

unihub.

User Manual

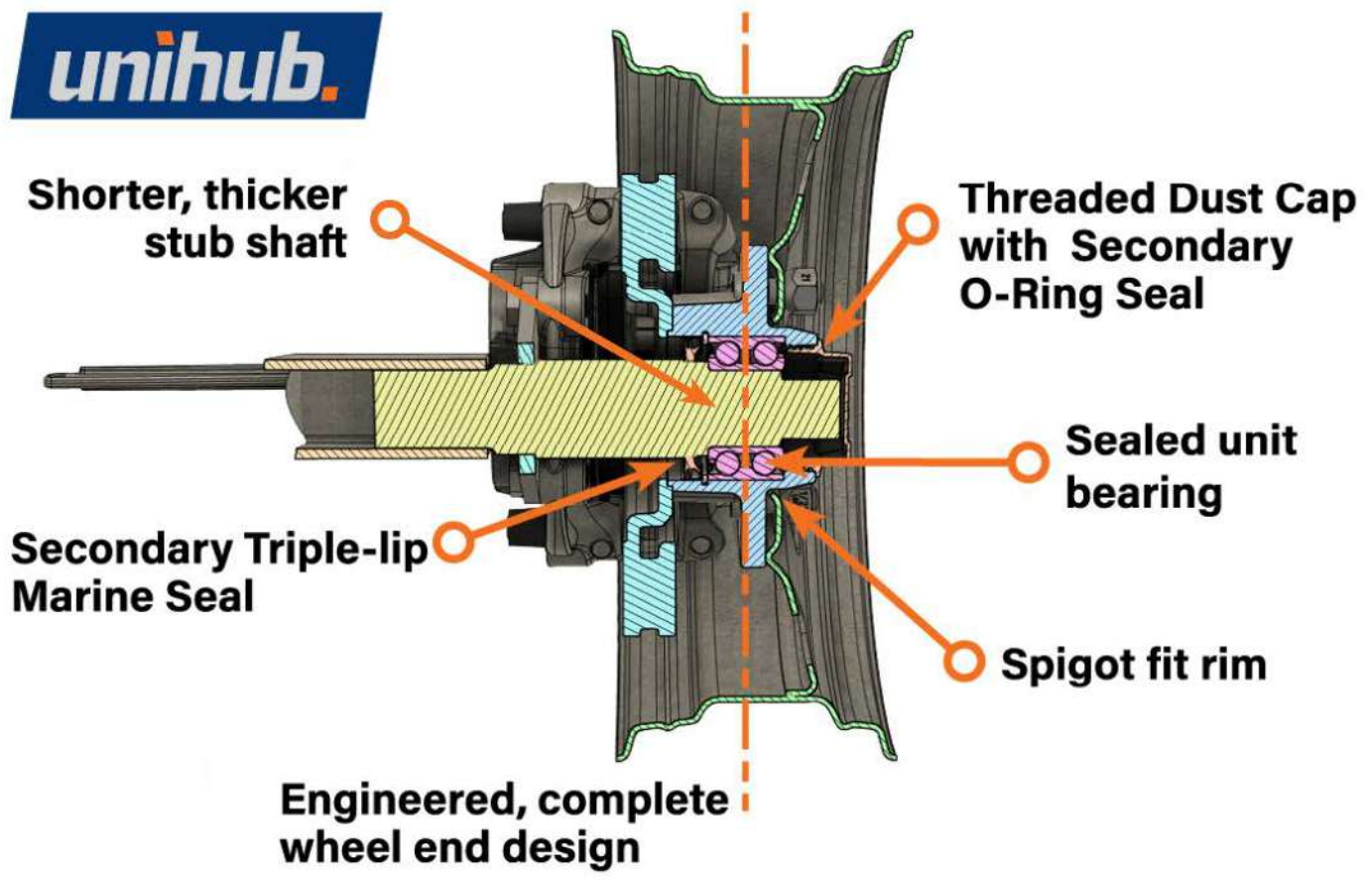
1.8T and 3.0T Unihub



TRAILPARTS[™]
Innovative Trailer Solutions



We do the business.



