A12-mounting check and retrofitting a Rohloff SPEEDHUB A12 hub into 12mm Thru-axle frames

DT / Maxle / Syntace X12 / Shimano e-thru 12

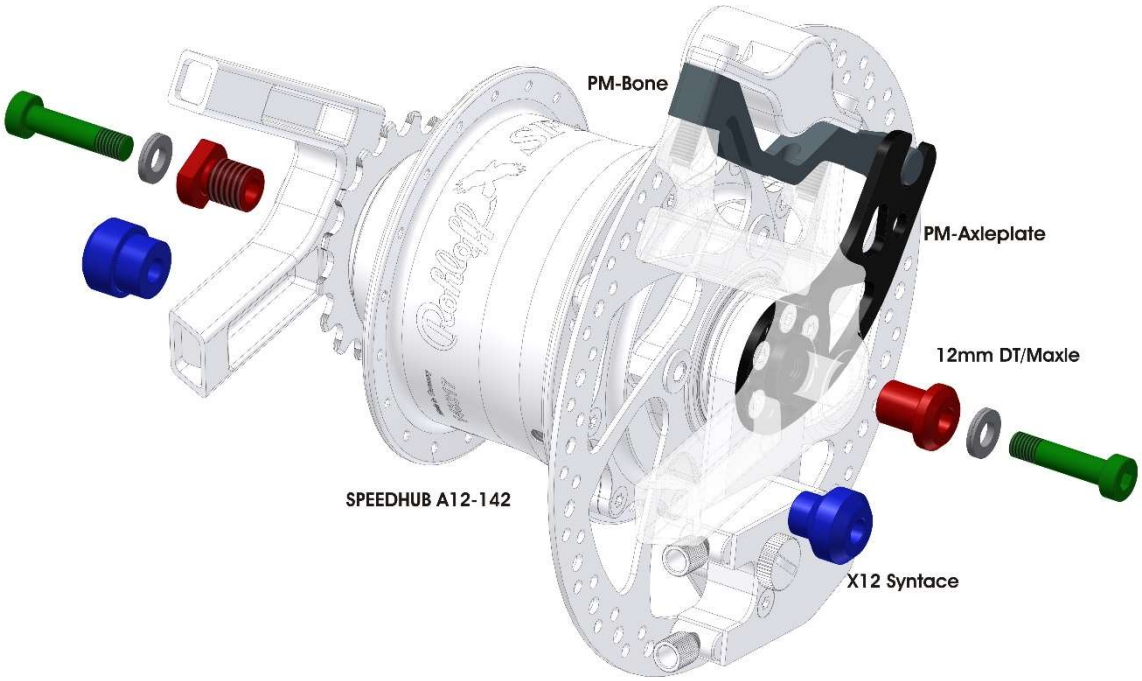


Table of contents

1. Retrofitting a Rohloff SPEEDHUB A12 hub into 12mm Thru-axle frames (DT / Maxle / Syntace X12 / Shimano e-thru 12)

Options:

The A12 SPEEDHUB models are available only as disc brake versions with the following O.L.D.s:

142/148mm

(untested in tandems & thus unauthorized for tandem application use)
32 or 36 spoke,
Silver, red or black anodized finish.
Article code is determined via the torque anchoring system. Either:

- via the International Standard (IS2000) disc brake mount
(A12 DB OEM2) using a **Speedbone** or **Monkeybone 160/180**

- via the Postmount disc brake mount
(A12 DB PM) using a **PM Bone**
The PM Bone simultaneously functions as an adapter from 160-180mm or 180-203mm. The next largest brake rotor must therefore always be used.

177mm

(untested in tandems & thus unauthorized for tandem application use)
32 spoke only,
Black anodized finish only.
Article code is determined via the torque anchoring system. Either:

- via the International Standard (IS2000) disc brake mount
(**A12 DB OEM2 XL**) using a **Speedbone** or **Monkeybone 160/180**

- via the Postmount disc brake mount
(**A12 DB PM XL)** using a **PM Bone**
The PM Bone simultaneously functions as an adapter from 160-180mm or 180-203mm. The next largest brake rotor must therefore always be used.

