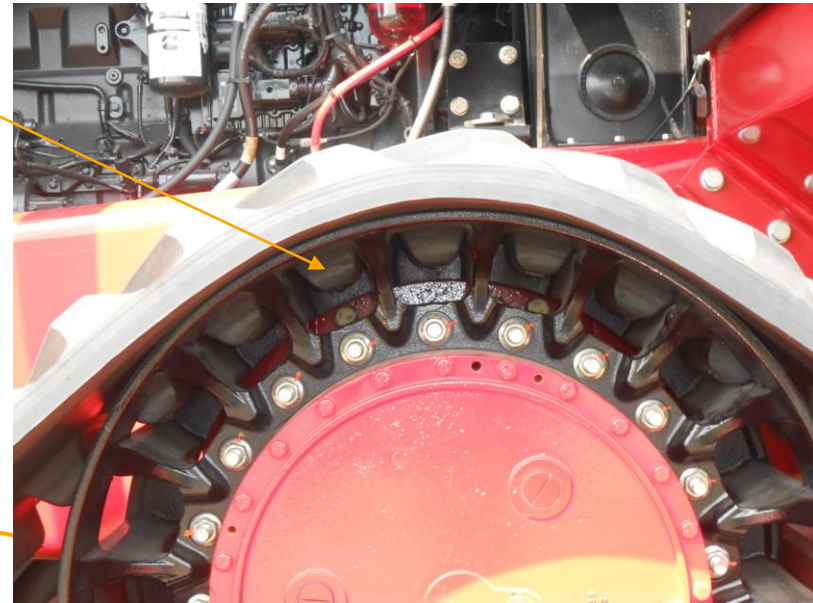
Friction Drive Track



Positive Drive Track

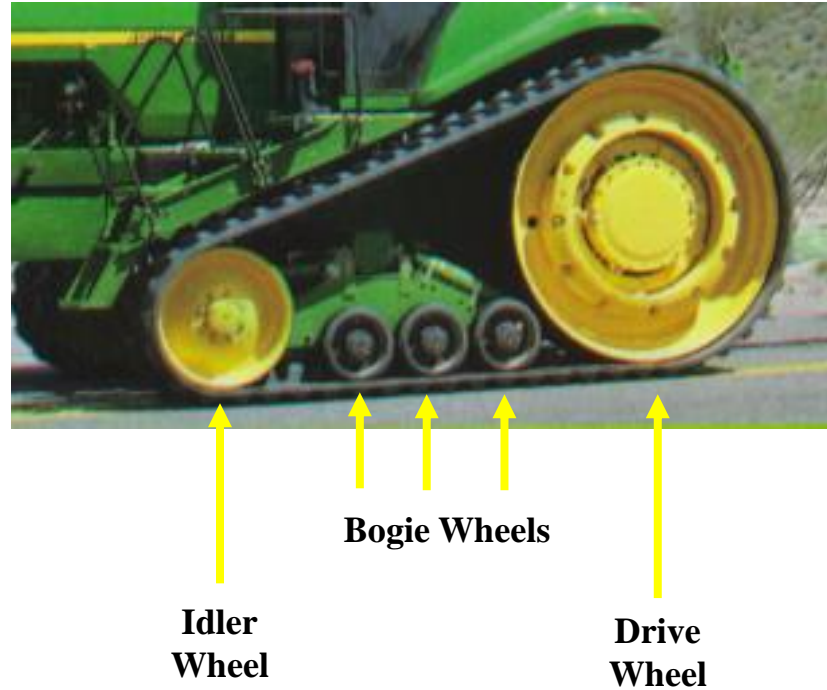


Positive
Drive
Lugs



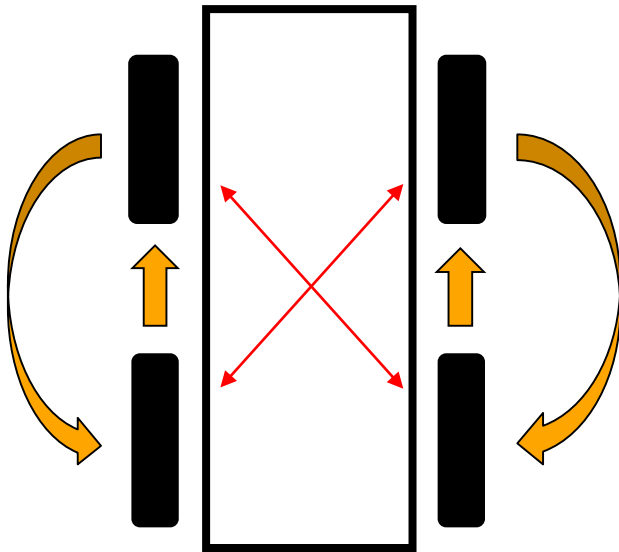
Positive
Drive
Wheel

Typical Friction Drive Components



Typical Positive Drive Components





FIRST ROTATION:

Interchange ***left front*** with ***right rear*** track. Interchange ***right front*** with ***left rear*** track.

SECOND ROTATION (if needed):

Interchange ***left front*** with ***left rear*** track. Interchange ***right front*** with ***right rear*** track.

- Tracks must be pre-conditioned before initial use.
 - Operating tracks without lubrication will cause track scuffing.
- Best method is to operate for at least 15 minutes in field with loose soil
- If this is not possible:
 - Spread layer of lubricating material over entire undercarriage wheels and inside of track.
 - Dirt
 - Oil dry
 - Talc powder
 - Graphite
 - Any non caustic particulate material.
 - Drive slowly for 15 – 25 minutes.
- Tracks will continue to condition for first 150 hours.
 - When roading during this time, throw shovel-full of dirt / lubricant in undercarriages before roading and every 30 minutes.

NOTE: Always refer to the vehicle manufactures Operation and Maintenance Owners Manual for specific track conditioning procedures.

- Continental Armorlug tracks have a layer of fabric over the drive lug.
 - Resists drive lug damage.
 - All original Goodyear Rowtrac tracks and Continental RowTech tracks are Armorlug.
 - All Goodyear and Continental 36" Quadtrac and Combine tracks are Armorlug.
- During break-in, a thin layer of rubber peels off fabric.
 - This is normal



NOTE: Always refer to the vehicle manufactures Operation and Maintenance Owners Manual for specific track conditioning procedures.

