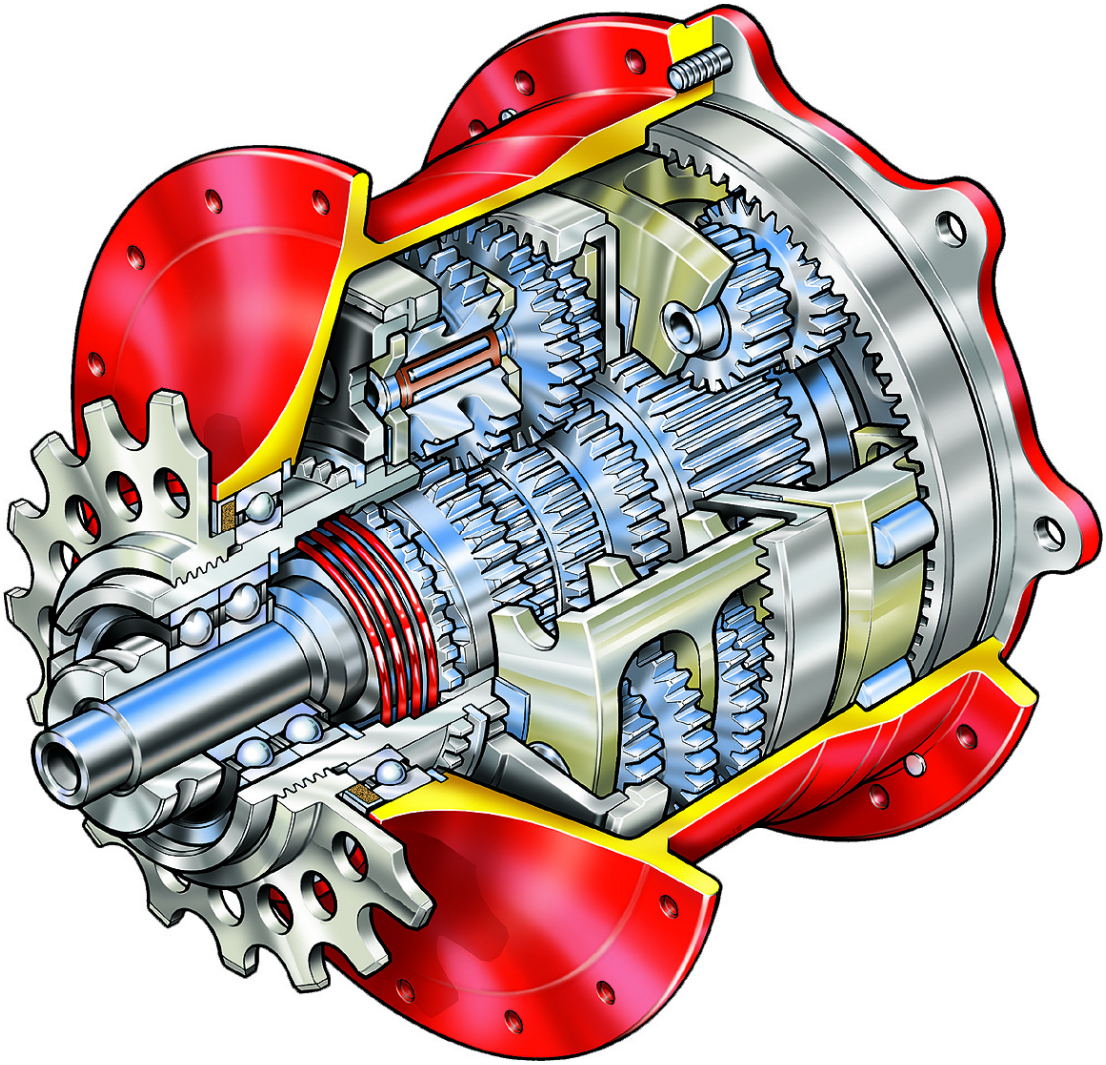
Rohloff® SPEEDHUB



OEM Literature for Manufacturers

Rohloff ***SPEEDHUB 500/14***

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Rohloff SPEEDHUB 500/14

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Different types of SPEEDHUBs and their assembly

1. Version 1: OEM Axleplate with a specially designed *Rohloff SPEEDHUB 500/14* compatible dropout

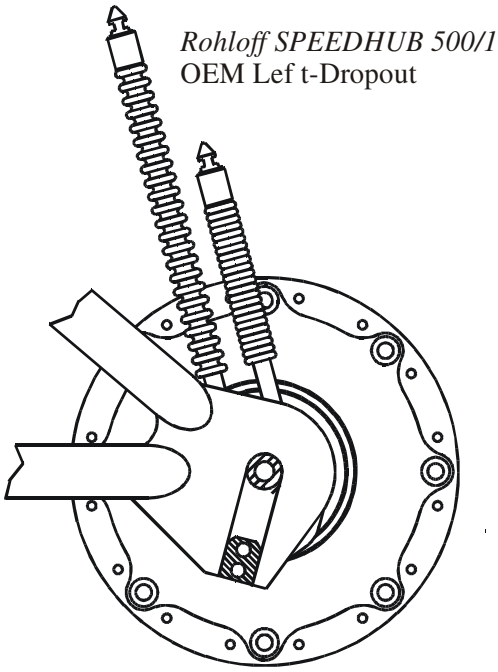

Fig. 1: Left dropout mounted with *500/14 Rohloff SPEEDHUB 500/14*

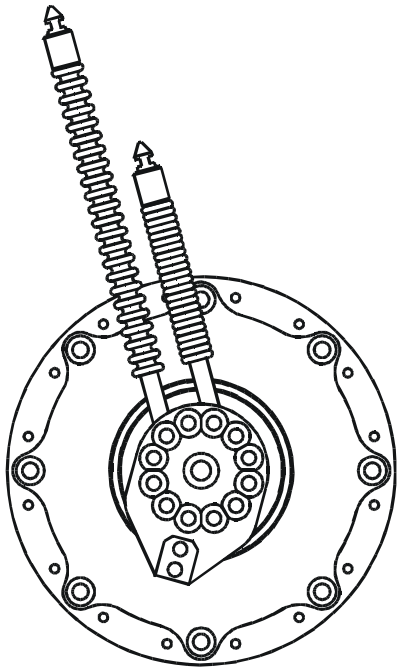

Fig. 2: *Rohloff SPEEDHUB* with CC OEM axle plate

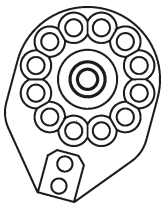

Fig. 3: CC OEM axle plate (also available as a TS OEM axle plate)

This version is particularly suitable for rear suspension frames. In order to compensate for the altering chain length as the rear triangle moves, an external chain tensioner will also be required (Rohloff accessories, Article No. 8250).

All necessary measurements can be found on the accompanying diagram OA11.
It is important to ensure the measurement ’32 -0.5mm’ is not exceeded to ensure there won’t be any clearance issues when mounting an EX cable box (see right-hand illustration of fig 15). Both CC (hollow, quick-release) and TS (M10x1 threaded) axle versions can be used with this style dropout

Different hub types and their assembly instructions

2. Version No 2-1: OEM axle plate (brazed on section) for adjustable dropouts

Version 2 - 1: Steel or aluminum dropout

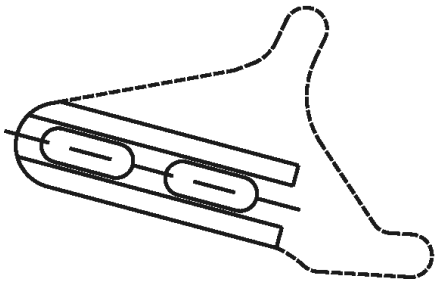

Fig.4: Steel or aluminum cluster (seat), Left-hand side

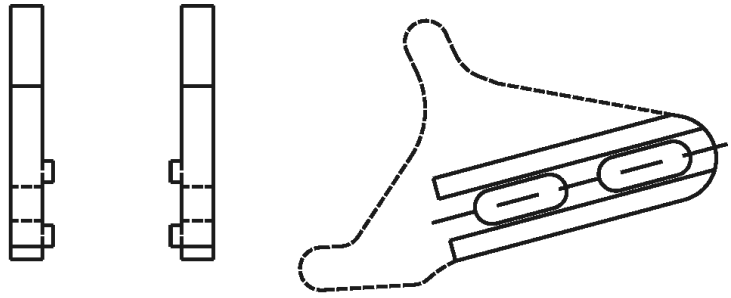

Fig. 5: Steel or aluminum cluster (seat), right-hand side

The exact dimensions are shown on the technical drawing #OA04.