197mm

(untested in tandems & thus unauthorized for tandem application use)
32 spoke only,
Black anodized finish only **(A12 DB OEM2 XXL)**

Article code is determined via the torque anchoring system. Either:

- via the International Standard (IS2000) disc brake mount
Using a **Monkeybone-10 160/180**

- via the Postmount disc brake mount
Using a **Fatbone 180** (for frames with a 160mm brake rotor) or
Using a **Fatbone 203** (for frames with a 180mm brake rotor)

The Fatbone simultaneously functions as an adapter from 160-180mm or 180-203mm. The next largest brake rotor must therefore always be used.

Process for Ordering

Modern dropouts are constructed with very few standardized dimensions. The result thereof is unfortunately a complex number of steps that must be undertaken in order to safely mount an A12 SPEEDHUB model.

The axle type as well as the dropouts of each individual frame must be painstakingly checked with precision in order to calculate the quantity and type of mounting hardware required to safely integrate an A12 SPEEDHUB model into the frame.

These tests as well as the later mounting of the SPEEDHUB itself must be completed by a qualified bicycle workshop that are able to accept liability for the accuracy of their measurements.

Any mistakes made during the frame/axle testing stage can result in damage to the A12 SPEEDHUB axle or the frame dropouts themselves. In addition, any component failure can, as always, result in possible accidents and injuries to the cyclist.

A12 SPEEDHUB models are not available online separately. Only frame kits and complete bicycles are permitted for online sales where the fitter will already have accepted liability for the correct hardware choice and quality control by test mounting the A12 SPEEDHUB into the frame.

A12 SPEEDHUB - Dropout test kit

We have prepared a dropout test kit to ease the calculation of mounting hardware required. When required, our service partners/distributors will be able to supply this kit in order to check the frame compatibility. The complete kit will need to be returned after completion along with the relevant test protocol.

The retailer may then order the A12 SPEEDHUB version together with the correctly calculated hardware required and will then finally mount this into the frame.

The exact order in which the hardware is used must be noted so that the cyclist can ensure these are refitted identically after the wheel is removed. Failure to use the hardware correctly when refitting the wheel will result in a loss of warranty as well as possible accidents and injuries to the cyclist.

Conversion of an existing CC or TS SPEEDHUB to the new A12 axle will require numerous other internal components to match new tolerances and thus results in almost the same cost as a new hub. This is not financially viable and as such not a service we offer.

2. The 10 step process for bicycle retailers

1. Order the test kit - Article No. 8600

2. Make a note of bicycle brand and model name as well as the production year on the order form (Attention – this information is vital in order to complete a databank that may possibly eliminate the necessity of this test procedure for future sales).

3. Select the required axleplate and adapter/bone.

Check the correctly positioned axleplate lies flush against the inside dropout face without interference from weld beads, stay material or disc brake mount.

Note the required axleplate, adapter and brake rotor (brand and size) on the order form.

Should the axleplate not lie flush against the dropout material, or should the adapters not be compatible with the frame/dropout form, then we regret that we are unable to offer any SPEEDHUB model that is compatible with this frame. Further testing will not be necessary.

4. Read the functional explanation of the A12 SPEEDHUB axle system carefully and attempt to understand all points noted within.

5. Calculate which axle system is currently used by your 12mm thru axle frame. Remove the relevant test components for that system from the test kit and place them to one side ready for steps 6 and 7.

6. Test the left-hand (disc brake side) dropout first. Note the required reduction sleeve and spacers or custom sleeve on the order form. Should a custom reduction sleeve be required, this will be machined and shipped to order which may incur some minor delays.

Test the right-hand (sprocket side) dropout next. Note the required reduction sleeve and spacers or custom sleeve on the order form. Should a custom reduction sleeve be required, this will be machined and shipped to order which may incur some minor delays.

