

# REFERENCE GUIDE

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## AGRICULTURAL TRACK

ELASTOMERIC COATED WHEELS

**VERSATILE DELTA TRACK**  
**MODEL 530, 580, 620**  
TRACKED TRACTORS



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INTRODUCTION AND TERMINOLOGY

Camso is the best of Camoplast and Solideal. To keep moving forward while staying true to our history, we’re now the Road Free company.



Introduction

Farming operations across the country are unique. Working closely with track tractor owners, Camso has created an extensive line of tracks to fit virtually any application. This guide is intended to help you better understand the complete line of tracks for tractors and provide helpful recommendations for the best use of each application.

All Camso Delta Track tractor tracks are built by Camso in Emporia, Kansas using an exclusive manufacturing process that keeps each component in place resulting in a stronger track.

With knowledge of your local conditions and applications, your Camso distributor/dealer can help you find the best track for your operation.

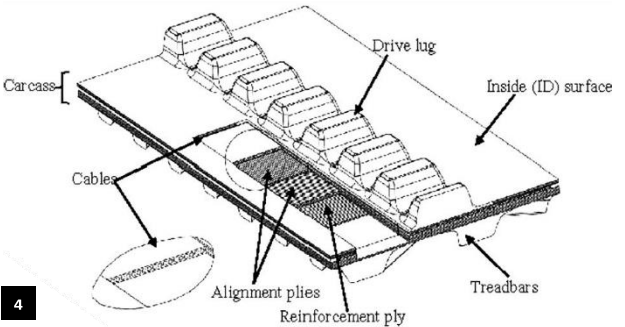
Camso Positive Drive Track Terminology

Track Terminology

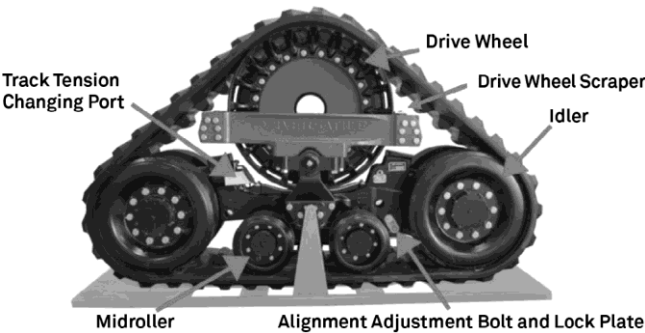
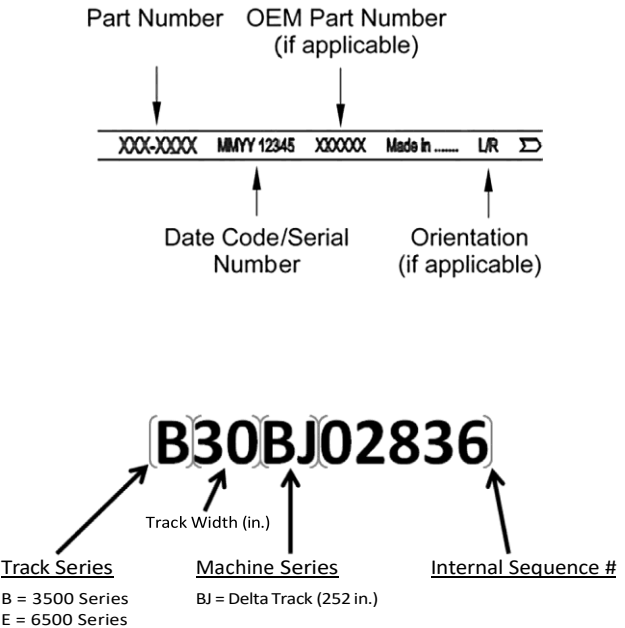
A positive drive track system uses a main drive wheel design that engages the drive lugs on the track to provide traction and braking. Actual propulsion is a combined dynamic effect between the drive wheel and track drive lug interaction, as well as the friction aspect between the track carcass and the drive wheel.