Different hub types and their assembly instructions

3. Version No. 2-2: Adjustable dropout insert with derailleur hanger, for installing either a *Rohloff SPEEDHUB 500/14* or a rear derailleur

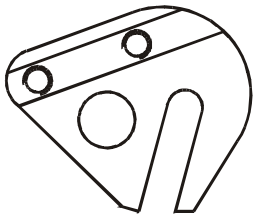

Fig. 6: left-hand dropout OA13

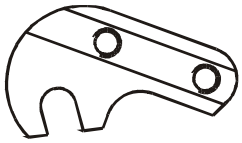

Fig. 7: right-hand dropout OA14

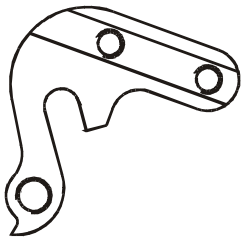

Fig. 8: right-hand dropout with derailleur hanger #OA28

The dropout as in shown Fig. 8 must be fitted to all full suspension bikes where the chain length changes.
This dropout also allows the mounting of a rear derailleur. It can therefore be used with the *Rohloff SPEEDHUB 500/14* or a conventional derailleur system.
Fig. 6 & 7 show the left- and right-hand dropout inserts which are designed solely for SPEEDHUB 500/14 use.

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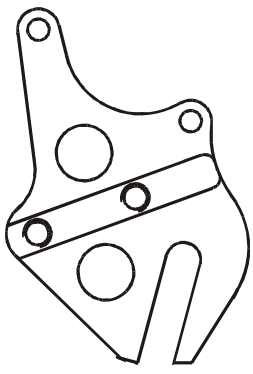


Fig. 9: OEM dropout insert (DB), disc brake mount on left-hand side

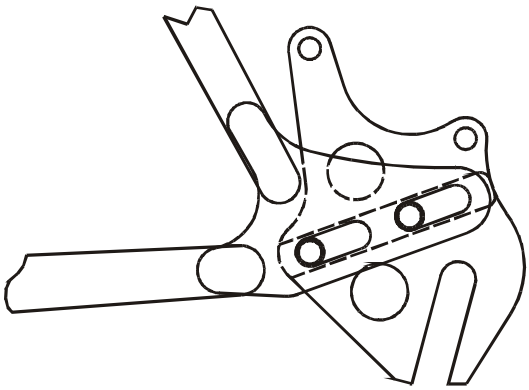


Fig. 10: OEM dropout DB, fully assembled

With regards to the installation of a disc brake, the following dropout will be necessary:

The exact dimensions are shown on technical drawing #OA25.

Different hub types and their assembly instructions

4. Version 3: OEM2 axle plate; bicycle frame with disc brake mount (International Standard IS-1999) – rim brake use

Dropout with disc brake mount (International Standard IS-1999):
If a disc brake is not mounted, the rear disc brake mount can be used instead of a standard long torque arm. The Axle plate CC/TS-OEM2 and its components will be required. From the inside of the frame, a bolt has is inserted into the lower disc brake caliper mounting point. The axle plate CC/TS-OEM2 can lock itself around this bolt.

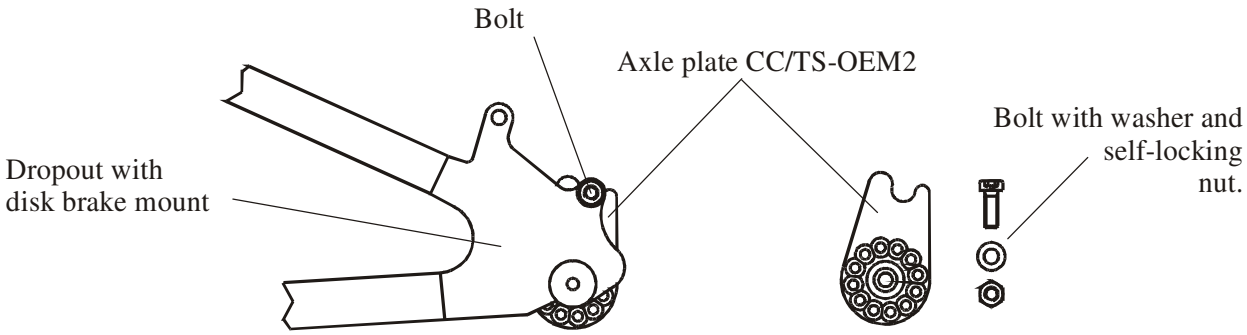


Fig. 11: Dropout with disc brake mount (International Standard IS-1999)

The OEM2 axleplate cannot be used to mount a *Rohloff SPEEDHUB 500/14* into frames with vertical dropout slots where the IS or Postmount disc brake mount is positioned on the chainstay. The only exception to this rule is when an additional hole is positioned in the dropout behind a vertical line through the axle (Fig. 12b). **This hole must accept an M6 bolt or an M5 bolt in connection with the special M5-OEM2 adapter (Article #8552).**

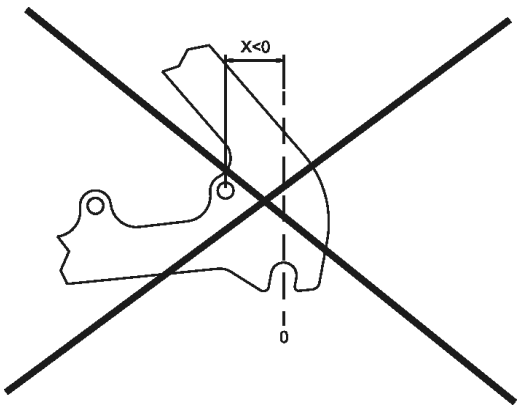


Fig. 12a:

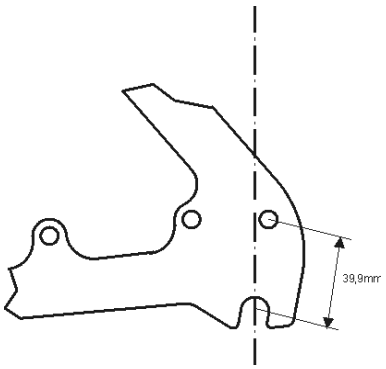


Fig. 12b:

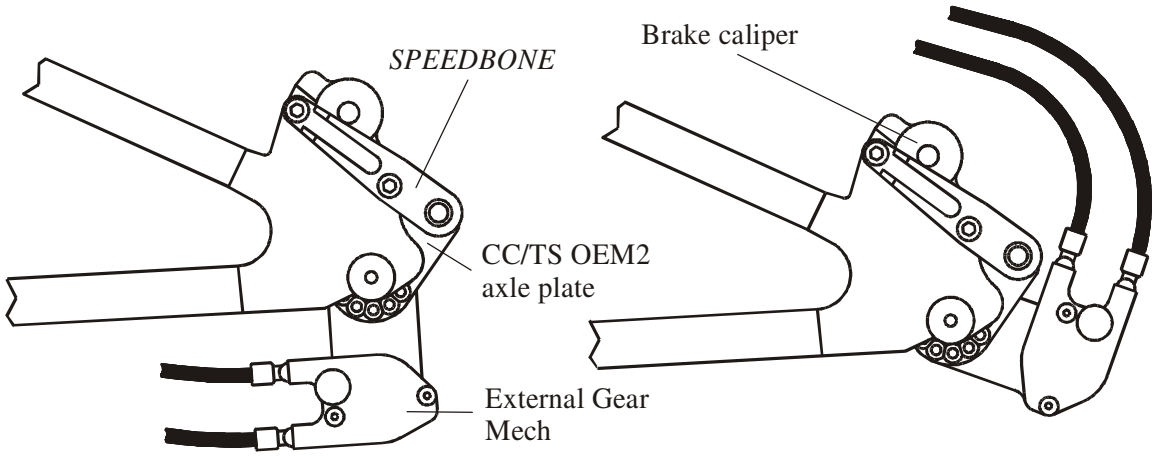
Fig. 12c:

Different hub types and their assembly instructions

5. Version 4: OEM2 axle plate; bicycle frame with disc brake mounts of International Standard (IS-1999)*, and a mounted disc brake

***Dropouts built to International Standard IS-1999 feature 16.3mm distance between the inner face of the dropout and the brake disc itself.**

Dropout with disc brake mount (International Standard IS-1999):
If a disc brake is mounted, the torque can be anchored to the frame using the CC OEM2 or TS OEM2 axleplate, in conjunction with either the SPEEDBONE or Monkeybone.



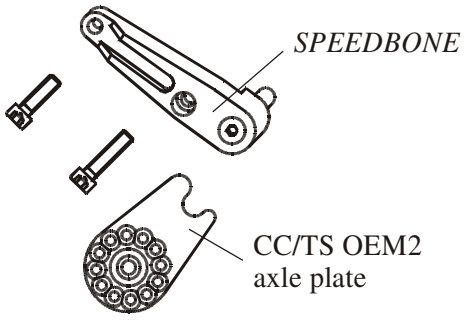


Fig. 12d: Mounting the OEM2 axleplate with SPEEDBONE

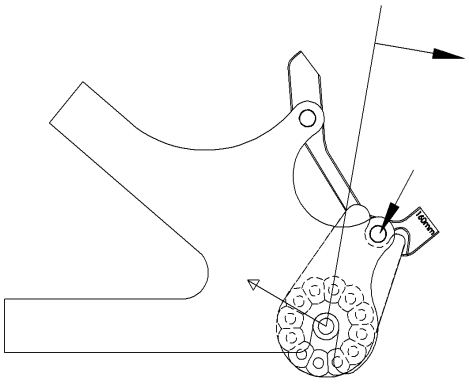
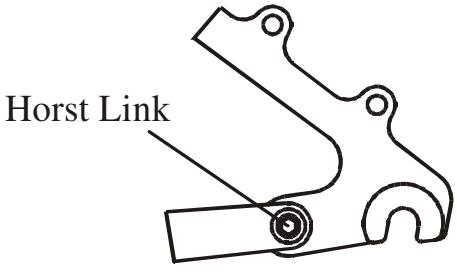


Fig. 12e: Mounting the OEM2 axleplate with Monkeybone

Fig. 13: The *ROHLOFF SPEEDHUB 500/14* can also be fitted on full suspension frames which feature a 'Horst-Link' and disc brake mounts (International Standard IS-1999) by using an OEM2 axleplate together with a SPEEDBONE or Monkeybone**.**



6. Versions 3 and 4: General requirements for frames with International Standard (IS-1999) disc brake mounts:

Frames with International Standard (IS-1999) disc brake mounts:
If the disc brake mount on the frame is used to anchor the SPEEDHUB torque, then this area must have the following dimensions.

Dropout with disc brake mount

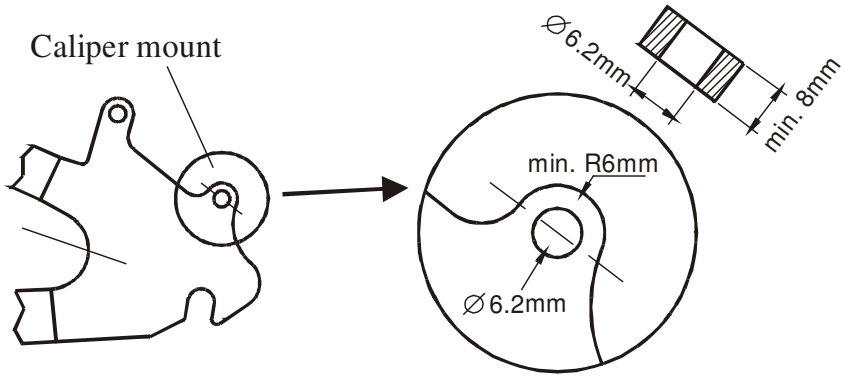


Fig. 14: Dropouts with a disc brake mount of International Standard (IS 1999) 16,3mm.

If the above dimensions are kept and the frame material is faultless, the manufacturer may safely install the *Rohloff SPEEDHUB 500/14*, as described for versions 3 and 4 below.
The technical OEM2 data sheet must be referred to when using this product!

Furthermore it is necessary to grant retailers permission to use this method of supporting the output torque produced by the *Rohloff SPEEDHUB 500/14*!

Different hubs and their assembly instructions

7. All Versions: Disc brake version **DB**, External Gear Mechanism **EX**.

The External Gear Mechanism (**EX**) must be used when equipping a bicycle with a *Rohloff SPEEDHUB 500/14* and Disc Brakes (**DB**).
The external transfer box must be positioned so that an optimal cable routing is achieved. The shifting box can be rotated in 30° increments to achieve this perfect cable routing.
Cables should be routed as close to the pivot point as possible when mounting a *Rohloff SPEEDHUB 500/14* into a full-suspension bike. This helps reduce the additional friction created in the cables as they try to move as the rear triangle is activated. Generally we recommend routing the cables along the downtube and chainstay for full-suspension bicycles.

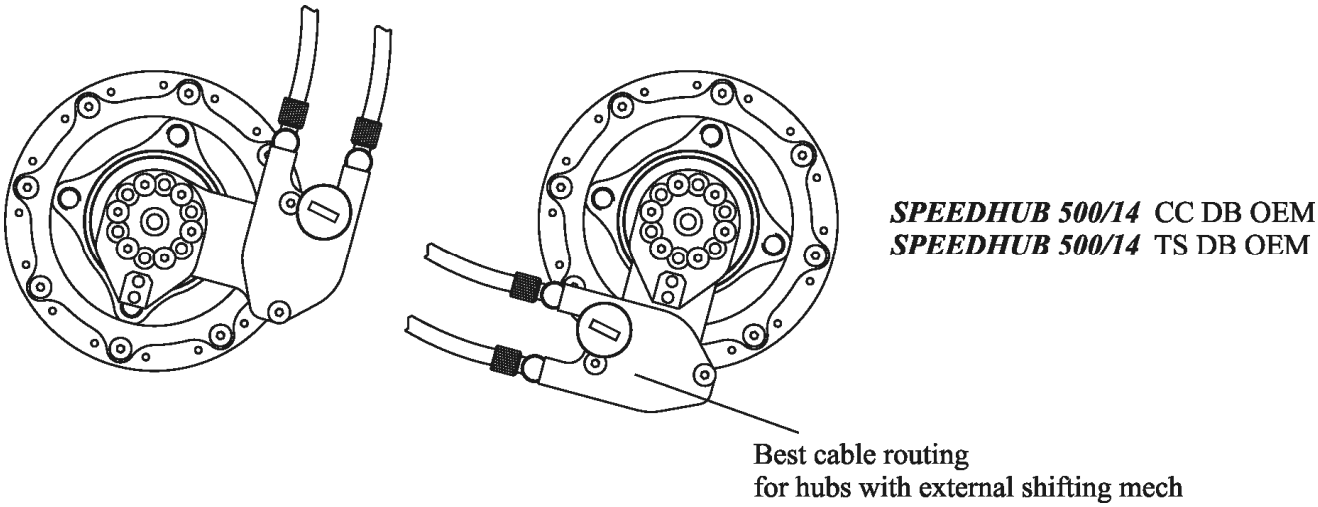


Fig. 15: External Gear Mechanism

The external gear mechanism should be used when internal routing is not possible for any reason e.g. an extremely short rear triangle where there the possibility to mount a cable guide is not foreseen. This is also the preferred gear mechanism for long distance expedition/touring bikes due to the easy availability and replacement of the inner shifter cables.