- Inspect and service the undercarriage components frequently to ensure that there is no obvious damage, that the track is being tensioned properly, and that the track exhibits no unusual wear patterns that would indicate improper camber or alignment.
- Condition track prior to initial usage by spreading dirt, Dries-All, or a similar material over the undercarriage engaging surface of the track and running the machine for a brief time.
- Avoid operating rubber track in grease, oil, gasoline, diesel fuel or other petrol chemicals. Take care to avoid spilling these materials on track when servicing the undercarriage and/or the machine.
- Rotate tracks from side to side in applications where uneven lateral wear is seen (and where the undercarriage adjustments necessary to correct these wear patterns do not exist).
- Avoid excess amount of sharp and high-speed turns.
- Protect undercarriage from contact with large foreign objects.
- Contact Continental Rubber Track Distributor for detailed information

➤ Track life influences:

- Mechanical damage
- Roading %
- Hard surface turning
- Amount of slip
- Amount of side slope use
- Soil types
- Track alignment
- Crop residue
- Undercarriage maintenance



Typical Drive Lug Mid-Life Wear

- Track life typically determined by wear of drive lugs and traction lugs.
- Do not use differential locks while turning. This helps distribute the power equally to each side of the axle and will cause tracks to wear more evenly.
- Consider rotation of tracks every (750 – 1250) hours, depending on drive lug and traction lug wear

NOTE: Always refer to the vehicle manufactures Operation and Maintenance Owners Manual for specific instructions.

- When replacing tracks on higher hour machines, inspect undercarriage components.
- Worn undercarriage components can lead to reduced track life
- Components to inspect include:
 - Roller wheel wear
 - Idler wheel wear
 - Bushing wear (“slop” in front pivot and undercarriage arms).
 - Suspension Blocks
 - Hydraulic tension check valves





- Store tracks in "dark" area, away from direct sunlight. Store indoors, or cover with opaque tarpaulin.
- Store tracks in "cool" (40°F to 60°F, 4.4°C to 15.5°C) area. Avoid storing at temperatures greater than 85°F (29.4°C) for extended periods.
- Store tracks in "relaxed" physical configurations. Store on edge, with bend radii greater than 30 inches and no back-bending.
- Store tracks in draft-free area. Store indoors, protect with tarpaulin if necessary.
- Store tracks in dry area. Store indoors or cover with waterproof tarpaulin.
- Do not store tracks in closed areas with electric devices that generate ozone (such as motors).
- Do not store tracks in closed areas with petrol chemicals or petrol chemical vapors.
- Do not paint tracks in an attempt to protect them from ozone, moisture or other elements.
- Provide CO₂, fire extinguishers or halon fire suppression systems in rubber track storage areas

Periodic Storage of Machine

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- Avoid storing tracked machines in direct sunlight. Store indoors or cover tracks with opaque tarpaulin.
- Avoid storing tracked machines in standing water. Store indoors or cover tracks with waterproof tarpaulin.
- Machines stored resting on their tracks (rather than "blocked up") should be moved once a month.





Track«man»

Rubber Track Agricultural Track Limited Warranty

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Rubber Track Agricultural Track Limited Warranty

Agricultural Track Limited Warranty

Eligibility

You are eligible for the benefits of this limited warranty if you are the original owner, or authorized agent of the original owner, of new Continental ContiTech agricultural service rubber tracks. This Limited Warranty is from Continental ContiTech.

Coverage

Continental ContiTech agricultural service rubber tracks that become unserviceable due to a covered warranty condition within 48 months from their introduction into service are eligible for coverage under the Continental ContiTech agricultural rubber track limited warranty.

Warranty consideration is applicable only to the track's purchase price and does not include removal or installation charges, or any special, incidental, or consequential charges. This limited warranty covers only tracks that bear proper Continental ContiTech identification, that have been used only on the equipment on which they were originally installed in accordance with the equipment manufacturer's or Continental ContiTech's recommendations and that were purchased on or after January 1, 2014.

Covered Conditions

- » Guide/drive lug loss due to lack of adhesion.
- » Delamination of tracks due to lack of adhesion resulting from the manufacturing process.
- » Smooth void area in the interior of the tread lug.
- » Tread lug separation with smooth interface between lug and carcass.

Not Covered

- » Continental ContiTech agricultural service rubber track purchased more than 48 months prior to presentation for adjustment.
- » Continental ContiTech rubber track designed for non-agricultural service.
- » Tracks marked "Prototype".
- » Prolonged on-road use. These tracks are not certified for such use by the United States Department of Transportation. Speeds must not exceed 25 mph (40 kph).
- » There is no warranty on tracks used on gear tooth drive systems.
- » Irregular wear or damage due to cuts, scuffing, snags, machine malfunction or damage, wreck, collision, fire, chemical damage, overloading, misapplication, misuse, negligence, or mechanical condition of vehicle.
- » Chunked, ripped or missing lugs caused by cuts from a sharp object or due to overloading.
- » Guide/drive lug wear caused by improper alignment of the tracks. For example, if a tractor is run misaligned the idler wheel will rub against the inside of guide lug and friction will cause excessive temperature to build up. Excessive heat from the friction will cause rubber bonding to fail and chunking will occur.
- » Guide/drive lug wear caused by running the track in extreme hillside conditions.

- » Cable that is cut by a sharp object or implement.
- » Exposed cables that are caused by:
 - Improper maintenance of mid-roller wheels
 - Interference from implements used in the application
 - Excessive slip between track and drive wheel
- » Carcass failure caused by cuts to the rubber from rocks or implements that damage cables. The exposure of the cable to moisture, dirt and the elements will eventually cause corrosion and will make the track unserviceable.
- » Conditions which impact the appearance of the rubber track but do not make the track unserviceable. Some examples include:

Exposed or frayed fabric

This may appear in guide/drive lug path area or drive wheel area. It is normal for the contact between drive wheels, idler wheels and mid-roller wheels to wear the rubber covering fabric reinforcement, causing exposure of fabric and for that fabric to fray as the track wears.

Tread flex cracking

Flex cracking occurs over time as a result of bending around drive, idler and mid-roller wheels.