IMPORTANT: COMPATIBILITY REQUIREMENTS

The Unihub range has specific compatibility requirements, as follows;

- **Wheel offset:** this is extremely important, and only wheels with the offsets below may be used. Wheel manufacturers will sometimes express this measurement as "ET", i.e. ET10.
 - » **For 1.8T Unihub, with 39mm shaft;**
 - zero to +10 offset.
 - » **For 3.0T Unihub, with 42mm shaft;**
 - zero offset
- **Spigot fit:** the centre bore of wheels are a neat fit with the nose of the Unihub range, which centres the wheel on the hub, and ensures wheelnuts seat correctly during fitment. Wheel suppliers will sometimes express this measurement as a "CB", i.e. CB 81.3. Note: Spigot fit is not critical, but is required for the Trailparts 3 year warranty to apply.
 - » **For 1.8T Unihub, with 39mm shaft;**
 - 81.2mm nose for use with 81.3mm centre bore wheels, usually 13" and 14" 5 stud.
 - 106.1mm nose for 106.2mm centre bore wheels, usually 6 stud wheels ≥15"
 - » **For 3.0T Unihub, with 42mm shaft;**
 - 106.1mm nose for use with 106.2mm centre bore wheels, usually 6 stud wheels ≥15"
 - 109.9mm nose for use with 110mm centre bore wheels, usually 5x150mm Landcruiser wheels ≥15"

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UNI HUB COMPONENTS

The Trailparts Unihub range is a quantum leap for trailer manufacturers in New Zealand and Australia, moving on as it does from outdated taper-roller bearing configurations, and offering lower maintenance and better durability.

Trailparts has developed these hubs and the parts used in them specifically to suit trailer designs already in production and using common components already being fitted. Installers and fitters are responsible to ensure when specifying and building trailers using the Unihub range that any Non-Trailparts components fitted around them are fully compatible.

BEARINGS

Bearings fitted to these hubs are non serviceable, sealed-for-life units. They are assembled in factory pre-loaded and pre greased. Both bearing options have integral dual lip oil seals.

- **For 1.8T Unihub** – these are a deep groove dual row angular contact unit bearing, with 72OD x 37W x 39ID dimensions. When used in compatible wheels, 1.8T Unihub assemblies have a static load safety factor of 5.3, and a dynamic load safety factor of 4.6. Trailparts part number is HU3901.
- **For 3.0T Unihub** – these are a dual row taper roller unit bearing, with 82OD x 40W x 42ID dimensions. When used in compatible wheels, 3.0T Unihub assemblies have a static load safety factor of 8.7, and a dynamic load safety factor of 6.3. Trailparts part number is HU3902.



CIRCLIP

Bearings are retained in the hub using heavy duty circlips.

- **For 1.8T Unihub** – size is 72mm. Trailparts part number is AU3911.
- **For 3.0T Unihub** – size is 82mm. Trailparts part number is AU3912.



SECONDARY SEALS

Trailparts have developed a unique triple-lip marine seal specific to Unihub designs, and is a recommended addition and are required in order for the full 18 month warranty cover to be valid (3 year warranty if Trailparts assemble the axle).

- **1.8T Unihub seal part number is HU4901**
- **3.0T Unihub seal part number is HU4902**



HUB COMPONENTS CONT.

GREASE CAP

Both Unihub variants take the same screw-in grease cap, which is an injection molded nylon that is impact and UV resistant. The O-ring seal aids waterproofing of the hub and prevents the cap becoming loose.

Part number is AU1901.

Note: Knock-in traditional 63.5mm grease caps can be used if desired, but will limit hub warranty to 18 months.



STAKE NUT

Hubs are secured on the stub by means of a heavy duty M30 flanged stake nut. These are 41mm AF, and torqued to 280Nm. These nuts can be used twice.

- **1.8T Unihub** – M30 nut with 51mm flange, Trailparts part number AU2901.
- **3.0T Unihub** – M30 nut with 59mm flange, Trailparts part number AU2902.



WHEEL STUDS

Hubs are supplied with wheelstuds inserted.