The Camso positive drive tracks for Buhler Versatile tractors are constructed using a combination of natural and synthetic rubber compounds in unison with steel reinforcing ply's and main cables. The continuously wound 5.4 (mm) main cable package gives the track tensile strength to carry the main load of the tractor and resist breakage. The bias plies aid in track alignment and reinforcement, as well as protecting the main cable package. The bias plies increase lateral stiffness to better distribute the load across the track width. The tread bars are designed to provide long road life, resistance to wear in the field, and provide optimum traction for varied conditions and applications. The drive lugs are designed to engage the drive wheel to transfer the loads incurred during traction and braking efforts. The drive lugs also support the engagement of the track between the rolling stock of the undercarriage, which also aids in alignment of the track.

Camso's patented 6500 series technology provides and extra strong drive lug by using embedded fabric reinforcing in the drive lugs which is protected from external wear. The 6500 Series track option is available for high load conditions such as, Extreme Ag or Scraper applications.



Track Part Number Format



# POSITIVE DRIVE TRACK MACHINE OPERATIONAL GUIDELINES

## Factors Affecting Track Life

Many factors affect track life. Some of these factors can be controlled by operation and some cannot. Some of the factors that affect track life:

- Track alignment
- Undercarriage wear or mechanical malfunction
- Drive wheel wear
- Drive wheel scrapers not installed or adjusted correctly
- Material build-up on drive wheels
- Pivot bushing wear
- Loss of rubber or polyurethane from idler wheels and midrollers
- High torque, low speed operations below 5mph
- Material ingestion resulting in over tensioning of the track
- Turning with high loads, causing drive lug damage from idler climbing over the drive lugs
- Side hill operation
- Crop Residue, stubble damage
- Excessive heat buildup (high speed, weight, and percentage of roading)
- Excessive slip
- Weight distribution or ballasting

Regular inspections and observance of track and drive lug condition is important to identifying and correcting problems early in order to maintain long track life.

## Correct Operational Techniques

### New Track Break-in

Track drive lugs and inner track surface, especially on new machines, will benefit from correct break-in procedures. Correct break-in help reduce initial damage to track drive lugs and inner carcass. Track components undergo a polishing-in process during the break-in period. During this time, any rubber flash is worn away from the wheel edges and establishes a smoother steel-to-rubber interface between the components. New rubber surfaces require contact with dry soil or other dry lubricants to ensure a smooth break-in process to minimize heat generation and track wear. Tracks should be operated in a dry soil condition as soon as possible. The use of dry lubricants is key with new tracks introduced to any type of operation prior to reaching the field. Track alignment should be checked frequently during initial operation and through the first 150 hours to assure that the tracks are aligned properly. Significant amounts of operation, especially high speed roading, before introduction to dry soil can cause damage to the drive lugs and wheel path of the rolling stock and should be avoided.

New tracks can be pre-conditioned with dry soil, floor-dry, talc, or similar dry lubricants spread over the inner surface of the track. Once applied, drive the tractor slowly to work the dry lubricant into the track and rolling stock surfaces. Repeated applications of dry lubricant may be required if extended road travel with new tracks is unavoidable.

### Maintain Track Alignment

Track alignment is impacted by characteristics of the track and undercarriage. Therefore it's necessary to align each track, on each undercarriage, to assure that all four tracks are running straight and not wearing excessively on one side of the drive lug. Track alignment can also change during the life of the machine due to track and undercarriage wear. Therefore, it's very important to periodically check track alignment, during break-in, after track replacement, or mechanical undercarriage repair. Misalignment, if left uncorrected will cause heating, scuffing, and eventually destruction of the drive lugs, as well as damage to the rolling stock of the undercarriage, which will merit replacement along with increased cost.

The primary way to verify alignment is to check the temperature of the drive lugs during field operations. If there is a significant difference in temperatures between opposite sides of the drive lugs, or if one idler wheel flange is hotter than the opposite flange, the track may be out of alignment and should be verified and corrected. Also, anytime scuffing is noticed on one side of the drive lugs, alignment should be verified.