- Small surface cracks will appear in most tracks after a few hundred hours of operation. Cracks usually appear on the track surface between tread lugs. This is normal wear.
- Surface cracking at base of tread lugs occurs as a normal part of wear.
- As tracks remain in operation, surface cracking will continue to spread.
- Tracks with surface cracks can continue to be used.

Guide/drive lug flex cracking

Cracking along guide/drive lugs is a normal part of wear and occurs over time as a result of bending around drive, idler and mid-roller wheels. This cracking will not affect operation of track.

- When track is first broken in, you may observe small cracks along outside edge of guide lugs.
- As tracks remain in operation, cracking around guide lugs will occur.
- As track ages the cracks around guide lugs will continue to spread.
- Tracks with guide/drive lug flex cracking can continue to be used.

Prorated Replacement

Continental ContiTech agricultural rubber tracks covered by this limited warranty that become unserviceable due to a covered warranty condition outside of the no-charge replacement period (0-12 months, see chart) and within 48 months from introduction into service will be replaced on a prorated basis. The warranty replacement price will be calculated by multiplying the manufacturer's suggested retail price (MSRP) by the percentage determined from the "Warranty Replacement Price Table" shown on the following chart:

	0-12 Months	13-18 Months	19-24 Months	25-30 Months	31-36 Months	37-42 Months	43-48 Months
Agricultural							
% of purchase price customer pays	No charge	70%	50%	30%	10%	0%	0%

Introduction into Service Date

The purchase date will be used to establish the date that tracks are introduced into service, or absent proof of purchase, the date of manufacture. The "months" above represent the number



of months since introduction into service (either as an OEM factory installed option or as a replacement product). Example: The MSRP = \$6000. Track Age = 20 months. Based upon the table, the owner of the warranty track will pay 50% x \$6000 = \$3000 for a replacement warranty track.

Track Service Life

The service life of any specific track cannot be predicted in terms of hours of use since service conditions vary widely. The wear rate and serviceability of a track over time is a function of the service conditions (load, speed, maintenance, operating and soil conditions, etc.) to which a track is subjected. Even if operating conditions and tractor and track maintenance are identical, in different regions varying soils and ground surface will significantly affect track wear. Although little can be done to compensate for harsh soil conditions and their impact on track wear, proper servicing, proper alignment of track to undercarriage, regular inspections and regular maintenance are key to receiving the maximum benefit from your tracks.

Although traction may be reduced, the loss of one or several tread lugs because of cuts or shearing will not prevent your track from operating.

If one or several lugs are only partially cut off and flapping occurs, we recommend that the loose portion of the lug be cut off as soon as possible to prevent tearing down further into the track. You may continue using your track normally as long as cuts or rips do not extend down to the cable.

Operators should check their track each day and note any major cuts or damage that may have occurred during previous operation. A common indication of a cut or foreign object damage to guide/drive lugs or tread lugs is the appearance of several damaged lugs or tread in the same area, or a repeating pattern of damage.

Legal Rights

No representative or dealer has authority to make any representation, promise or agreement or modification to this warranty on behalf of Continental ContiTech except as stated herein.

THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION PRINTED ABOVE AND CONTINENTAL CONTITECH DOES NOT IN ANY WAY WARRANT THE FITNESS OF THE TRACKS FOR ANY PARTICULAR PURPOSE. ALL WARRANTIES IMPLIED BY STATE LAW, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY LIMITED TO THE DURATION OF THE LIMITED WARRANTIES SET FORTH ABOVE. Some states or provinces do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. WITH THE EXCEPTION OF ANY WARRANTIES REQUIRED BY STATE LAW, AS HEREBY LIMITED, THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, GUARANTEES, AGREEMENTS AND SIMILAR OBLIGATIONS OF CONTINENTAL CONTITECH WITH RESPECT TO ANY TRACK. CONTINENTAL CONTITECH'S LIABILITY AND PURCHASER'S SOLE REMEDY, WHETHER IN CONTRACT, UNDER ANY WARRANTY, IN TORT (INCLUDING NEGLIGENCE), IN STRICT LIABILITY OR OTHERWISE SHALL BE LIMITED TO THE REPLACEMENT OF THE TRACKS. UNDER NO CIRCUMSTANCES SHALL CONTINENTAL CONTITECH BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, PERSONAL INJURY, PROPERTY DAMAGE, DAMAGE OR

LOSS OF EQUIPMENT, LOST PROFITS OR REVENUE, COSTS OF RENTING REPLACEMENTS AND OTHER ADDITIONAL EXPENSES, EVEN IF CONTINENTAL CONTITECH HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE OR LOSS. Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

CONTINENTAL CONTITECH WILL NOT BE LIABLE FOR ANY DAMAGES, LOSSES OR EXPENSES AS A RESULT OF THE END USER'S NEGLIGENCE, WHETHER DEEMED ACTIVE OR PASSIVE AND WHETHER OR NOT ANY SUCH NEGLIGENCE IS THE SOLE CAUSE OF ANY SUCH DAMAGE, LOSS OR EXPENSE.

Any track, no matter how well-constructed, may fail in service or otherwise become unserviceable due to conditions beyond the control of the manufacturer. This limited warranty is not a representation that a track failure cannot occur.

This limited warranty gives you specific legal rights, and you may also have other rights that vary from state to state or province to province.

Owner's Obligation

The track owner, or authorized agent of the track owner, must present the unserviceable track and proof of purchase to a participating dealership. The track owner or authorized agent must also completely fill out and sign a Continental ContiTech Rubber Track Claim Form. This claim form must be accompanied by a clear and visible photograph of the warranty condition that made the track unserviceable. These should be sent to Continental ContiTech's warranty administrator.

The track owner or authorized agent must pay for taxes, installation or any other additional service ordered at the time of adjustment. Warranty track must be purchased within 90 days of Continental ContiTech's approval of the warranty claim.

Filing Instructions

All warranty claim forms must be accompanied by a valid Continental ContiTech Rubber Track Claim Form, which includes:

- TM number of the track
- Date of track purchase
- Date track became unserviceable
- Picture of condition that rendered track unserviceable
- Picture of equipment on which track was operating

The track TM number will be found on the rubber track either embossed on the inside wheel path of the track and/or molded on the top of several of the guide/drive lugs. The TM number begins with the letters "TM" followed by 5 numeric digits (example: TM36167).