- **With 5 x 114.3mm PCD (1.8T only):**
 - » 1/2" UNF x 38mm. Trailparts part number is H4982.
- **With 6 x 139.7mm PCD (1.8T and 3.0T):**
 - » 1/2" UNF x 53mm. Trailparts part number H4985.
- **With 5 x 150mm PCD (3.0T only):**
 - » 9/16" UNF x 52mm, Trailparts part number H4978.



WHEELNUTS FOR STEEL WHEELS

- 1/2" UNF wheelnuts are 60 degree taper, 21mm AF wheelnuts. **Trailparts part number H4996.**
- 9/16" UNF wheelstuds are 60 degree taper, 23mm AF wheelnuts. **Trailparts part number H4992.**



UNI HUB COMPONENTS INSTALLATION AND MAINTENANCE

STATEMENT OF PROCEDURE

UNI HUB ASSEMBLY



IMPORTANT: ASSEMBLY REQUIREMENTS

Trailparts recommend that bearings are installed by a professional with the correct tools and equipment. Bearings must be pressed in straight, and while only pressing on their outer ring.

INSTRUCTIONS

1. Fit Inner Bearing to Hub:

- Smear a small amount of lithium grease onto the bearing OD and hub bearing bore.
- Some bearings have a lead-in taper on one side of them to assist them starting square to the bore. Where this is present, insert that side into the hub first.
- Bearings are interference fit on the hub using a hydraulic press and a steel mandrel designed to land on the outer bearing surface to press the bearing all the way home in the hub.



2. Fit Circlip:

- Smear a small amount of lithium grease on the circlip. This is intended solely as a protection against early rusting of the circlip.
- Using a pair of circlip pliers, install the circlip in behind the bearing. Pay attention to ensure it is fully in the groove.
⚠ Take care to ensure that tools with sharp edges do not damage the integral bearing seal.



3. Fit Seal Wear Ring:

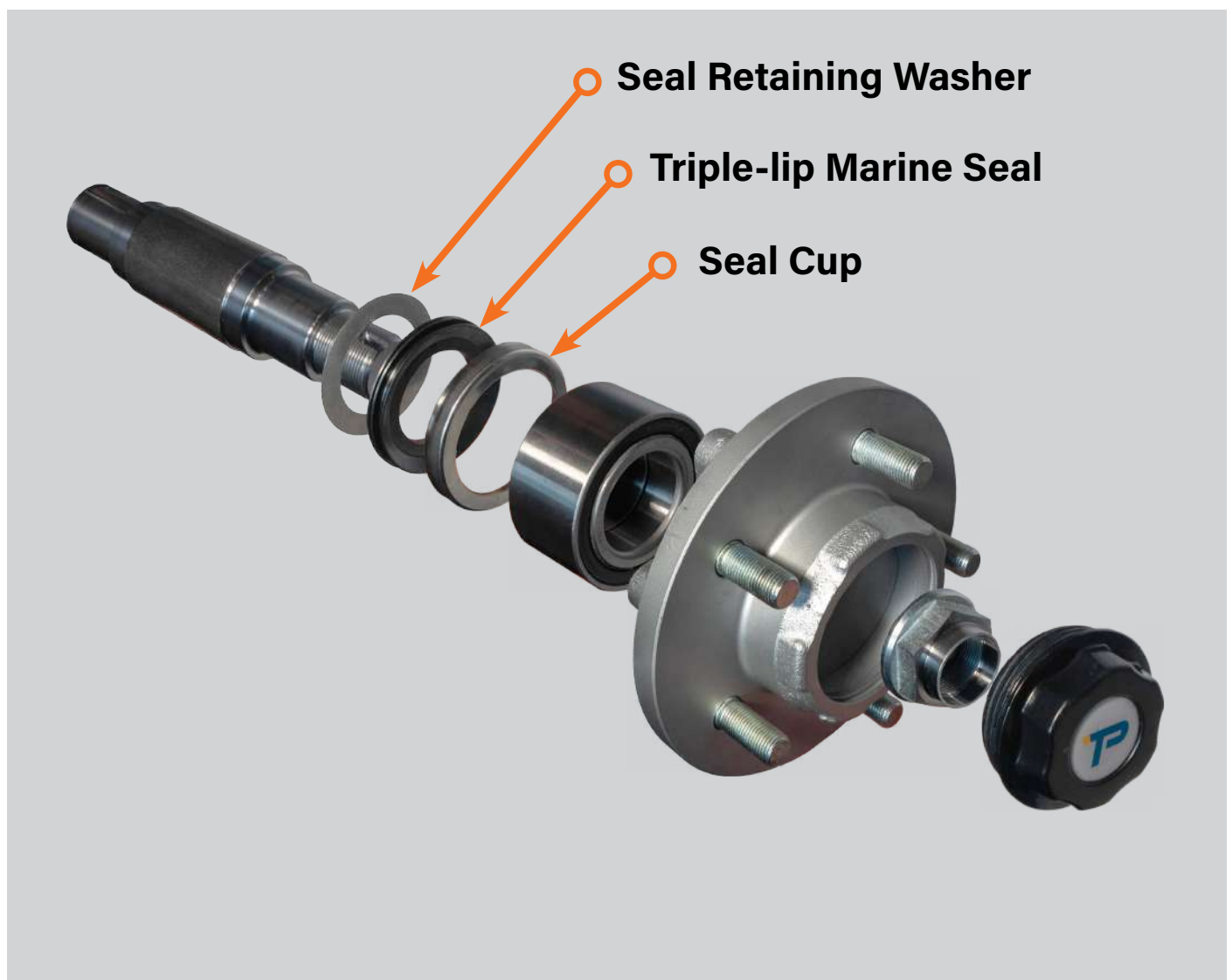
- Insert the seal wear ring cup using a mandrel that fits as close as possible to the outside of it. Press it fully home, and until it rests against the circlip.
- Smear a small amount of lithium grease onto the inner surfaces of the seal ring.