Different hub types and their assembly instructions

8. All versions: Internal Gear Mechanism – disc brake mounting not permitted

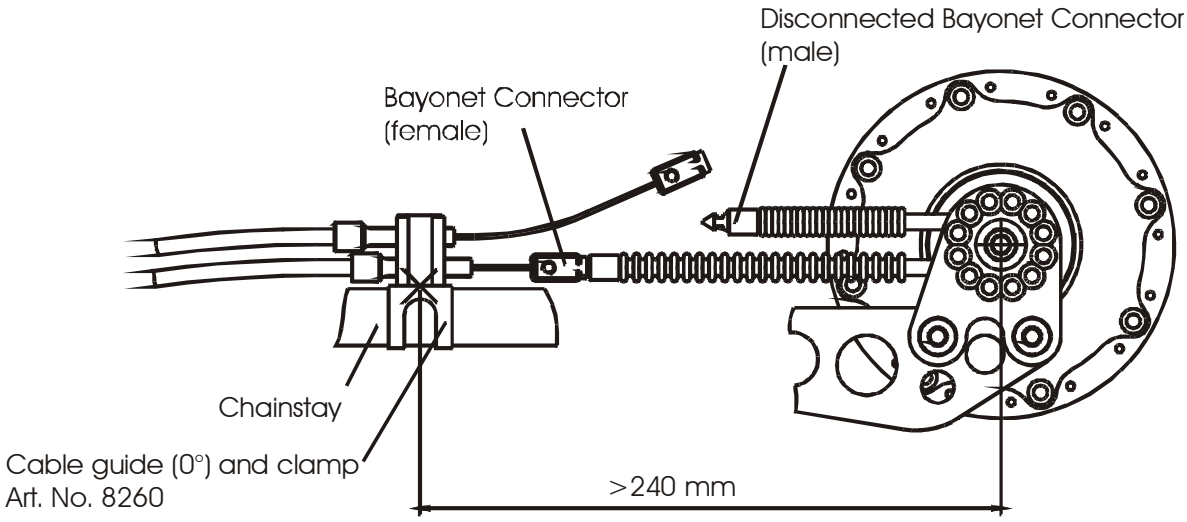


Fig. 16: Internal cable routing via chainstay

The Internal Gear Mechanism can be chosen whenever rim brakes are used and a cable guide can be installed - with regards to the given dimensions - either onto the brake boss or clamped to the chainstay.

If routing the cables via the chainstay, please order the 0° cable guide (Article # 8260). It is important to ensure that this guide is mounted avoiding any unnecessary angles between the guide and the SPEEDHUB 500/14 as these could lead to premature cable wear!

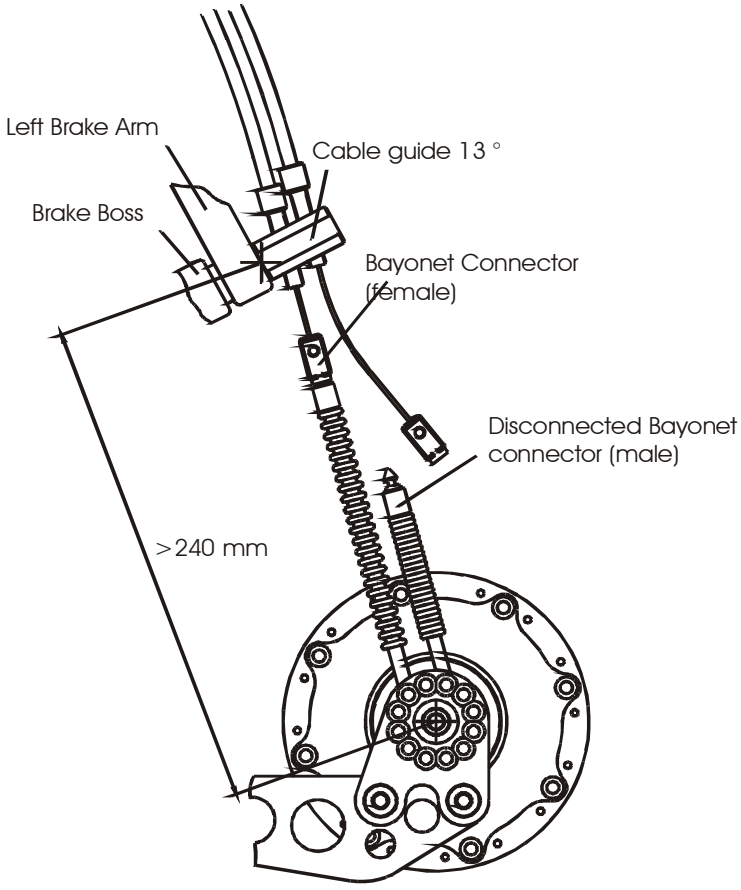


Fig. 17: Internal Gear Mech cable routing via brake boss.

Different hub types and their assembly instructions

09. Spoke length and rim diameters: Spoke lengths: 29” - 28" - 26" - 24" - 20" - 18”

The *Rohloff SPEEDHUB 500/14* is available with either 32, or 36 spoke holes forming a hole diameter of 100mm. 26“-wheels therefore, require shorter spokes which are slightly more difficult to source. Along with the SPEEDHUB, we can also provide silver Sapim Race spokes 2,0/1,8/2,0mm in all even lengths between 228mm and 244mm. We also offer the most common spoke length of **238mm in black**. The table below shows the required spoke lengths for the most commonly found ERDs currently used for bicycle rims**.** As the hub flange is symmetric, all spokes required for lacing the *Rohloff SPEEDHUB 500/14* will be the same length:

Laufrad größe / Wheel size	Anzahl Kreuzungen / Number of Spoke Crosses	ERD*	32-Loch Speichen-länge / 32-Hole Spoke lengths
18"	1-X	341-343	128
		344	130
20"	1-X	372-373	144
		374-377	146
		378-381	148
		382-385	150
		386-389	152
		390-394	154
24"	1-X	472-474	192
		475-478	194
		479-482	196
		483-486	198
		487-490	200
		491-495	202
		496-499	204
		500-503	206
26"	2-X	516-517	226
		518-521	228
		522-525	230
		526-529	232
		530-533	234
		534-537	236
		538-541	238
		542-545	240
		546-549	242
28"	2-X	586	260
		587-590	262
		591-594	264
		595-598	266
		599-602	268
		603-606	270
		607-610	272
29"	2-X	611-614	274
		615-618	276
		619-622	278
		623-626	280
		627-629	282

Laufrad größe / Wheel size	Anzahl Kreuzungen / Number of Spoke Crosses	ERD*	36-Loch Speichen-länge / 36-Hole Spoke lengths
18"	1-X	341	126
		342-344	128
20"	1-X	372-375	144
		376-379	146
		380-383	148
		384-387	150
		388-392	152
		393-396	154
24"	1-X	472	190
		473-476	192
		477-480	194
		481-484	196
		485-488	198
		489-493	200
		494-497	202
		498-501	204
		503-506	206
26"	2-X	516	222
		517-520	224
		521-525	226
		526-529	228
		530-533	230
		534-537	232
		538-541	234
		542-545	236
		546-549	238
28"	2-X	586	256
		587-590	258
		591-594	260
		595-598	262
		599-602	264
		603-606	266
		607-610	268
29"	2-X	611-614	270
		615-618	272
		619-622	274
		623-626	276
		627-629	278

Rohloff SPEEDHUB 500/14

Different hub types and their assembly instructions

Small wheels:
Wheels smaller than 26“ must be laced using a single cross lacing pattern in order to guarantee the spokes will have the correct angle of entry to the rim.
Radial lacing the Rohloff SPEEDHUB 500/14 is not permitted!