In order for claims to be processed, the dealer must submit the completed claim form and the photographs to:

Continental ContiTech
Attn: Warranty Department
1115 S. Wayne Street
St. Marys, OH 45885

Or via e-mail:
trackwarranty@contitech.us



ContiTech



Contact:
ContiTech AG
NAFTA Headquarters
703 S. Cleveland Mountain Road
Folsom, OH 44333-3023 U.S.A.
1-877-394-0482
FAX 1-800-525-0910
trackwarranty@contitech.us

Germany
+49 (0)511 936 02
mailto:service@contitech.de

www.contitech.us

ContiTech. Engineering Next Level

As a division of the Continental Group, ContiTech is a recognized innovation and technology leader in natural rubber and plastics. As an industry partner with a firm future ahead of us, we engineer solutions both with and for our customers around the world. Our bespoke solutions are specially tailored to meet the needs of the market. With extensive expertise in materials and processes, we are able to develop cutting-edge technologies while ensuring we make responsible use of resources. We are quick to respond to important technological trends, such as function integration, lightweight engineering and the reduction of complexity, and offer a range of relevant products and services. That way, when you need us, you'll find we're already there.



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20.7017.29

Scraper Track Limited Warranty

Eligibility

You are eligible for the benefits of this limited warranty if you are the original owner, or authorized agent of the original owner, of new Continental ContiTech scraper service rubber tracks. This Limited Warranty is from Continental ContiTech.

Coverage

Continental ContiTech scraper service rubber tracks that become unserviceable due to a covered warranty condition within 24 months from their introduction into service are eligible for coverage under the Continental ContiTech scraper rubber track limited warranty.

Warranty consideration is applicable only to the track purchase price and does not include removal or installation charges, or any special, incidental, or consequential charges. This limited warranty covers only tracks that bear proper Continental ContiTech identification, that have been used only on the equipment on which they were originally installed in accordance with the equipment manufacturer's or Continental ContiTech's recommendations and that were purchased on or after January 1, 2014.

Covered Conditions

- » Guide/drive lug loss due to lack of adhesion.
- » Delamination of tracks due to lack of adhesion resulting from the manufacturing process.
- » Smooth void area in the interior of the tread lug.
- » Tread lug separation with smooth interface between lug and carcass.

Not Covered

- » Continental ContiTech scraper service rubber track purchased more than 24 months prior to presentation for adjustment.
- » Continental ContiTech rubber track designed for non-scraper service.
- » Tracks marked "Prototype."
- » Prolonged on-road use. These tracks are not certified for such use by the United States Department of Transportation. Speeds must not exceed 25 mph (40 kph).
- » There is no warranty on tracks used on gear tooth drive systems.
- » Irregular wear or damage due to cuts, scuffing, snags, machine malfunction or damage, wreck, collision, fire, chemical damage, overloading, misapplication, misuse, negligence, or mechanical condition of vehicle.
- » Chunked, ripped or missing lugs caused by cuts from a sharp object or due to overloading.
- » Guide/drive lug wear caused by improper alignment of the tracks. For example, if a tractor is run misaligned the idler wheel will rub against the inside of guide lug and friction will cause excessive temperature to build up. Excessive heat from the friction will cause rubber bonding to fail and chunking will occur.
- » Guide/drive lug wear caused by running the track in extreme hillside conditions.
- » Cable that is cut by a sharp object or implement.

- » Exposed cables that are caused by:
 - Improper maintenance of mid-roller wheels
 - Interference from implements used in the application
 - Excessive slip between track and drive wheel
- » Carcass failure caused by cuts to the rubber from rocks or implements that damage cables. The exposure of the cable to moisture, dirt and the elements will eventually cause corrosion and will make the track unserviceable.
- » Conditions which impact the appearance of the rubber track but do not make the track unserviceable. Some examples include:

Exposed or frayed fabric

This may appear in guide/drive lug path area or drive wheel area. It is normal for the contact between drive wheels, idler wheels and mid-roller wheels to wear the rubber covering fabric reinforcement, causing exposure of fabric and for that fabric to fray as the track wears.

Tread flex cracking

Flex cracking occurs over time as a result of bending around drive, idler and mid-roller wheels.

- Small surface cracks will appear in most tracks after a few hundred hours of operation. Cracks usually appear on the track surface between tread lugs. This is normal wear.
- Surface cracking at base of tread lugs occurs as a normal part of wear.
- As tracks remain in operation, surface cracking will continue to spread.
- Tracks with surface cracks can continue to be used.

Guide/drive lug flex cracking

Cracking along guide/drive lugs is a normal part of wear and occurs over time as a result of bending around drive, idler and mid-roller wheels. This cracking will not affect operation of track.

- When track is first broken in, you may observe small cracks along outside edge of guide lugs.
- As tracks remain in operation, cracking around guide lugs will occur.
- As track ages the cracks around guide lugs will continue to spread.
- Tracks with guide/drive lug flex cracking can continue to be used.

Prorated Replacement

Continental ContiTech scraper rubber tracks covered by this limited warranty that become unserviceable due to a covered warranty condition outside of the no-charge replacement period (0-12 months; see chart) and within 24 months from introduction into service will be replaced on a prorated basis. The warranty replacement price will be calculated by multiplying the manufacturer's suggested retail price (MSRP) by the percentage determined from the "Warranty Replacement Price Table" shown on the following chart:

Introduction Into Service Date

The purchase date will be used to establish the date that tracks are introduced into service, or absent proof of purchase, the

date of manufacture. The "months" above represent the number of months since introduction into service (either as an OEM factory installed option or as a replacement product). Example: The MSRP = \$6000. Track Age = 20 months. Based upon the table, the owner of the warranty track will pay 80% x \$6000 = \$4800 for a replacement warranty track.

Track Service Life

The service life of any specific track cannot be predicted in terms of hours of use since service conditions vary widely. The wear rate and serviceability of a track over time is a function of the service conditions (load, speed, maintenance, operating and soil conditions, etc.) to which a track is subjected. Even if operating conditions and tractor and track maintenance are identical, in different regions varying soils and ground surface will significantly affect track wear. Although little can be done to compensate for harsh soil conditions and their impact on track wear, proper servicing, proper alignment of track to undercarriage, regular inspections and regular maintenance are key to receiving the maximum benefit from your tracks.