4. Final Greasing:

- Smear a small amount of grease to the machined and unplated surface inside the nose of the hub. It may be that some of the grease that has pushed out during the pressing of the bearing can be used for this. Greasing like this is intended solely as a protection against surface rust, should only be a light covering, and not be enough to be able to work into the bearing itself.

The hub is now ready to fit to the axle.



UNI HUB ONTO STUB AXLE

TOOL KIT

- Torque Wrench (41mm Socket)
- Flat Punch
- Hammer / Mallet
- Seal Driver
- Multi Grips
- Circlip Pliers
- Workshop Gloves



INSTRUCTIONS

1. Marine Seal & Washer:

- Clean the seal seat on stub axles and the inner bore of the seal so both are grease free and dry. This ensures maximum friction between seal and stub.
- Fit the flat seal retaining washer against the shoulder on the stub axle.
- Fit seal to stub with seal lips facing toward the threaded end of the stub. When fitting seal to stub Loctite or gasket compound can be used to reduce friction.



2. Fit Hub to Stub Axle:

- Apply a thin smear of lithium grease onto the stub shaft to assist hub fitment.
NOTE: The bearing is a clearance fit to stub.
- Put the hub onto the stub axle, taking care to keep it square to the shaft so it slides on easily. **(Do not force)**
- Check the seal is seated inside the wear ring in the hub and is not distorted in any way. Ensure that the seal enters the hub squarely to avoid damage to the sealing lips.



3. Stake Nut:

- Lube the stub thread with lithium grease.
- Screw the stake nut onto the stub and up against the bearing. Torque stake nut to **280Nm or 205ft/lb.**
- Use a flat blunt punch or other suitable blunt tool to carefully deform the stake collar into one of the grooves provided in the stub. Do not stake so hard that the thin stake area of the nut breaks through.
NOTE: If the nut is being used a second time, stake the opposite, undamaged portion of the nut to the one used in the first fitting into the groove on the opposite side of the stub axle.
 - » If both staking positions are deformed from previous use, the stake nut should be replaced.



UNI HUB ONTO STUB AXLE CONT.

4. Dust Cap:

- Very lightly smear lithium grease onto the O-Ring to secure seal.
- Insert the dust cover, taking care to screw it all the way home. A light tighten using a multigrip tool is recommended, and a light rag or similar can be used under the jaws to prevent damage to the cover.

Note: If there is structural damage on the grease cap it should be replaced.