Please refer to the Operator's Manual and Service Guide for procedures to properly verify and align the tracks.

### Maintain Proper Track Tension

Positive drive track systems require proper track tension to be able to transfer power to the ground adequately and for best drive lug life. The track tensioning system on Buhler Versatile tractors is a nitrogen over oil closed system. The system comes charged from the factory, but can be de-tensioned and re-tensioned for track removal/installation utilizing the Track Tensioning Tool (CST-0120) and can be sourced through a Camso distributor. If proper track tension is not maintained, track damage may occur or track alignment may be difficult.

If low track tension is experienced (ex: tensioning system malfunction, undercarriage issue, hydraulic leak, etc.) damage to the drive lugs may occur. Operators may notice a loud popping noise as the drive lugs jump out of the drive wheel. Also, excessive wear will be seen on the drive lugs. If track tension is too high (ex: material buildup on the drive wheel, detracking events, tensioning system malfunction, etc.) track damage may occur. High track tension can be caused by excess material being ingested into the undercarriage. This material is compressed and driven into the inner surface of the track, which can cause damage to the inner rubber layers and the main cables. Excessive track tension puts strain on the main cables which can reduce overall track life or can cause track failure.

Regular monitoring of the track and drive lug condition will indicate track tensioning problems and if caught early, and improve overall track life.

### Keep Material Out Of Track And Undercarriage

The undercarriage system is designed to allow for some amounts of material to pass between the rolling stock and the tracks. However, non-compressive debris or objects such as rocks, will cause localized loading on the track which can result in chips, chunks, tears, or cable breakage, and damage to undercarriage components. In addition, excessive material build-up inside the undercarriage can cause the tension system to use all available recoil travel and cause high loads in the track main cables that can result in breakage:

- If a track machine becomes stuck, always dig out the undercarriage.
- Avoid excessive spinning in loose soil.
- Material can build up between the rear idler and track resulting in overloading of the track and undercarriage.
- Avoid pulling high drawbar loads in a turn.
- Turning under heavy loads can cause the rear idler wheels and midrollers to climb on top of the drive lugs and damage them.
- Some soils may collect on the drive wheel and cause drive lug reverse face wear, track over tensioning, and/or damage to the inside surface of the track.
- Drive wheel scrapers must be adjusted to within 3 mm of the drive wheel to ensure the drive wheel remains clean and free from large amounts of material build-up. It is critical to maintain the proper adjustment settings between the scrapers and the drive wheel. Please refer to Drive Wheel Scraper section for additional information.

### Proper Ballast

Ballasting the tractor for even weight distribution, front and rear, under heavy pull conditions is recommended. This will provide best track performance and life. Heavy TPH (three-point hitch) loads or high load/low speed operation will require front ballast to achieve good weight distribution and even track wear. Check the Operator's Manual from proper ballasting.

*Note: Vertical tongue weight is considered equivalent to ballast on the rear of the machine and should be factored into the total weight limits.*

### High Torque / Low Speed Operation

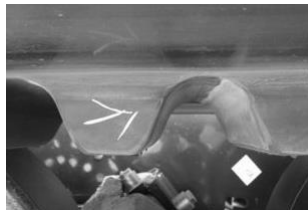
High torque / low speed operations can subject the track and undercarriage to extreme conditions that result in shortened life. To extend life and prevent damage to the track and undercarriage avoid operation at low speed in full power conditions. Avoid turning with high loads to minimize the risk of drive lug damage from idler wheel contact and dirt ingestion with loose soils.