The *Rohloff SPEEDHUB 500/14* should not be used with rims smaller than 18“ as the angle between rim and the high hub flange would become to acute, causing spokes to kink where they enter the nipples leading to premature spoke failure.

Wheel stability:

The *Rohloff SPEEDHUB 500/14*, when laced into a 32 or 36 spoke rim, will create a stronger wheel than a traditional dished derailleur hub wheel.
The SPEEDHUB 500/14 wheel stability corresponds to that of a Tandem wheel with 48 spokes!

- The **spoke flanges** of the *Rohloff SPEEDHUB 500/14* are **symmetrical**. The rim is therefore centrally placed between the hub flanges, the spokes radiate from both sides of the hub at an equal angle to the rim and the resulting wheel is not dished. All spokes from a *Rohloff SPEEDHUB 500/14* wheel will therefore be of the same length and should have exactly the same **spoke tension (min. 1000-1300N).**

- To build a strong, long lasting wheel, quality spokes should be pre-tensioned with a minimum tension of **1000N (measured with an inflated tire)** or 1300N **(measured without a tire fitted)**. This value cannot always be reached with an un-dished wheel, because the spokes on the sprocket side of the hub have to be tensioned to around 1475N which can cause problems with the nipple seat at the rim. The spoke tension on an 8-speed cassette hub is usually only 600N on the opposing flange side. See the comparison to an MTB 8-speed wheel overleaf.

- Because of the larger diameter hub flange, the spokes have, despite only being double crossed, approximately the same angle to the rim as the spokes of a triple cross laced wheel with a low-flange hub. Due to the fact that the spokes coming from the *Rohloff SPEEDHUB 500/14* radiate from a larger circle, they are not subjected to the same amounts of stress. It therefore follows that the force passed on to the rim is far less, in comparison to that passed on by the spokes of a traditional low-flange hub (Torque = Force x Lever).

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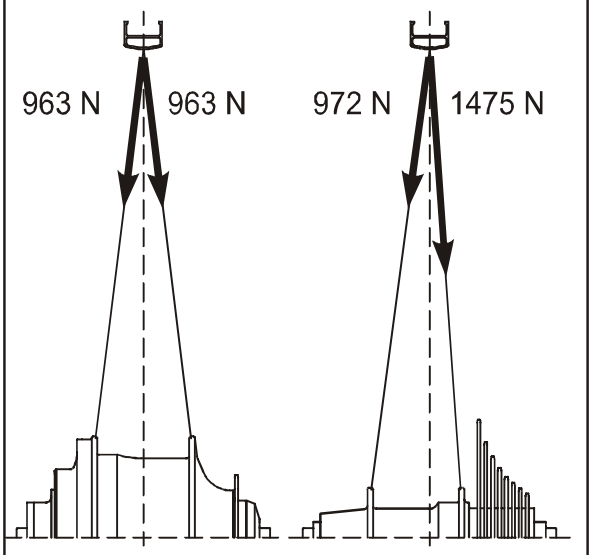
Comparison of spoke tensions measured during our tests:

(Values in brackets show spoke tension with quality spokes and an inflated tire)

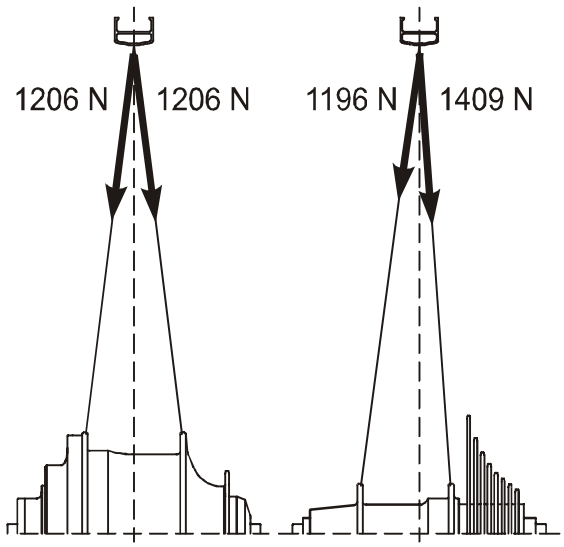
MTB:
Wheel with SPEEDHUB 500/14, 32 spokes
Wheel with 8-speed derailleur gear, 36 spokes
Driver 80kg, pedalling while standing on the pedals.
Transmission SPEEDHUB: 4th gear (48/16)
Spread: 2,52m
Transmission derailleur gear: 36/30
Spread: 2,47m



SPEEDHUB 500/14
32 spokes
135mm gripping width
Flange range
30mm / 30mm

8-speed HR-Nabe
36 spokes
135mm gripping width
Flange range
37,3mm / 20,2mm

Tandem:
Wheel with SPEEDHUB 500/14, 32 spokes
Wheel with 8-speed derailleur gear, 48 spokes
2 riders of 80kg, pedalling while standing on the pedals.
Transmission SPEEDHUB: 4th gear (48/16)
Spread: 2,52m
Transmission derailleur gear: 36/30
Spread: 2,47m



SPEEDHUB 500/14
32 spokes
135mm gripping width
Flange range
30mm / 30mm

8-speed Tandemhub
48 spokes
145mm gripping width
Flange range
31,3mm / 24mm

The values for the Tandem 8-speed hub turn out more favorable despite there being 2 riders, because there are 48 spokes and because more symmetric flange width than the values for the MTB wheel. However, the values of the *Rohloff SPEEDHUB 500/14* wheel are, with 1.206N in comparison to 1.409N, still better.

Rohloff SPEEDHUB 500/14 on Tandems:
All versions of the ***Rohloff SPEEDHUB 500/14*** are certified for tandem use long as the frame spacing remains 135mm. The Article number/description is extended by the appendix **'T'** (Example: CC-**T** or TS-EX-**T**). All SPEEDHUB 500/14 versions are supplied with spoke holes of 2.7mm and are drilled for either 32 or 36 spokes. The tandem versions differ to the regular ***Rohloff SPEEDHUB 500/14*** only through the length of cable supplied in the kit. All tandem versions are supplied with cables of 2.5m in length. As the only difference is the cable length, these hubs are also suitable for recumbents, HPVs and other applications where longer cables are required. A special, reinforced CC OEM Tandem Axleplate (Art. #8234T) is also available on request. This axleplate permits just one mounting position.

Different hub types and their assembly instructions

10. Drive:- General Info

The hub will be delivered from us with a 16-tooth steel sprocket, unless otherwise requested (sizes 13, 15 and 17 teeth are also available). As far as the front chainring is concerned, we recommend chainrings of a size of 40, 42, 44 or 46 teeth, depending on how the bike will be used. We offer a special sprocket with 13 teeth for use with the *Rohloff SPEEDHUB 500/14* on bikes with small rear wheels (for example 20“ recumbent or folding bicycles). By using this sprocket great overall gear ratios can also be achieved even with this size wheel. This sprocket however, requires a modified chain line (57,5mm instead of 54mm) and is not designed as a reversible sprocket.