Although traction may be reduced, the loss of one or several tread lugs because of cuts or shearing will not prevent your track from operating.

If one or several lugs are only partially cut off and flapping occurs, we recommend that the loose portion of the lug be cut off as soon as possible to prevent tearing down further into the track. You may continue using your track normally as long as cuts or rips do not extend down to the cable.

Operators should check their track each day and note any major cuts or damage that may have occurred during previous operation. A common indication of a cut or foreign object damage to guide/drive lugs or tread lugs is the appearance of several damaged lugs or tread in the same area, or a repeating pattern of damage.

Legal Rights

No representative or dealer has authority to make any representation, promise or agreement or modification to this warranty on behalf of Continental ContiTech except as stated herein.

THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION PRINTED ABOVE AND CONTINENTAL CONTITECH DOES NOT IN ANY WAY WARRANT THE FITNESS OF THE TRACKS FOR ANY PARTICULAR PURPOSE. ALL WARRANTIES IMPLIED BY STATE LAW, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY LIMITED TO THE DURATION OF THE LIMITED WARRANTIES SET FORTH ABOVE. Some states or provinces do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. WITH THE EXCEPTION OF ANY WARRANTIES REQUIRED BY STATE LAW, AS HEREBY LIMITED, THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, GUARANTEES, AGREEMENTS AND SIMILAR OBLIGATIONS OF CONTINENTAL CONTITECH WITH RESPECT TO ANY TRACK.

CONTINENTAL CONTITECH'S LIABILITY AND PURCHASER'S SOLE REMEDY, WHETHER IN CONTRACT, UNDER ANY WARRANTY, IN TORT (INCLUDING NEGLIGENCE), IN STRICT LIABILITY OR OTHERWISE SHALL BE LIMITED TO THE REPLACEMENT OF THE TRACKS. UNDER NO CIRCUMSTANCES SHALL CONTINENTAL CONTITECH BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, PERSONAL INJURY, PROPERTY DAMAGE, DAMAGE OR LOSS

OF EQUIPMENT, LOST PROFITS OR REVENUE, COSTS OF RENTING REPLACEMENTS AND OTHER ADDITIONAL EXPENSES, EVEN IF CONTINENTAL CONTITECH HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE OR LOSS. Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

CONTINENTAL CONTITECH WILL NOT BE LIABLE FOR ANY DAMAGES, LOSSES OR EXPENSES AS A RESULT OF THE END USER'S NEGLIGENCE, WHETHER DEEMED ACTIVE OR PASSIVE AND WHETHER OR NOT ANY SUCH NEGLIGENCE IS THE SOLE CAUSE OF ANY SUCH DAMAGE, LOSS OR EXPENSE.

Any track, no matter how well-constructed, may fail in service or otherwise become unserviceable due to conditions beyond the control of the manufacturer. This limited warranty is not a representation that a track failure cannot occur.

This limited warranty gives you specific legal rights, and you may also have other rights that vary from state to state or province to province.

Owner's Obligation

The track owner, or authorized agent of the track owner, must present the unserviceable track and proof of purchase to a participating dealership. The track owner or authorized agent must also completely fill out and sign a Continental ContiTech Rubber Track Claim Form. This claim form must be accompanied by a clear and visible photograph of the warranty condition that made the track unserviceable. These should be sent to Continental ContiTech's warranty administrator.

The track owner or authorized agent must pay for taxes, installation or any other additional service ordered at the time of adjustment. Warranty track must be purchased within 90 days of Continental ContiTech's approval of the warranty claim.

Filing Instructions

All warranty claim forms must be accompanied by a valid Continental ContiTech Rubber Track Claim Form, which includes:

- » TM number of the track
- » Date of track purchase
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Continental ContiTech
Attn: Warranty Department
1115 S. Wayne Street
St. Marys, OH 45885

Or via e-mail:
trackwarranty@contitech.us

Continental ContiTech

ContiTech



Contact
ContiTech AG
NAFTA Headquarters
703 S. Cleveland Massillon Road
Fakteen, OH 44333-3023 U.S.A.
1-877-394-0462
FAX 1-800-525-0910
trackinquiries@contitech.us

Germany
+49 (0)511 838 02
mailto:service@contitech.de

www.contitech.us

ContiTech. Engineering Next Level

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Continental
The Future in Motion

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20701942

Continental Approved Agricultural Track Warranty

Key Points

ContiTech

➤ COVERAGE:

- Tracks that become unserviceable due to a covered warranty condition within 48 months (12 months for general applications 24 months for approved scraper tracks & 36 months for approved paver tracks) from their introduction into service
- Warranty consideration does not include removal or installation charges, or any special, incidental, or consequential charges.
- Only tracks that bear proper Continental Trackman identification and:
 - Have been used only on the vehicle on which they were originally installed in accordance with the vehicle manufacturer's or Continental Trackman recommendations
 - Were purchased on or after January 1, 2005.

➤ NO CHARGE (NC) REPLACEMENT:

- First twelve months of service
- Replaced with comparable new Continental Trackman rubber track without charge.

➤ PRORATED REPLACEMENT:

- Outside of the no charge replacement period and within 48 months (12 months for general applications, 24 months for scraper tracks & 36 months for paver tracks) from introduction into service
- Customer charge will be calculated by multiplying the customer's current buying price, at the time of adjustment, by the percentage from the "Warranty Replacement Percentage Table."

➤ INTRODUCTION INTO SERVICE DATE:

- Proof of purchase date will be used to establish the service date
- Date of track manufacture will be used if proof of purchase is not available.

➤ NOT COVERED:

- Track purchased more than 48 months (12 mos. general service, 24 mos. for scraper tracks & 36 mos. for paver tracks) prior to presentation for adjustment
- Track designed for non-agricultural, non-scraper, or non-paver service (as applicable)
- Track used in non-agricultural service including but not limited to land' leveling, road construction, general construction and military service.
- Irregular wear or damage due to cuts, snags, machine damage, wreck, collision, fire, chemical damage, misapplication, misuse, negligence, or mechanical condition of vehicle.
- Conditions which impact the appearance of the rubber track but do not render the track unserviceable.