### Undercarriage Condition

Worn or failed undercarriage components can severely impact the life of a track and at times with catastrophic damage to the track. Monitor the machine for some of the following conditions and repair or replace as needed:

- Drive wheel worn
- Drive wheel flanges worn thin
- Idler and midroller flange worn too thin can bend or crack, resulting in cutting of the track
- Rubber missing from more than 50% of any wheel or in patches across the width of the wheel will damage track carcass ID
- Idler pivot bushing wear will cause track alignment problems
- Worn wheel scrapers (can't adjust properly or aren't adjusted to 1/8" (3 mm) clearance)

### Drive Wheel Scrapers

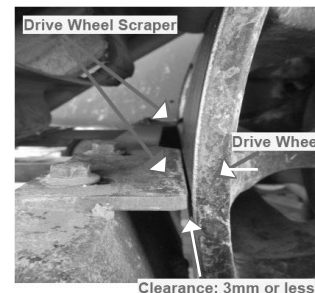


Mechanical damage from the drive wheel scrubbing the non-power side of the drive lug can be related to very low drawbar loading during extended periods of roading. This can also be caused by incorrectly sized

wheels, material buildup on drive wheels, or incompatible drive lug pitch of tracks on the machine.

Camso tracks are designed to reduce reverse scrubbing in all loading conditions. However, some drive wheels with aggressive scrub ratios can still be a concern during high speed, no load operation such as road travel, particularly on new tracks prior to the field operation break-in period. This condition is non-warrantable, and can be prevented by regular track inspections. Waiting until the drive lug is damaged or destroyed is considered improper operation.

Material build-up on the drive wheel can be more frequent in applications with damp soil, or sticky crop / plant residue. It is recommended that drive wheel scraper adjustment is maintained at 1/8" (3 mm) or less without contacting the drive wheel to minimize and remove material buildup. Drive wheel scrapers should be replaced if proper adjustment cannot be achieved.



Drive Wheel Scraper Plate Part Number:

- Buhler Versatile PN: 86046242

POSITIVE DRIVE TRACK SERIES

Camso 3500 Series (General Ag)



The 3500 Series track is designed for Ag primary and secondary tillage operations and field conditions. This track series is used in most harvesting applications, and has also proven to be very durable in Arctic applications. It provides excellent flotation and traction for tractors in a wide variety of applications.

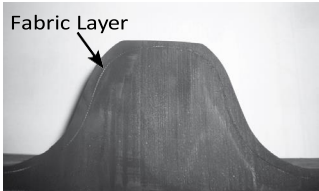
This track uses a 2" (50 mm) tall, 1.7"(44 mm) wide tread bar to provide optimal traction, ride quality and tread life. A 5.4 mm main cable is used to provide maximum strength to protect against track failure from ingestion of material or over tensioning of the track. Camso’s unique single cure process is used to accurately position carcass ply cables and rubber layers to provide a track of superior uniform strength and durability.

Camso 6500 Series (Heavy Ag, Scraper)



The 6500 Series track uses a special patented drive lug design to provide superior life for heavy duty applications. This track provides extended life for extreme conditions such as: aggressive or heavy load implement applications, TPH (Three-Point Hitch) tillage, scraper and side slope applications.

The 6500 Series family uses the same unique single cure technology, 5.4 mm main cables, and reinforcing plies as the 3500 Series track. The 6500 Series employs Camso’s patented technology that embeds a reinforcing fabric below the surface of the drive lug to provide an extra strong lug that resists cracking and breaking under high tractive efforts and heavy loads.



The 6500 Series Extreme Ag tracks utilize a 2.0" (500) tall, 1.7" (44mm) wide tread bar for optimal traction, ride quality and tread life within Ag applications.

The 6500 Series Scraper track utilizes a 1.9" (48 mm) tall, 2.2" (56 mm) wide tread bar. This tread bar profile is optimized to allow the tracks to slip slightly in heavy drawbar applications to prevent damage to the drive lugs and powertrain. The optimized tread bar profile reduces vibration on haul roads, and reduces flex-damage to the carcass in such demanding applications, which aids in increase overall track life.