The *Rohloff SPEEDHUB 500/14* is constructed for use in races, the high loads which arise during races are therefore not sufficient to overload the *Rohloff SPEEDHUB 500/14*. The high gear-ratio (for example 42/16) transforms the low revolutions at the crank to higher revolutions at the rear sprocket and thereby reduces the input torque for the hub. For safety reasons and in order to guarantee that the SPEEDHUB gear-unit cannot be overloaded, there are certain primary transmission ratios which may not be undercut. **The lowest permitted gear ratios (transmission factor 2.1 for solo cyclists under 100kg) are 36/17, 34/16, 32/15 and 28/13** when mounted in a normal bicycle (i.e. not a tandem). The smallest gear of the *Rohloff SPEEDHUB 500/14* corresponds in each case to a 20/34 ratio with derailleur gears. The fastest gear corresponds to the following derailleur gear ratio: The same front chainring combined with an 11-tooth rear sprocket of a derailleur system. There are no upper limits concerning the choice of the chainring size. The lowest permitted sprocket ratios for the Gates Carbon drive system can be found at:- **http://www.g-boxx.com/pdf/Gates-Rohloff-manual-en.pdf**

Comination with electric motors:
The motor needs to be programmed to reduce power when cranks are at the dead point (12:00 and 6:00 o’clock positions) as well as to not exceed the **maximum 100N input torque value at the rear sprocket**. The SPEEDHUB 500/14 is a force dependent transmission so if the additional force of a motor is not reduced at the crank dead-point, then the internal shifting elements will not be able to function correctly. This will result in a harsh shift, far from comfortable for the cyclist. The Rohloff AG will require all the technical data over the transmission in order to permit the SPEEDHUB for use in the Pedalec/electric bicycle.

Use with two chain rings:
It is possible to use two chainrings, a front derailleur and a handlebar shifter in order to extend the gear ratio for extreme use. Please regard that the chainrings must possess a tooth difference of 13% in order to actually create one additional gear, or approximately 29% for two additional gears. When for example, you use a 50-tooth chainring and an additional 39-tooth chainring, the total transmission range would result in 678 %.

Chain line:
The optimum chain line on the *Rohloff SPEEDHUB 500/14* with sprockets of 15, 16 and 17 teeth is 54mm, the 13 tooth sprocket requires a chainline of 57,5mm measured from the middle of the frame. With triple crank-sets, this corresponds to the chain line of the outermost chainring.
With double crank-sets, the outer chainring should be used as the slight inclination is not noticeable when cycling.

Different hub types and their assembly instructions

11. All versions: Accessories for the SPEEDHUB 500/14

Chain tensioner:

An external chain tensioner is necessary for frames where there is no other possibility to tension the chain (i.e. via an adjustable dropout, a dropout with a long slot, or an EBB). A chain tensioner is also required with dropouts where the axle has less than 25mm room for adjustment (fig. 20). This also refers to bikes with rear suspension (except models with transmission swing arms), as the chain length changes as the rear shock is activated. The tension capacity of our chain tensioner is 10 links.

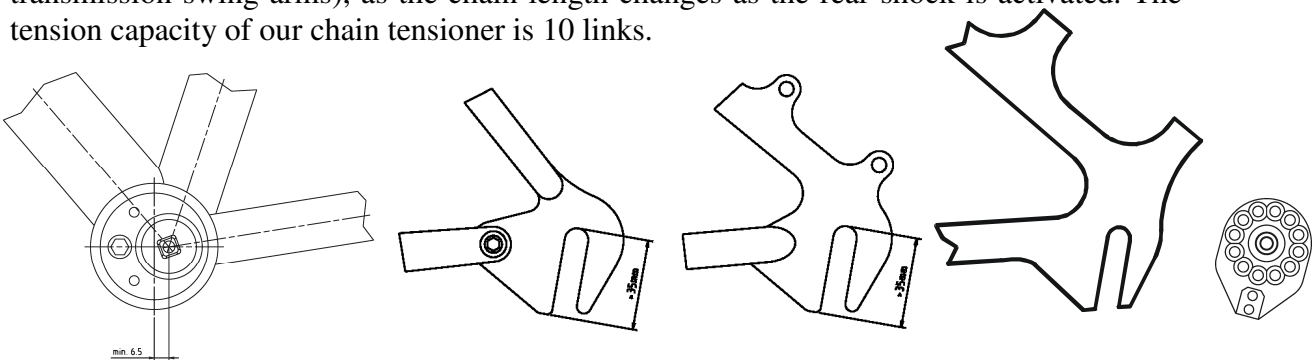


Fig. 18: Adjustment of chain length using an EBB (min. 13mm adjustability) in combination with an OEM dropout.

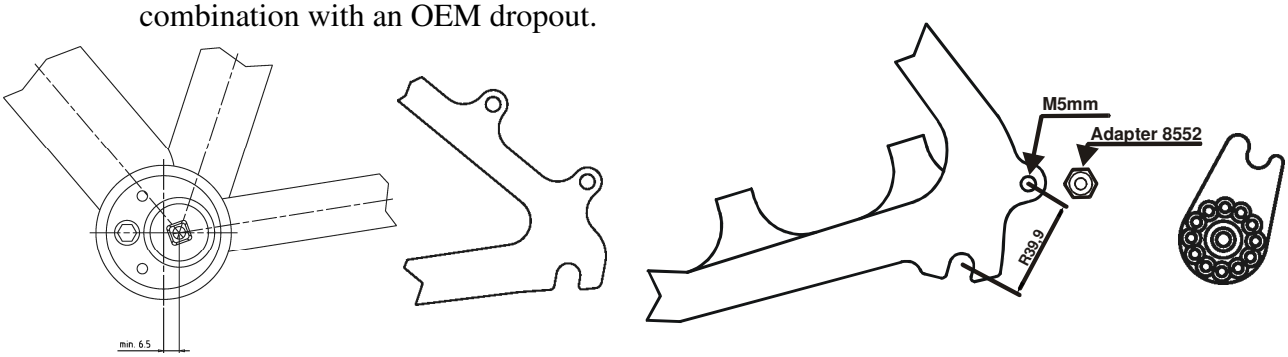


Fig.19: Adjustment of chain length using an EBB (min 13mm) in combination with a standard dropout with disc brake mounts (IS-1999) and an OEM2 axleplate.

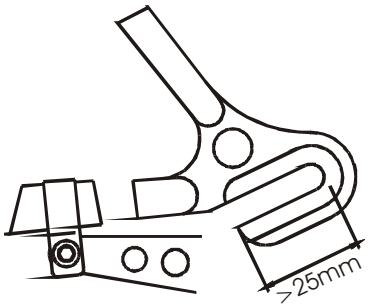


Fig. 20: Dropouts with adjustment room > 25 mm - an external chain tensioner is not necessary.
Dropouts with adjustment room < 25 mm - an external chain tensioner will be required!

Different hub types and their assembly instructions

Use of a Disc Brake (DB):

Disc Brake versions of the *Rohloff SPEEDHUB 500/14* are fitted with a special hub cap and an External Gear Mech. The flange of the hub cap has 4 tapped holes **M8x0.75** onto which the brake disc can be mounted. Only brake discs with a special bolt pattern for the *Rohloff SPEEDHUB 500/14* can be used, (65mm diameter bolt diameter, inner circle diameter 52 mm).
The Rohloff AG is able to offer (at time of press) suitable brake discs for:

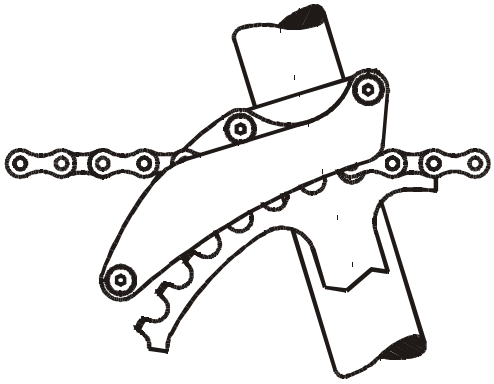
160/2,0mm	**Hope Mono** (Art. #8280)
160/2,0mm	**Magura Storm** (Art. #8288)
180/2,0mm	**Magura Storm** (Art. #8289)
160/1,8mm	**Shimano, Hayes, Formula, Avid** (Art. #8281)
203/1,8mm	**Hayes, Shimano, Avid** (Art. #8286)
180/1,8mm	**Shimano, Formula, Hayes, Avid** (Art. #8287)

The company Magura is also able to deliver the current "Storm" style discs in the sizes 160mm and 180mm.
Magura, Avid, Hope and Formula can deliver manufacturers with disc brake packages direct with the corresponding rear disc.
Enquire with the brake manufacturer directly for info on compatibility of brake models not listed above.