7. Test both dropouts using the measurement gauge and note the results on a copy of the form.

8. Select the correct spoke length using our ERD/Spoke-length list and include this info on the order form.

9. Email or Fax the completed order form plus measurement gauge forms to your local distributor**.**

10. Return the test kit.

3. Checking which axleplates and adapters are required.

For 142/148mm and 177mm frame spacings

Axleplate required for:

Frames with an International Standard (IS2000) disc brake mount
A12 OEM2 (142/148/177mm) Art. No. 8559

Frames with Postmount disc brake mount
A12 PM Art. No. 8558

Adapter required for:

Frames with an International Standard (IS2000) disc brake mount using an IS2000 brake calliper
Speedbone Art. No. 8250

Frames with an International Standard (IS2000) disc brake mount using a Postmount brake calliper

Monkeybone 160 Art. No 8553
for 160mm brake rotors
Monkeybone 180 Art. No. 8554
for 180mm (& larger) brake rotors

Frames with a Postmount disc brake mount using a Postmount brake calliper

PM Bone Art. No. 8555

The PM Bone functions as an adapter from 160 to 180mm rotor or from a 180 to 203mm rotor. The next largest brake rotor will therefore always be required when using this component.

For a 197mm frame spacing

Axleplate required:

A12 OEM2 (197mm) Art. No. 8562

Adapter required for:

Frames with an International Standard (IS2000) disc brake mount using a Postmount caliper

Monkeybone-10 160, Art. No. 8553-10
for 160mm brake rotors

or

Monkeybone-10 180, Art. No. 8554-10
for 180mm brake rotors

Frames with a Postmount disc brake mount using aPostmount brake caliper

FAT Bone 180 Art. No. 8556
The FAT Bone 180 functions as an adapter from a 160 to 180mm rotor. A 180mm brake rotor will therefore always be required when fitted to a frame which usually requires a 160mm calliper.

or

FAT Bone 203 Art. No. 8557
The FAT Bone 203 functions as an adapter from a 180 to 203mm rotor. A 203mm brake rotor will therefore always be required when fitted to a frame which usually requires a 180mm calliper.

Process:

Remove the demo axleplate and adapter required from the test kit. Connect both these components together and lie against the frame in their usual mounted position to check for clearance and to make sure these components fit without any interference.

Should the axleplate not lie flush against the dropout material, or should the adapters not be compatible with the frame/dropout form, then we regret that we are unable to offer any SPEEDHUB model that is compatible with this frame.

Flush mounting of the Axleplate

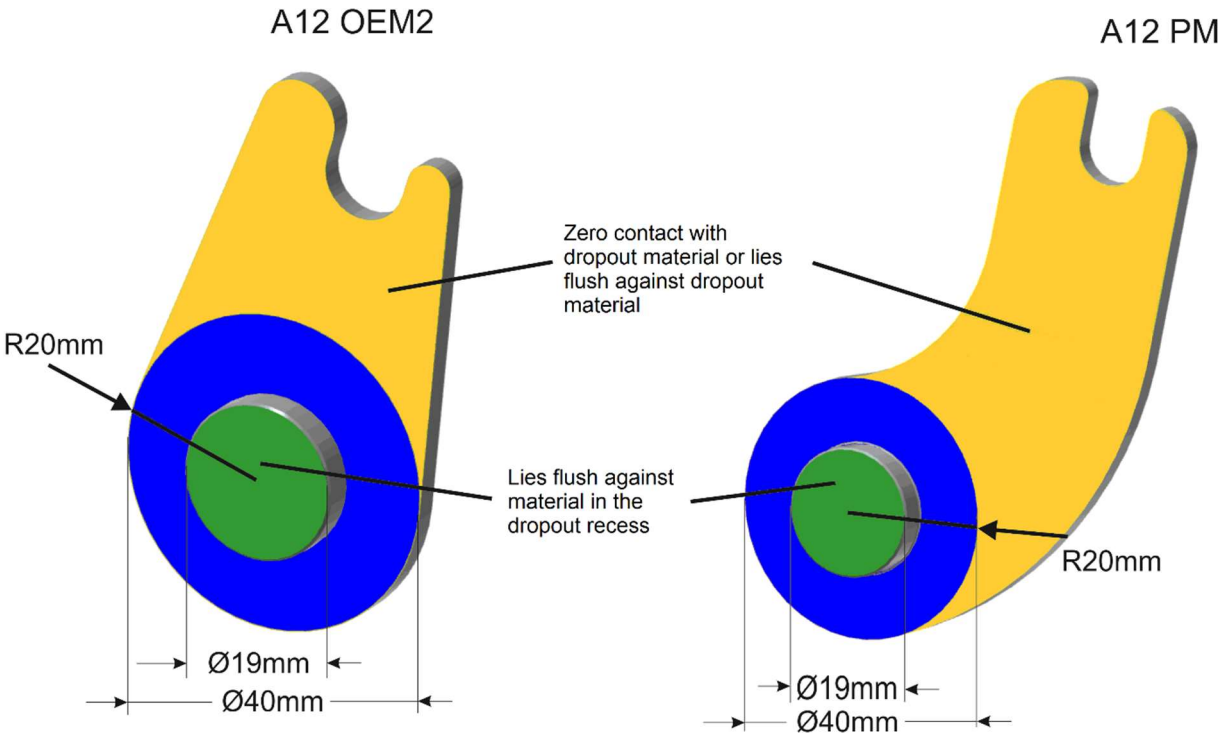
All SPEEDHUB models anchor the output torque of the hub to the left-hand (disc brake) side of the frame through the use of an adjustable and interchangeable axleplate.