- **Owner or authorized agent of the track owner**
 - Must present the unserviceable track & copy of the proof of purchase to an authorized track dealership who contacts the proper Continental authority
 - Must completely fill out and sign a Continental Trackman Rubber Track Claim Form supplied by Continental Trackman to the authorized track dealer
 - Accompanied by a clear and visible photograph of the warranty condition that rendered the track unserviceable
- Must pay for taxes, installation or any other additional services ordered at the time of adjustment
- Warranty track must be purchased within 90 days of Continental Trackman approval of the claim

All warranty claims must be accompanied by a valid Continental Trackman Rubber Track Claim Form which includes:

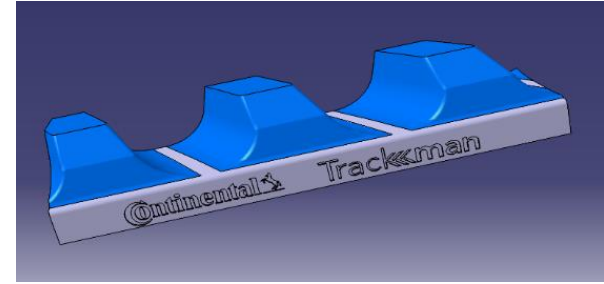
- TM number of the track
 - Found embossed on inside wheel path of track and/or molded to the top of several guide/drive lugs
- Tread depth measurement
 - Measure at three points around track with straight edge across two tread lugs directly opposite the center of the roller wheel (average of 3 points)
 - Measure from straight edge bottom to the track carcass 1/2 way between the two lugs
- Date of track purchase
- Date track became unserviceable
- Picture of condition that rendered track unserviceable and machine installed on

➤ **Mail or e-mail claim form & picture to:**

Conti Tech North America Inc.
Attn: Warranty Department
1115 S. Wayne Street
St. Marys, Ohio 45885
trackwarranty@contitech.us

➤ **Manufacturer Logo:**

Check the edge of the rubber track for the Continental Trackman logo.

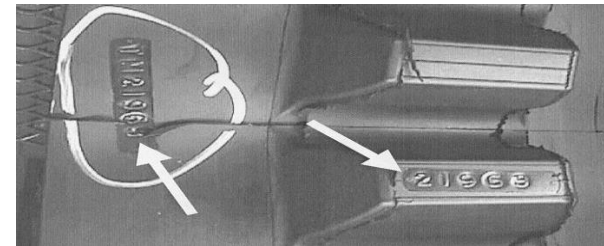


➤ **Track Manufacture Number:**

Every rubber track will have a unique TM# embossed inside the wheelpath and on the

➤ tops of several guide/drive lugs.

Example: TM21925



➤ **Track Serial Number:**

Every track will have a serial number or

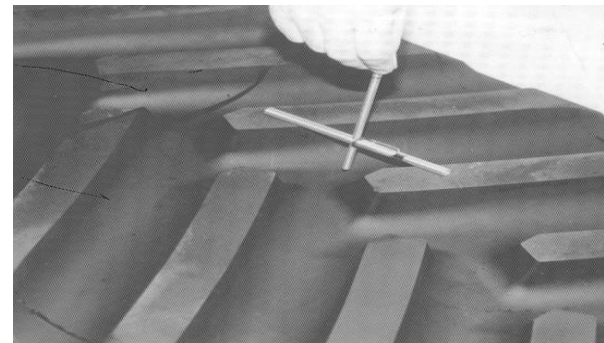
➤ AU number embossed inside the track wheel

➤ path.

Example: AU527862902



- We recommend the use of a straight edge to bridge between the tread lugs, as shown below.
- Tread depth should be measured from track carcass at the midpoint between the tread lugs to the bottom of the straight edge.
- Tread depth should be on the section of track directly opposite of the roller wheel path.
- Tread depth gauges are manufactured by Haltec or Eaton/Dill or any straight edge or measured rule calibrated in 32nds will suffice.



For questions concerning the Continental
Trackman Agricultural Track Warranty,

please contact Continental Trackman Warranty
Administrator:

Conti Tech North America Inc.
Warranty Administrator
Rubber Track Products
1115 South Wayne Street
St. Marys, OH 45885
Phone: 800-233-9810
Fax: 866-979-9993
E-Mail: **trackwarranty@contitech.us**





➤ **Non Warrantable Condition**

➤ **Discussion-** Fast tread wear and uneven tread wear are common in the industry for row crop applications (ie. heavily loaded narrow undercarriages).

➤ **Action-** The following best practices are recommended to help reduce the rate of tread wear:

- Minimize amount of roading
- Avoid roading with added vertical loads
- Avoid crowned roads
- Reduce roading speeds
- Use wide wheels and tracks whenever possible



➤ Possible Warranty Condition?

➤ **Discussion-** Cracks found on the outer tread lugs is an aesthetic flaw and will not usually hinder the performance of the track. The molded tread lug will most likely remain intact with the carcass and remain whole. Cracks sometimes occur during heat build up when roading and exceeding pressures on treads with over loading and/or a combination of the two. Cracking generally occurs over time, and is due to rubber fatigue. This fatigue is caused by repeated flexing and bending loads as the track goes around the wheels, and from tread bar stresses due to tractive effort. Cracks are usually shallow, and only at the base of the tread bar and can be found on track systems with smaller diameter idlers or drive wheels. cracking will not have any effect on track life, as cracks will not propagate further before tread is worn out. It is normal for flex cracks to appear after extended track usage.

➤ **Action-** Monitor and report for further evaluation. Submit a claim especially if a tread lug separates from the carcass.



➤ **Non Warranty Condition**

➤ **Discussion-** Excessive Tread wear is usually caused by dense soil clods and/or abrasive soil conditions with possible sand, gravel or rocky materials. Many times the driving surface can be hard and abrasive with possible sharp objects in the path.

➤ **Action-** Slow controlled speeds along with careful driving in harsher applications is a must. Obstacle avoidance is helpful and recommended.



➤ Non Warrantable Condition

➤ **Discussion-** Tread lug bulging can be caused by excessive heat and/or roading at high speeds and under heavy loads. Additionally, internal heat buildup can be caused by high ambient temperatures especially on black paved surfaces. Softened and sticky internal rubber, once damaged, never improves and only gets worst over time.