Brake discs with a diameter smaller than 150mm can not be used. We recommend that the suitable brake disc is ordered simultaneously with the SPEEDHUB.

Chain guide:

Rohloff also offers a chain guide that may be mounted additionally. This is necessary on full-suspension bikes and bikes used for hard cross-country riding should also have a chain



guide in order to prevent the chain from jumping off of the chainring. We would actually advise this component is mounted to all bikes that use a spring loaded, self-adjusting chain tensioning system.

Fig. 21: Chain guide *Rohloff SPEEDHUB 500/14*

Different hub types and their assembly instructions

12. **Package contents** of the *Rohloff SPEEDHUB 500/14*

The OEM hub will be supplied packed singularly and comes assembled with the correct axle plate and 16 tooth sprocket (13, 15, 17-tooth sprocket or Gates carrier are available as options).

If ordering a Gates Carbon Drive compatible SPEEDHUB, the sprocket will be replaced with the Gates adapter (Carrier) Art. #8224. The Sprocket will need to be supplied for us to fit unless the special Carbon Drive tools are available to the purchaser.
Gates-ready SPEEDHUBs will only be supplied to manufacturers for fitting into a stiffness test approved frame (siehe Gates Infos). We will require a copy of the test protocol before we are able to supply these products.

OEM supplied SPEEDHUBs are dispatched pre-filled with SPEEDHUB all-season-oil!

Also contained in the package are all components required for the respective hub version:

-twist shifter,
-gear cables in the required length (180 cm and/or 250 cm)
-internal cable routing
-bayonet fixing
-cable guide
-external cable box
etc.

Also included in a clear plastic bag for the consumer are:
- Oil fill tube
- Owners Manual,
- Warranty Card
- Information on the *Rohloff SPEEDHUB 500/14.*

These last 4 items must be passed on to the consumer when the complete bicycle is shipped.

Different hub types and their assembly instructions

13. General information

Maintenance:

In comparison to a derailleur gear system, the *Rohloff SPEEDHUB 500/14* is relatively maintenance-free. The internal gearing runs encapsulated in an oil bath; it is protected by seals against dirt and moisture and is completely maintenance-free. All bearings are either sealed cartridge bearings or run also inside the hub within the oil bath. Therefore, maintenance of the *Rohloff SPEEDHUB 500/14* is reduced to an annual oil change.
The indexed gearing of the *Rohloff SPEEDHUB 500/14* is located directly within the hub. The cable tension has no effect on the gear shift precision.
On the *Rohloff SPEEDHUB 500/14* the chain is running straight and is only driven by one large chainring. Therefore, the wear on the drive chain is fundamentally lower than with a comparable derailleur system.

Brake-in period:

All gears and coupling elements of the *Rohloff SPEEDHUB 500/14* are manufactured from hardened steel and are machined to a high precision. The break-in period is approximately 1.000km due to the high wear resistance of all parts. The gears get finally smoothened out by the moving of the parts under pedaling force. The result of this process is less operational noise and a much smoother operation. The hub shell of the *Rohloff SPEEDHUB 500/14* has specially constructed seals. These also take about 1.000 km to break-in; it is quite normal with a new hub, for the cranks to rotate when the bicycle is pushed, this is because the new hub seals force the sprocket to rotate with the hub. This effect recedes over time and has no influence upon riding comfort.

Operational Noise:

On the *Rohloff SPEEDHUB 500/14* three sets of planetary gears work in line to achieve 14 different speeds. The first two sets of planet gears produce seven gears (8^{th} to 14^{th}). When these seven gears are set against the third set of planet gears, then gears from 1^{st} to 7^{th} are produced. The third set of planetary gears rotate at extreme speeds, the highest RPM being in the 7^{th} gear. The rotation of these planetary gears can be heard as a humming noise which is transmitted via the axle into the frame. Depending on frame type, material and other components fitted around the axle (fenders, luggage racks, kickstand etc) this noise is either more or less audible. The more the hub is ridden, the quieter these noises become. These high RPM planetary gears are not in use and the upper 7 speeds and the result is an almost silently running SPEEDHUB. When coasting along, different freewheels may work depending on the gear selected. This too can result in different noises.

Oil change:

The *Rohloff SPEEDHUB 500/14* is filled with 25ml of special gear oil (all season oil). This ensures:
a) moving parts lubricated.
b) steel parts protected from corrosion.
c) freewheeling and gear noises subdued.

SPEEDHUB 500/14

Gates Carbon Drive:

The following points must be addressed and adhered to when mounting the Rohloff SPEEDHUB 500/14 together with a Gates Carbon Drive system. Failure to adhere to these points will result in partial loss of guarantee and warranty cover of the SPEEDHUB 500/14.

1. Manufacturers conditions/instructions for use

Read the Owners Manual for both Gates Carbon Drive and the Rohloff SPEEDHUB 500/14 and ensure these products are correctly implemented on the bicycle as described within the manuals.

Gates Carbon Drive Owners Manual

Rohloff SPEEDHUB 500/14 Owners Manual

- General Info
- Mounting
- Service and Repairs

2. Frame Approval

Safe operation of a SPEEDHUB using Gates Carbon Drive system is only possible if the frames rear-triangle retains a minimum stiffness level. Frame manufacturers must prove frame stiffness levels on a specialist testing jig in order to receive type approval for SPEEDHUB use. A list of approved frames can be found online under the link below.

Carbon Drive stiffness test approved bicycle frames

Please enquire with the frame manufacturer directly should your chosen bicycle frame not be listed. Universal Transmissions (Gates Carbon Drive EU distribution) are able to issue frame certifications on an individual basis should you still wish to use that particular frame.

Frame testing for Rohloff SPEEDHUB 500/14

3. Use of a Snubber

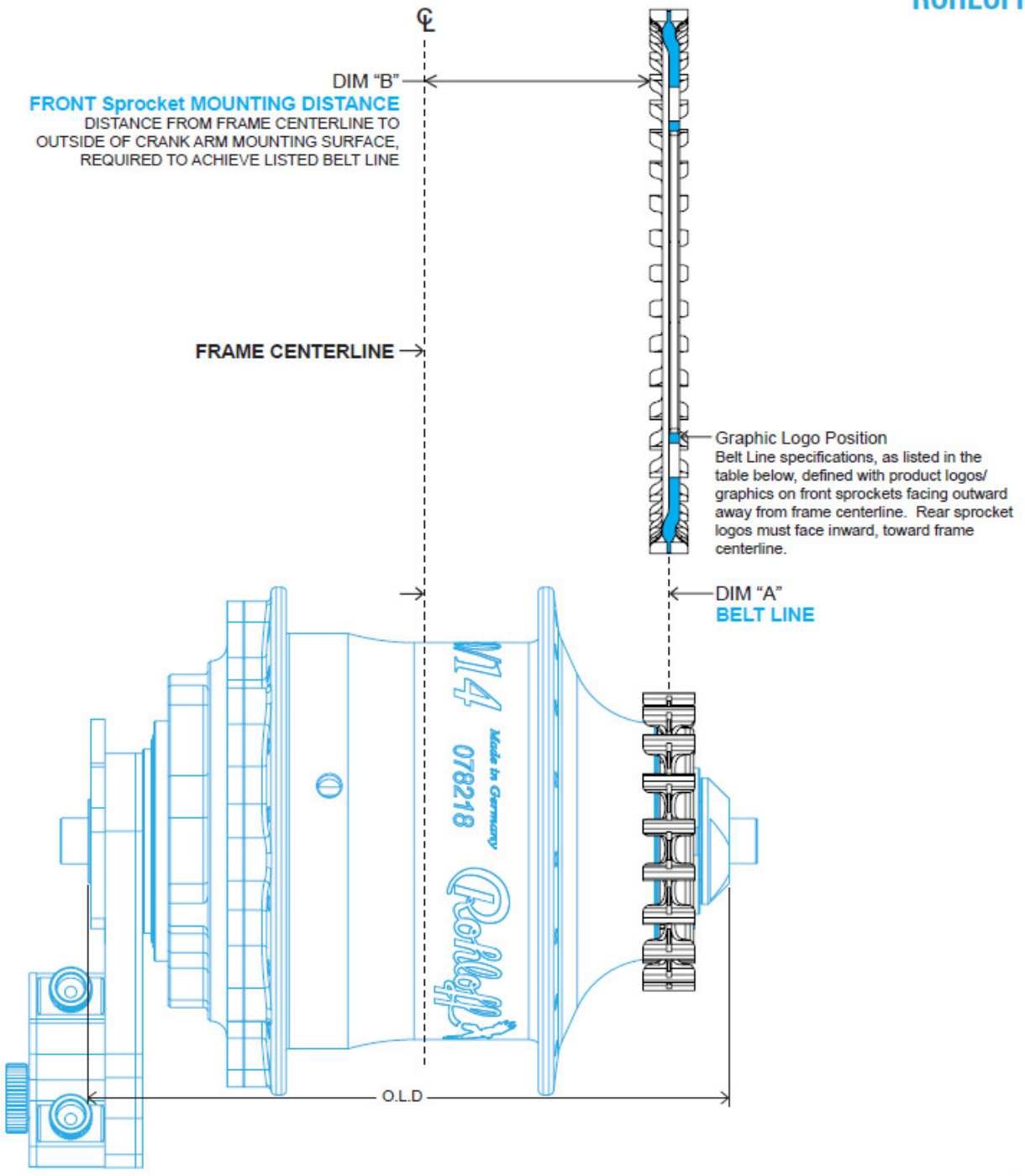
The Rohloff AG insist that a Snubber is additionally mounted to the bicycle. A Snubber prevents the belt from ratcheting over sprocket teeth when belt tension is lost. Subsequently this small component greatly reduces the accident risk level. Please enquire with the frame manufacturer directly should your chosen bicycle not be fitted with a Snubber.