NOTES / COMMENTS

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SEAL-ONLY REPLACEMENT PROCEDURE

1. Remove Hub from Stub Axle:

- Remove the hub assembly by undoing the stake nut and gently sliding the hub off the stub.
Note: Care must be taken so that bearing inner races (there are two) do not separate during removal.
- Inspect bearing seals for damage and check for moisture presence.
- If the bearing has separated during the dismount procedure above, it must be replaced.



2. Remove & Check Marine Seal:

- Remove the used seal from the stub axle.
- Inspect the seal seat surface on the stub axle. If it is pitted or rusty, use fine sandpaper or steel wool to lightly clean this, and clean it.
- Clean the bore of new seal and fit to stub as per page 7.



BEARING REPLACEMENT

1. Follow the previous removal procedure.

2. Remove Seal Cup:

- Using a flat screwdriver or similar tool, remove the stainless seal wear ring from within the rear of the hub. This can't be done without damaging the wear ring, and it will need to be replaced.

3. Remove Circlip:

- Remove the bearing retaining circlip with circlip pliers.

4. Remove Bearing:

- Remove the bearing from the hub by pressing through from the front side. The bearings are interference fit and tighter in the hub than normal bearings, so a hydraulic press is recommended.

5. Clean & Maintain:

- Clean the inside of the hub, removing any old grease.
Note: If any rust is present, lightly clean this off using steel wool or fine sandpaper.

6. Follow the "Unihub Assembly" procedure.

7. Follow the "Unihub Onto Stub Axle" procedure.



MAINTENANCE & SERVICING INFORMATION

The correct assembly and adjustment of all equipment is critical to the safe operation of trailers. The procedures described for servicing the Trailparts Unihub range should only be carried out by a competent person. Where possible, we recommend this be done by a qualified mechanic or experienced trailer builder.

All procedures should be carried out with the trailer connected to a tow vehicle, and on level ground with either the parking brake applied or wheel chocks front and rear. The trailer will need to be jacked off the ground. To do so safely, refer to the trailer manufacturer's hand book for jacking points.

① **NOTE:** *Although they have extended life, checking the condition of Unihub bearings should still be a part of any trailer maintenance schedule.*

The following check intervals are intended as a guide only, and where used off-road or in water, checks should increase.

- For general use trailers used on road: every 12000km or 6 months.
- For trailers used off-road: every 6000km or 6 months.
- For boat trailers: every 3000km or 3 months.

Where trailers are left unused for periods of more than 3 months, a check should be made of Unihub bearings before use.

These instructions relate to:

- **Trailparts 1.8T Unihub range with 39mm shaft**
- **Trailparts 3.0T Unihub range with 42mm shaft.**

Initial checks

1. Jack the trailer up. Take each wheel in turn, and as though you are attempting to rock the hub on the shaft, apply load alternatively to the top and bottom of the wheel, and repeat in a side to side motion also.
 - » If there is any more than minimal movement, or there is an audible clunking sound, the bearings will need to be replaced.
2. With the trailer still jacked up, spin each wheel, and listen for a rumbling sound, which could indicate that the bearing races are pitted.
 - » If wheel bearings are noisy, they will need to be replaced.

If after these checks it is determined the wheel bearings are sound, no further action is required.

3. (If fitted): If the secondary seal can be inspected, it is a good opportunity to do so.
 - » If the rubber seal shows signs of damage, it is recommended it is replaced.
 - » If the surface that the seal runs on is corroded or pitted, it is a good idea to take further action particularly if on a trailer being used regularly in water.



TRAILPARTS UNIHUB LIMITED 3 YEAR WARRANTY

Trailparts warrants to the original purchaser that its Unihub hub range shall be free from defects in materials and workmanship for the following periods from the date of first sale of the trailer incorporating such components.

Warranted for 3 years;

- If not for marine or off road use, and;
- If single axle, or if tandem or tri-axle, in a load-sharing suspension, and;
- If fitted with Trailparts manufactured and fitted axles, and;
- If fitted with spigot fitted wheels with an offset in the range of 0 - +10, and;
- If fitted with secondary Trailparts marine seals and Trailparts screw-in sealed grease caps.