Contrary to regular hub axles, which make contact with the dropout with just a 19mm diameter lock-nut, the axle contact area on this side of a SPEEDHUB (the axleplate) measures 40mm diameter (blue). In addition, each axleplate is designed with a 19mm diameter axle stud (green) for ease locating the hub in the dropout and will require enough dropout/frame clearance to accommodate the area transferring the output torque to the adapter/frame (yellow).

It is vital to ensure the axleplate lies completely flush against the inside dropout face. Make sure weld beads and stay material is not located underneath the axleplate. Failure to do so will result in the SPEEDHUB sitting incorrectly in the dropout and thus hindering the brake rotor running parallel through the brake calliper.

The yellow section of the selected axleplate must therefore lay completely parallel to the dropout material whereby it doesn't matter if this yellow area actually touches the dropout material or not.

The yellow section of the axleplate will lie in a different position against the dropout surface, depending upon the desired direction of cable routing selected.



4. Rohloff A12 SPEEDHUB system – frame compatibility test

The Rohloff A12 SPEEDHUB units are designed to fit into 142mm, 148mm, 177mm and 197mm spaced bicycle frames currently running one of the following 12mm thru axles.

1. DT/Maxle
2. Syntace X12 with clamped threaded bush (M12x1) on sprocket side (V1)
3. Syntace X12 with internal threaded M12x1 sprocket side dropout (V2)
4. Shimano 12mm e-thru

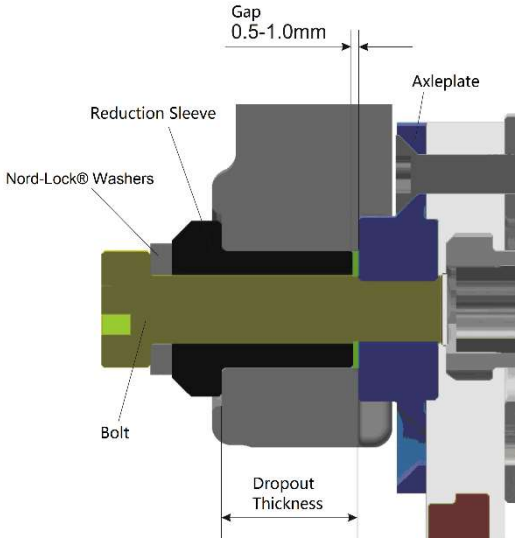
The axle currently used with that particular frame will no longer be required as the Rohloff A12 axle system uses special reduction sleeves to reduce the 12mm diameter axle hole in the dropout to just 7mm.

Specially manufactured M7x1x30 bolts are then inserted through the reduction sleeves and dropouts and finally threaded into the internally tapped SPEEDHUB A12 axle. To ensure these bolts do not loosen while in use, Nord-lock® washers are additionally added behind each bolt head.