VERSATILE DELTA TRACK MODELS 530, 580, 620



General Facts

- Produced from 2013 to current
- 530, 580, 620 HP models
- 97.5 inch gauge spacing
- 252 inch track length

| TRACK SERIES | TRACK DESCRIPTION | CAMSO P/N  | WIDTH (in.) | VERSATILE P/N |
|--------------|-------------------|------------|-------------|---------------|
| 3500         | General AG        | B30BJ02836 | 30          | 86052504      |
| 6500         | Extreme AG        | E30BJ02878 | 30          | 86057259      |
| 6500         | Scraper           | E30BJ02896 | 30          | 86056209      |
| 3500         | General AG        | B36BJ02810 | 36          | 86052505      |
| 6500         | Extreme AG        | E36BJ02895 | 36          | 86057260      |
| 6500         | H.E. Scraper      | E30BJ03378 | 30          | 86085159      |

Track System Service Information

- De-tensioning tool and hose is included with all new machines.
- If required – Camso de-tensioning tool (CST – 0120) is available.
- Always reference operator’s manual for correct bolt torque specifications, and tensioning / de-tensioning procedures.\*\*
- Please reference Camso document CPB-404 for track installation and removal procedures.

NOTE: Drive wheel scrapers should be installed and adjusted properly for maximum track life. See “Drive Wheel Scrapers” section for further details.

NOTE: Only 252" length Camso tracks specifically designed for Delta Track tractors are approved for use. Do not attempt to install 252" tracks that were designed for other products. The drive lug geometry is specific to the Delta Track tractor.

| # TREADS | HEIGHT (in.) | TIP WIDTH (in.) | PITCH (in.) | THICKNESS (mm) | PLY LAYERS |
|----------|--------------|-----------------|-------------|----------------|------------|
| 84       | 2            | 1.7             | 6           | 35             | 3          |
| 84       | 2            | 1.7             | 6           | 35             | 3          |
| 84       | 1.9          | 2.2             | 6           | 35             | 3          |
| 84       | 2            | 1.7             | 6           | 35             | 3          |
| 84       | 2            | 1.7             | 6           | 35             | 3          |
| 84       | 1,9          | 2,2             | 6           | 35             | 3          |

CAMSO TRACK REPAIR

For longest life, tracks should have loose components trimmed when:

- Cables are exposed in the carcass – Cables loose or protruding from the carcass should be trimmed to prevent damage to other components.
- Loose tread bar – Loose portion of the tread bar should be trimmed to prevent damage to other components.

NOTE: There are currently no repair or patch kits available for fixing cuts in the track carcass.

Camso Track Replacement Criteria

For best performance, tracks should be replaced when:

- Tread bar height is less than 0.5 in (12 mm).
- Track to ground slippage consistently exceeds 10%.
- Several (more than 3) tread bars are missing in a row.
- Multiple drive lugs are missing consecutively.
- Drive lugs have excessive wear (50% of drive lug is worn).
- De-tracking occurs due to worn or missing drive lugs.
- The main cables have torn in the wheel path (Tear across at least 1/2 the width of the carcass).
- Cables are showing on the inside surface of the track.
- Drive wheel to track slippage is excessive due to missing/worn track ID rubber or missing/worn drive lugs.

NOTE: For additional information related to both warrantable and non-warrantable track or wheel issues, please reference CPB-460 “Service Conditions and Warranty Guidelines - Agricultural Tracks including Drive Wheels, Idlers, and Midrollers” available at your authorized Buhler-Versatile or Camso dealer.

Delta Track - Track Selection

| TRACK SERIES TYPE           | 3500 |    | 6500 |    |         |
|-----------------------------|------|----|------|----|---------|
|                             | Ag   |    | Ag   |    | Scraper |
| WIDTH                       | 30   | 36 | 30   | 36 | 30      |
| General Ag                  | *    | *  |      |    |         |
| Heavy Ag                    |      |    | *    | *  |         |
| Ag scraper                  |      |    | *    | *  |         |
| Commercial scraper          |      |    |      |    | *       |
| 3 Point hitch               | *    | *  |      |    |         |
| Heavy 3 point hitch         |      |    | *    | *  |         |
| Severe side slope operation |      |    | *    | *  |         |
| Tile plow                   |      |    | *    | *  |         |

\* Recommended

Idlers and Midrollers Replacement Criteria

Idler Wheel

The idler wheels are the front and rear wheels within the track system. The idler wheels are attached to the track tensioning system and provide the tension on the track. They also aid in the adjustment of track alignment.