Warranted for 2 years;

- If not for marine use, and;
- If in a non-load sharing tandem or tri-axle axle suspension, and;
- If in axles fitted by a trailer, suspension or chassis builder, and;
- If fitted with wheels with an offset in the range of 0 - +10, and;
- If fitted in accordance with Trailparts specifications, and;
- If fitted with secondary Trailparts marine seals and Trailparts screw-in sealed grease caps.

All other applications are warranted for a period of 18 months;

- If fitted in accordance with Trailparts specifications, and;
- If for marine use, fitted with secondary Trailparts marine seals and screw-in sealed grease caps.

Exclusions

The following are specifically excluded from coverage by the terms of this Unihub Limited Warranty;

- Wearing components, such as brake shoes and pads, brake calipers and their parts, or electric or hydraulic brake plates and their parts.
- Beam axles, suspensions arms and other parts to which the Unihub product is fitted
- Claims for cosmetic finish or surface corrosion
- Claims for warranty where new parts not supplied by Trailparts have been fitted

In addition, excluded from coverage is damage or defects which result from accident, collision, abuse, normal wear and tear, neglect, improper maintenance including long periods of non-use, improper installation, incorrect alignment, improper wheel nut torque, hub imbalance, wheel imbalance, incorrect wheels fitted, or any damage caused thereby, alteration, or overloading.

Transfer of Warranty

This warranty extends to the original installation of Trailparts products and is not transferable to other parties. Trailparts does not assume responsibility for any promises, warranties, or representations beyond those expressed in this written document.

Remedy

Trailparts will, at its option, repair or replace the affected components of any defective axle, repair or replace the entire defective axle, or refund the then-current list price of the axle. In all cases, a reasonable time period must be allowed for warranty repairs to be completed.

Allowance will only be made for repair and/or installation costs at the complete discretion of Trailparts, and only where specifically approved prior to such repair and/or installation occurring.

TRAILPARTS UNIHUB LIMITED 3 YEAR WARRANTY

In order to make a claim under these warranties:

- You must be the original purchaser of the vehicle in which the Trailparts axles were originally installed.
- You must promptly notify us within the warranty period of any defect, and provide us with the axle serial number and any substantiation which may include, but is not limited to, the return of parts that we may reasonably request.
- The axles or suspensions must have been installed and maintained in accordance with Trailparts specifications
- In all cases, Trailparts reserves the right to fully satisfy its obligations under this Limited warranty by refunding the then-current list price of the defective axle and/or parts, or if the axle/parts have been discontinued, of the most nearly comparable current product.
- Trailparts reserves the right to furnish a substitute or replacement component or product in the event an axle or any component of the axle is discontinued or is otherwise unavailable.

Incidental and Consequential Damage

This Trailparts Limited Warranty specifically excludes incidental and consequential damages, including loss of time, inconvenience, loss of use, towing fees, telephone calls, accommodation, cost of meals, rental vehicles for any breach of any express or implied warranty, including the implied warranties of merchantability and fitness for a particular purpose.

The Unihub range comprises these combinations;

- 1.8T vented disc with Patriot calipers
- 1.8T disc with STRIKE! calipers
- 1.8T 10" electric drum
- 3.0T 12" hydraulic drum
- 3.0T vented disc with Patriot calipers
- 3.0T 12" electric drum

Note: All hubs rated in pairs ie per axle



Electric Drum



Hydraulic Drum



Patriot Disc



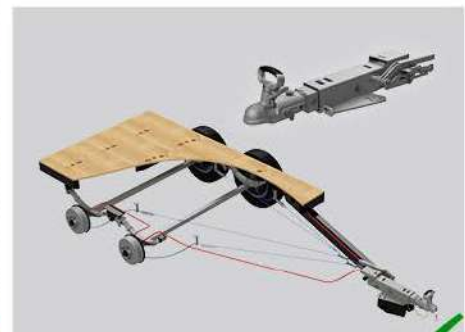
Strike! Disc



Light Trailers
0-2500kg



Heavy Trailers
2501-3500kg



Hygo
Braking System



NOTES / COMMENTS

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AU Freephone 1300 538 598

E sales@trailparts.com.au

www.trailparts.com.au

NZ Freephone 0800 487 245

E sales@trailparts.co.nz

www.trailparts.co.nz



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