ATTENTION:
Only original Rohloff A12 bolts in combination with OEM Nord-lock® washers may be used. Nord-lock® washers have a limited lifespan and must be replaced every 4 times they are used in order to ensure bolts do not loosen when in use.

The measurements of the reduction sleeves, bolts and Nord-lock® washers have been carefully selected to offer the largest range of compatibility with the currently available 142mm, 148mm, 177mm and 197mm thru-axle frames.

Alongside the various different axle styles available, the only other variable that may hinder hub/frame compatibility remains the thickness of the dropout material itself. The thickness of the dropout material is not standardised and as such the bicycle mechanic fitting the A12 SPEEDHUB Model will be required to complete a few test procedures to calculate if the A12 SPEEDHUB will fit and if so, what hardware is required.



An A12 SPEEDHUB model is only compatible with a bicycle frame when a gap of 0.5mm to 1.0mm is available between the reduction sleeve (black) and the SPEEDHUB axleplate (blue).
The use of micro washers can, to a certain degree, be used to ensure compatibility across a wider range of dropout thicknesses. The dropout test will enable the bicycle mechanic to calculate this.

Only via the correct completion of this test will it be possible to ensure the safe integration of a Rohloff SPEEDHUB A12 model in your frame of choice.

The 3 possible issues and their respective consequences are listed below to help illustrate the importance of completing the dropout test carefully.

1. Dropout material thickness is compatible with the reduction sleeves = OK.

2. Dropout material too thin for the reduction sleeves or bolts.

The A12 Rohloff SPEEDHUB versions cannot be secured within the dropouts, the wheel wobbles and leads to accidents and injuries for the cyclist .
The bolt screws too far into the axle, clamping the shifting shaft leading to shifting issues and excessive oil loss because of damage.

3. Dropout material too thick for the reduction sleeves or bolts.

The A12 Rohloff SPEEDHUB versions cannot be secured using enough bolt threads. Bolts will work loose and internal axle threads can be damaged which may lead to accidents and injuries for the cyclist.

An incorrectly completed dropout test and/or mounting of an A12 SPEEDHUB model could result in the wheel being inadequately secured within the frame which in turn may lead to damage to the SPEEDHUB itself and/or injuries to the cyclist.

It is imperative therefore that the dropout test and final mounting of the SPEEDHUB be completed with the utmost accuracy.

Powder coating on bicycle frames

Many bicycle frames nowadays are powder coated on both sides of the dropouts. The dropout test can still be completed on frames with thick powder coating.

It is important to check the condition of the powder coating on the dropouts however when using an A12 SPEEDHUB model. Multiple removal and mounting of the SPEEDHUB may cause the thick powder coating to flake. If this occurs, micro shim must be added to compromise for the reduced dropout thickness.

Following an inspection:- the thick powder coating has fully flaked away from the clamp area either on the inner or outer dropout face:

Add 1x micro shim to the outside of the dropout must be located between the reduction sleeve and dropout or reduction sleeve and spacer (if applicable).

Following an inspection:- the thick powder coating has fully flaked away from the clamp area on both the inner and outer dropout face:

Add 2x micro shims to the outside of the dropout must be located between the reduction sleeve and dropout or reduction sleeve and spacer (if applicable).

1. Dropout material thickness OK

The dropout material thickness measures between 0.5mm and 1.0mm more than the length of the standard A12 reduction sleeve.