Idler wheels should be replaced if:

- Rubber material is worn or missing
- Steel hub is cracked or damaged

NOTE: Four idler wheels are required for each undercarriage. Idler wheels are not directional, so the same idler wheel will work for the inboard and outboard sides of the undercarriage.

Midroller/Bogie Wheel

Midrollers carry most of the weight of the tractor. Midrollers will wear over time and are susceptible to heat buildup from roading, track misalignment, and side hill applications.

Midrollers should be replaced if:

- Polyurethane material is missing/worn all the way across the width of the midroller.
- 1/3<sup>rd</sup> of the polyurethane material is missing/worn all the way around the midroller
- Polyurethane material is worn thin enough that material is sticking to the midroller
- Steel hub is cracked or damaged
- Midroller is no longer round (flat spot worn into surface)

Note: It is not recommended to continue to run midrollers with bare steel as track damage may occur.

Idler - Midroller Part Numbers

| DESCRIPTION | CAMSO P/N | VERSATILE P/N |
|-------------|-----------|---------------|
| Idler       | 5W-0261   | 86046287      |
| Midroller   | 4W-5005   | 86058444      |

Track OEM Aftermarket Cross Reference

Versatile Delta Track Tractors

| DESCRIPTION             | WIDTH/LENGTH (in) | PREVIOUS CAMSO P/N |
|-------------------------|-------------------|--------------------|
| Camso 3500 Ag           | 30 / 252          | -                  |
| Camso 5500 Scraper      | 30 / 252          | C30BJ02835*        |
| Camso 6500 Ag           | 30 / 252          | -                  |
| Camso 6500 Scraper      | 30 / 252          | -                  |
| Camso 3500 Ag           | 36 / 252          | -                  |
| Camso 6500 Ag           | 36 / 252          | -                  |
| Camso 6500 H.E. Scraper | 30 / 252          | -                  |

\* This track was replaced with the 6500 Scraper track.

Idler and Midroller OEM Aftermarket Cross Reference

Versatile Delta Track Tractors

| DESCRIPTION    | PREVIOUS CAMSO P/N |
|----------------|--------------------|
| Idler          | -                  |
| Midroller - PU | 4W-0310            |

Ground Pressure Chart (PSI)

| MODEL DELTA TRACK | Weight (lbs) | Track Width (in) |     |
|-------------------|--------------|------------------|-----|
|                   |              | 30               | 36  |
| Shipping          | 58850        | 6.8              | 5.7 |
| Max Operating     | 61000        | 7                | 5.9 |

| CURRENT CAMSO P/N | PREVIOUS VERSATILE P/N | CURRENT VERSATILE P/N |
|-------------------|------------------------|-----------------------|
| B30BJ02836        | -                      | 86052504              |
| -                 | 86052506*              | -                     |
| E30BJ02878        | -                      | 86057259              |
| E30BJ02896        | -                      | 86056209              |
| B36BJ02810        | -                      | 86052505              |
| E36BJ02895        | -                      | 86057260              |
| E30BJ03378        | -                      | 86085159              |

| CURRENT CAMSO P/N | PREVIOUS VERSATILE P/N | CURRENT VERSATILE P/N |
|-------------------|------------------------|-----------------------|
| 5W-0261           | -                      | 86046287              |
| 4W-5005           | 86046286               | 86058444              |



Visit our website for more information on our products and the location of the nearest distributor at [camso.co](https://camso.co)

## AUTHORIZED DEALER

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