Informationen für Europa:
Universal Transmissions GmbH
Külftalstr. 18
D-31093 Lübbrechtsen
Tel: +49 5185 60266-50
Fax: +49 5185 957192
info@carbondrive.net
www.carbondrive.net

Informationen für Nord- und Südamerika:
Gates Carbon Drive - Colorado
331 Corporate Circle Ste A
Golden, CO 80401
Tel: 720.524.7206
carbondrive@gates.com
www.gatescarbondrive.com

Rohloff SPEEDHUB 500/14

Auszug aus den technischen Unterlagen 2013 der Fa. Gates:



CDX //: INTERNAL GEAR HUB BELT LINE

Manufacturer	Hub Description	Hub Model Number	O.L.D. Outer Locknut Dimension	DIM "A" Belt Line	DIM "B" Sprocket Mount Distance
Rohloff	CVP	500/14	135	54.7	54.7

14. Different hub types and their assembly instructions

The minimal requirements laid down by the Rohloff AG must be met when mounting a *Rohloff SPEEDHUB 500/14* OEM2 version in connection with a support bolt, Speedbone or Monkeybone (mounted to the disc brake mount) or an alternative OEM2 M5 bolt adapter (for luggage rack/fender mount tapped hole). Faultless materials and first grade workmanship must be guaranteed.
Mounting a *Rohloff SPEEDHUB 500/14* with OEM2 axleplate into a tandem is only permitted when using the Speedbone.

Release from liability - ***Speedbone*** or ***Monkeybone*** (OEM2 axle plate)

Manufacturer:

_____

_____

_____

I hereby declare that the OEM2 axle plate with or without either a Speedbone, Monkeybone, or special OEM2 Adapter for M5 anchor bolt, is fitted to the following bicycles:

_____

_____

_____

_____

I herewith release the company 'Rohloff AG' from product liability concerning possible arising damages to the disc brake mount of the frame as well as from resulting damages or injuries to persons or items caused by the use of the OEM2/SPEEDBONE or OEM2/Monkeybone version within this type.

_____

Date, Signature (responsible) Stamp

SPEEDHUB 500/14

18. Info Sheet – Use in combination with electric motor – technical specifications

SPEEDHUB 500/14 & Motor

Rohloff AG
Mönchswiese 11
34233 Fuldatal
Tel. +49 (0)561-510 80 0
Fax +49 (0)561-510 80 15
Email: service@rohloff.de

Company: _____

Name: _____

Tel./Fax: _____

Email: _____

Customer Nr: _____

Date: _____

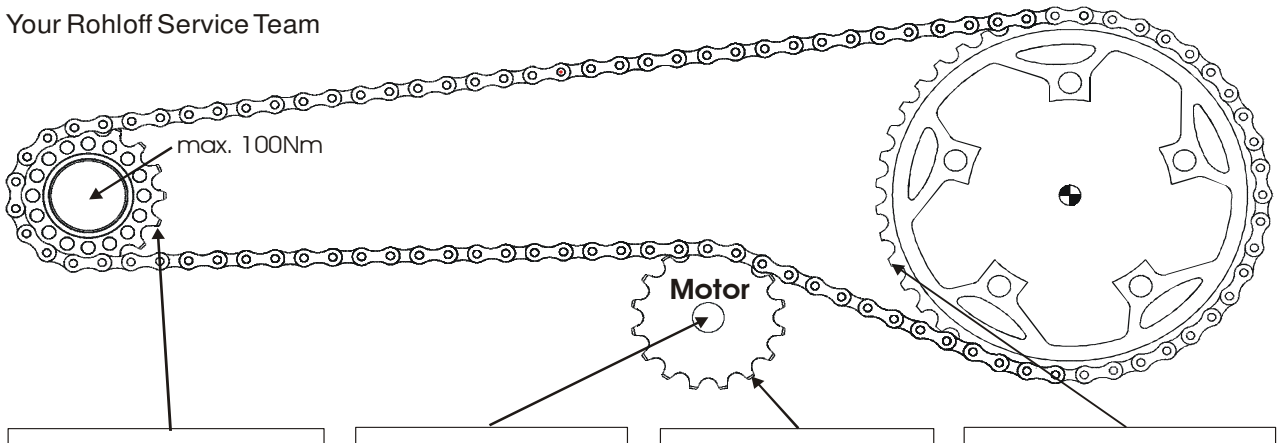
Inquiries with regards to the Rohloff SPEEDHUB 500/14 in conjunction with a motor supported transmission.

When using a SPEEDHUB, the motor regulator must be set up so that when the cranks are vertical, the motor is not providing any assistence or at least, the amount of assistence is drastically reduced in this position. The shifting performance of the SPEEDHUB is extremely froce dependant but shifting in this vertical crank position with normal pedal force never creates problems as the created force in this position is greatly reduced. If a motor is used however to assist the cyclist over this vertical point, then an extremely high force is applied to the primary transmission (chainring, sprocket, chain) and the shifting elements within the SPEEDHUB axle are not able to function correctly. The result is that the SPEEDHUB will be hindered from shifting smoothly and the experience will feel uncomfortable for the cyclist.

In order to receive approval for the use of the Rohloff SPEEDHUB in conjunction with a motor for use in a Pedelec, E-bike etc, we will require the following technical information over the motor which is intended for use.
Please complete the boxes below with the necessary data and then retrun this sheet to us via
Fax: +49 (0)561-510 80 15 or Email: service@rohloff.de

You will then receive a prompt reply from us regarding your design/construction.

Your Rohloff Service Team



Zähnezahl Ritzel/ Zahnriemenscheibe? Number Sprocket/ Pulley teeth?	Drehmoment/Torque?	Zähnezahl Ritzel/ Zahnriemenscheibe? Number Sprocket/ Pulley teeth?	Zähnezahl Kettenblatt/ Zahnriemenscheibe? Number of Chainring/ Pulley teeth?
_____	_____ Nm Drehzahl/RPM? _____ 1/min	_____	_____

Additional Information: .....
.....
.....
.....
.....