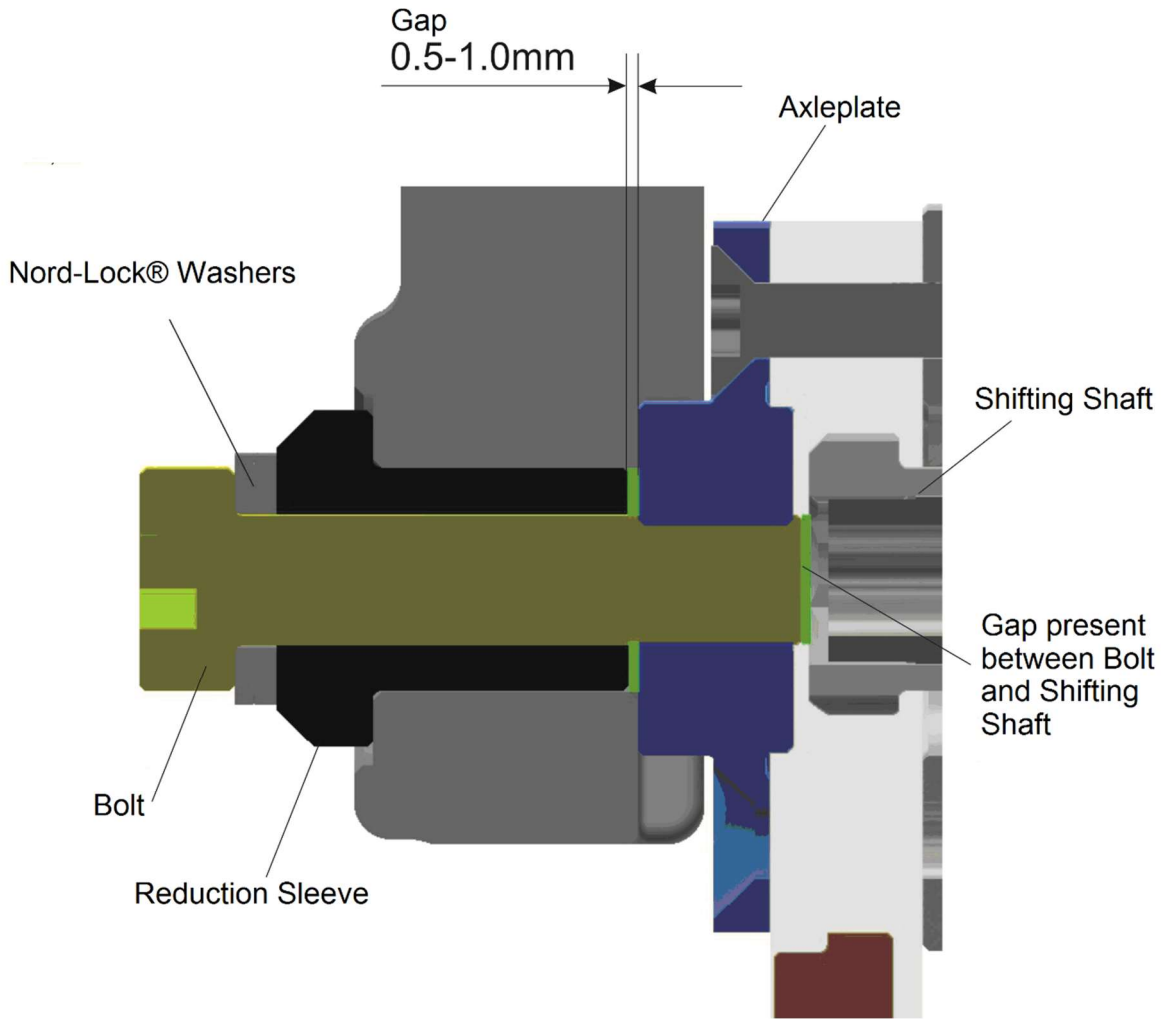
This 0.5mm-1-0mm gap (green) is located between the reduction sleeve (black) and the axleplate (blue).

The bolt (yellow) clamps the reduction sleeve (black) and the axleplate (blue) against the dropout to ensure the SPEEDHUB is safely and securely fastened in position.

The optimum bolt (yellow) insertion depth into the axleplate (blue) is thus achieved.

This optimum depth achieves the maximum thread contact area whilst ensuring adequate clearance (green) between bolt (yellow) and A12 SPEEDHUB shifting shaft (gray).

Only now is it possible to mount the A12 SPEEDHUB model safe and securely within the dropouts of the selected bicycle frame.



2. Dropout material thickness is too thin

The dropout material is thinner than the reduction sleeves.

A gap has formed between the reduction sleeve (black) and the dropout which cannot be closed.