➤ **Action-** The following best practices are recommended to help reduce tread damage:

- Minimize amount of roading
- Avoid roading with added vertical loads
- Avoid crowned roads
- Reduce roading speeds
- Use wide wheels and tracks whenever possible



➤ **Possible Warrantable Condition**

➤ **Discussion-** The occurrence with the outer tread lug can sometimes be caused by incomplete or improper cure of rubber materials. Major delamination can reduce the track life and should be replaced.

➤ **Action-** Submit a claim. The degree of wear and serviceability of the track will determine claim disposition. Minor delamination does not effect the tread lug life or performance as much as it being an aesthetic issue.



➤ Non Warrantable Condition

➤ **Discussion-** Fast tread wear and uneven tread wear are common in the industry for row crop applications (ie. heavily loaded narrow undercarriages).

➤ **Action-** The following best practices are recommended to help reduce the rate of tread wear:

- Minimize amount of roading
- Avoid roading with added vertical loads
- Avoid crowned roads
- Reduce roading speeds
- Use wide wheels and tracks whenever possible



➤ Possible Warrantable Condition

➤ **Discussion-** It is extremely rare that an outside tread leg would be separated on a Continental Trackman Track because of the fully molded construction. The first thing to look for is contact with the tractors implements or any field hazards. Even with a crack in the tread lug, the molded rubber integrated with the base carcass forms a bonded connection that does not separate. Factory inspection or a representative field visit may be needed to confirm that there is no manufacture defect in the rubber compound or manufacturing process.

➤ **Action-** Submit a claim for review.



➤ Non Warrantable Condition

➤ **Discussion-** During normal flexing of the track, this rare occurrence of small single strands of wire may work its way to the surface. Self repair and removal of the wire is recommended.

➤ **Action-** Snip the loose wire at the surface of the track. It is highly unlikely that this will negatively effect the performance or longevity of the track.

➤ Non Warrantable Condition

➤ **Discussion-** Under certain conditions internal track temperatures can rise and result in permanent damage. The main factors that affect track heating are: total weight supported per track, vehicle speed, travel duration, ground/road surface conditions, ground contour, and ambient temperature. Tracks are most susceptible to overheating during roading. There are 3 levels of temperature damage which are:

- **Stage 1:** Non visible. Heat generation has been high enough to permanently degrade the physical properties of the track. Track is still serviceable; however, the prior heating event will lessen the track's ability to resist general wear and tear in future.

- **Stage 2:** Swelling. Visually or by feel, an observer can tell that the track shape has been distorted. The odor of burning rubber may also be apparant. This indicates a loss of interior compound integrity. Track is non-serviceable and will need to be replaced.

- **Stage 3:** Rupture. Very noticeable to the observer. Rupture occurs in swelled areas if vehicle continues excessive heat generating operation. Smoke billowing from track will normally accompany rupture. Track is non-serviceable and will need to be replaced.

➤ **Action-** In order to avoid track damage due to overheating, Continental recommends that customer refer to and follows vehicle manufactures operators instructions, as well as, any service bulletins regarding same subject matter.





➤ Non Warrantable Condition

➤ **Discussion-** Cable breaks are not warrantable because they are a type of track damage rather than an issue due to something that the manufacturer did incorrectly. Track warranty is limited rather than being a no-fault type of warranty. For a track to be warrantable the reason for removal has to be caused directly by a defect in manufacturing workmanship or materials. This is the standard type of warranty for the rubber track industry.

Cables can be broken during detracking or while having debris packed in the undercarriage when the vehicle is partially buried/suck and attempting to free itself under its own power. Also, gradual tears can occur when sharp rocks and debris are driven into the track wheel paths. This leads to moisture ingress, corrosion, weakening of individual cable/s and eventual fatigue corrosion failure and lateral zipper break.

The main tension cable in the track is a single strand of cable helically wound across the width of the track. Spacing between cables is minimized in order to maximize the amount of cable included. When debris causes retraction of undercarriage take-up, along with isolating an area of the track to carry the full tension load, the track cables can stretch beyond their limit (around 2%), and experience ductile overload breakage.

➤ **Action-** Replace track to avoid undercarriage damage



➤ Possible Warrantable Condition

➤ **Discussion-** Probable denial if the track is still serviceable. Note that some cable may continue to extrude, so continue to cut; however it should subside over time. If the cable is outboard from the wheels, it is not a structural element. At this point it is difficult to say if track will be eventually be removed due to cable or due to normal end of life reasons.

➤ **Action-** Submit a claim. Recommend customer trim and continue to monitor. Please keep Continental informed for possible later adjustment if it appears that the cable exposure will cause imminent track removal.



➤ **Non Warrantable Condition**

➤ **Code- 15** Wheel Path Damage

➤ **Discussion-** Patches of rubber worn away in wheel path. Rock laden material ingestion. Build up of material on drive, idler bogie wheels. Excessive vertical loading-weight transfer. Clean rolling elements of undercarriage. Ballast tractor to balance load/weight transfer.

➤ **Rock and Debris damage**

➤ **Action-** Continually monitor undercarriage components for excessive material build up and external debris. Keep roading speeds at suggested speed limits or lower, especially under heavy load and/or for extended periods of time and road travel.



➤ **Non Warrantable Condition**

➤ **Discussion-** Normal wear. In some severe cases, drive wheel to track slippage, due to loss of tension and resulting in drive lug ratcheting or lockup of roller wheels inside the track.

➤ **APPEARANCE:** the wear damage appears in the inside surface of the track by thinning the rubber surface looking like it is grooved or planed off, as opposed to sheet separation. The surface rubber is worn off rather than broke off the inside of the track. The wear is uniform around the track. Usually, a drive wheel and/or a mid-roller may also show significant wear. If roller wheels lock up, they will show a flat/worn section or may not be freely turning.

➤ **Action- :** Monitor roller wheels for signs of lockup due to rocks or mechanical damage. Always maintain correct track tension. When operating in adverse environments, be aware of possible slippage between the track and wheels. If slippage inside the track occurs, operate in a manner to avoid continuous spinning inside track for an extended time in order to minimize damage



➤ Non Warrantable Condition

➤ **Discussion-** Damaged Guide lugs show no signs of workmanship/materials ie. no debond. Rather, lugs possibly damaged due to extreme heavy pull. Other possible cause to damage on lugs comes from ratcheting or lugs skip/hop out of drive wheel path.

➤ **Action-** Suggest customer consults Case Scraper operation recommendations with Scraper applications



➤ Possible Warrantable Condition

➤ **Discussion-** Cable exposure/breakage. Delamination of rubber in wheel path. Undercarriage wheels “scoring” track. Debris ingestion under wheels. Stone drilling. Clip the free end of cable flush with carcass and continue to run track. Check rubberization of idler and bogie wheels. Ensure no build-up on drive wheel. Routine inspection of undercarriage elements

➤ Cable breaks are not warrantable because they are a type of track damage rather than an issue due to something that the manufacturer did incorrectly. Track warranty is limited rather than being a no-fault type of warranty. For a track to be warrantable the reason for removal has to be caused directly by a defect in manufacturing workmanship or materials. This is the standard type of warranty for the rubber track industry.

Cables can be broken during detracking or while having debris packed in the undercarriage when the vehicle is partially buried/suck and attempting to free itself under its own power. Also, gradual tears can occur when sharp rocks and debris are driven into the track wheel paths. This leads to moisture ingress, corrosion, weakening of individual cable/s and eventual fatigue corrosion failure and lateral zipper break.

The main tension cable in the track is a single strand of cable helically wound across the width of the track. Spacing between cables is minimized in order to maximize the amount of cable included. When debris causes retraction of undercarriage take-up, along with isolating an area of the track to carry the full tension load, the track cables can stretch beyond their limit (around 2%), and experience ductile overload breakage.

➤ **Action-** Submit a claim.





➤ **Non Warrantable Condition**

➤ **Discussion-** Cracking at base of guide/drive lugs. Unlikely to affect track performance or longevity unless lugs are lost.

➤ **Action-** Submit a claim for review. Possible Workmanship Condition?



➤ Non Warrantable Condition

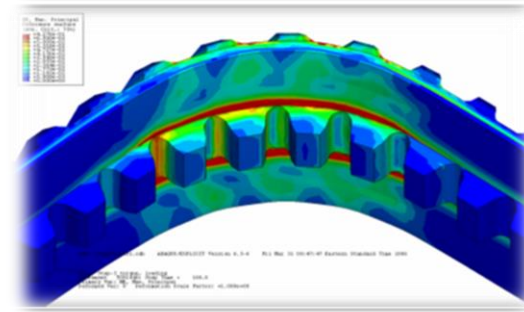
➤ **Discussion-** Abnormal guide/drive lugs worn/abraded on side lug face (wall). Chunky appearance. Turning under heavy load. Wheels with sharp edges or worn rubber. Continuous hillside work.

➤ **Action-** Rotate tracks side to side as appropriate. Inspect drive, idler and bogie wheels for worn rubber or sharp edges. Replace if necessary. . Minimize turns under heavy drawbar loads.



➤ Non Warrantable Condition

➤ **Discussion-** ARMORLUG material on the drive lugs is sacrificial. The critical area for coverage is located at the base of the drive lug and carcass and where the two surfaces connect. (See picture below highlighted in red) The total perimeter coverage is what is most important.



➤ **Action-** Customer should take care to make sure tracks are lubricated with soil and avoid road travel for the first 100 hours of use.



➤ **Non Warrantable Condition**

➤ **Discussion-** Abnormal wear on front and rear surface of drive lug. Foreign material build up on positive drive wheel. Incorrect drive wheel diameter. Drive wheel pocket obstruction. Investigate possible foreign material build up on drive wheel, drive wheel pockets, bars or flange and/or undercarriage components.

➤ **Action-** Check for track alignment. Continue to monitor lugs for separation



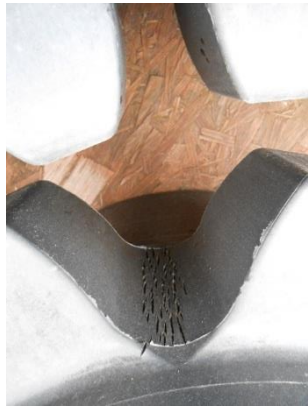
➤ **Possible Warrantable Condition**

➤ **Discussion-** Tracks that ratchet off of drive wheel because of a weakened guide lug is due to excessive debris build up on drive wheel or possible untracking due to mechanical damage to the drive/guide lugs. Track alignment problems can also damage drive/guide lugs, all of which result in crushing and/or scuffing damage.

➤ **Action-** Submit a claim



- **Possible Warrantable Condition**
- **Discussion-** Drive lug separation with smooth interface between lug and carcass. The key element is “smooth” separation. A smooth separation can be a result in a manufacture defect during production.
- **Action-** Submit a claim for review.



➤ **Non Warrantable Condition**

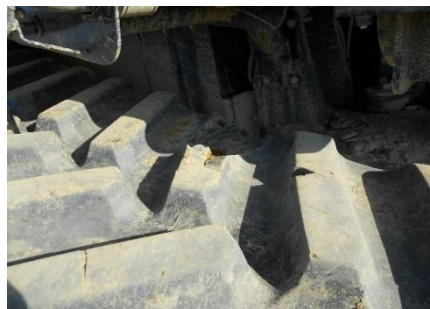
➤ **Discussion-** Recommend denial. Code 10 ozone cracking, is not a covered condition.

Tracks are serviceable

Tracks do not have a workmanship or materials condition.

Link to storage methods for rubber track which explain how to avoid this condition

Action- Submit Claim to reconsider for warranty, if after continued use, the condition worsens to point where track removal appears imminent.



➤ **Non Warrantable Condition**

➤ **Discussion-** Upon visual inspection, sharp, straight line cuts across multiple surfaces indicate an outside object may have damaged the surface. Additionally, jagged cuts, chunks that look torn are also key indicators that an object damaged the rubber surface upon impact. Likely sources are rocks, stumps, farm attachment implements, fence posts etc.

➤ **Action-** Assess track for serviceability and potential damage to other components especially on the undercarriage. Check the roller, idler and drive wheels for potential damage as well.



➤ Possible Warrantable Condition

➤ **Discussion-** this “catch all” category is for uncommon damage and that may occur in rare instances or may be a new damage that has not been seen before?

➤ **Action-** Submit a claim review. If there is any confusion from the end user, always take plenty of pictures from different angles and fill out the warranty claim form to find a suitable solution.