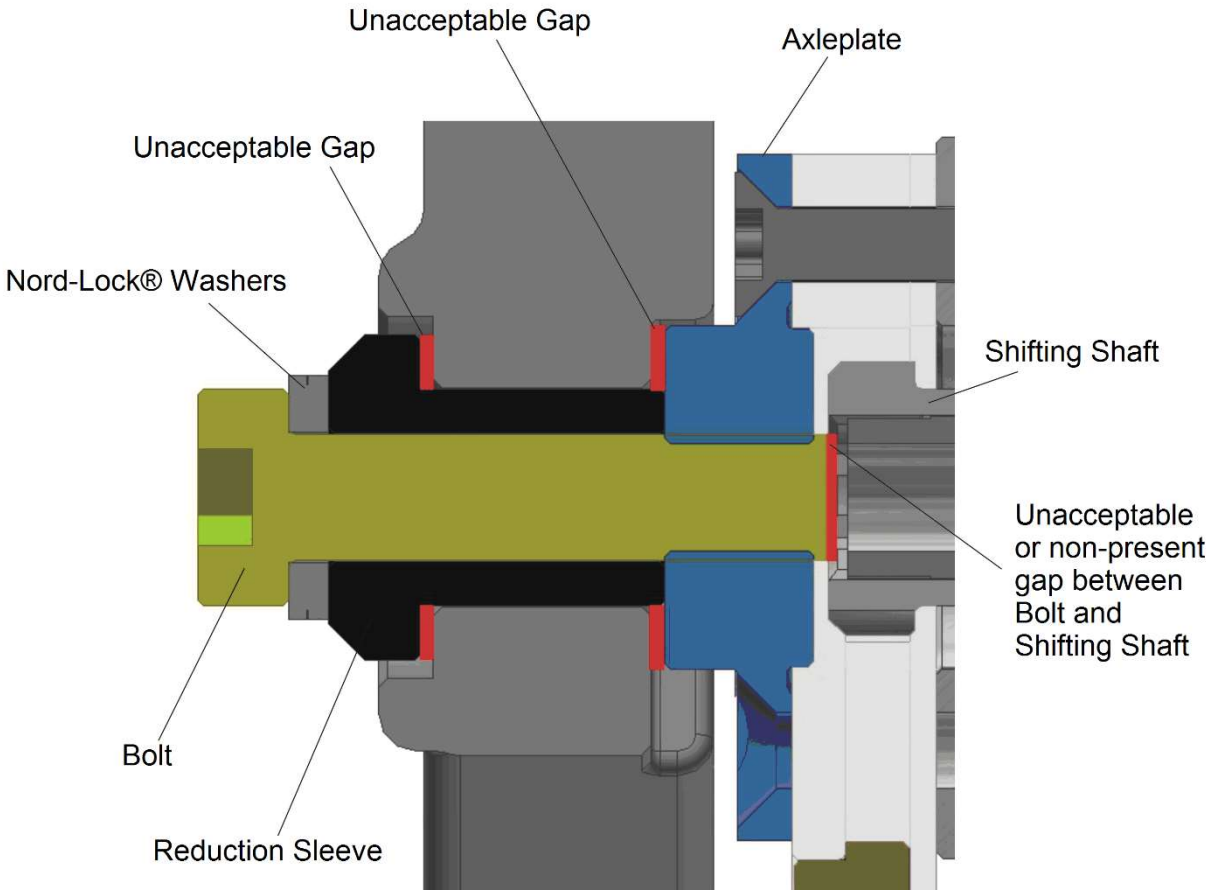
The required gap (red) located between the reduction sleeve (black) and the A12 SPEEEDHUB axleplate (blue) is exceeded.

The required gap (red) located between the bolt (yellow) and the A12 SPEEDHUB shifting shaft (gray) is not present.

This results in the bolt (yellow) only being able to clamp the reduction sleeve (black) against the axleplate (blue). The reduction sleeve (black) and Axleplate (blue) are not clamped against the dropout. **The ability remains for the entire unit to move laterally within the dropout.**
The rear wheel is not secured safely in position!

In addition the bolt (yellow) enters the axleplate (blue) too far. The missing gap between bolt (yellow) and A12 SPEEDHUB shifting shaft (gray) is depleted (red). **This results in a shifting malfunction (possible complete blockage) within the A12 SPEEDHUB model.**

Use of a longer, non OEM bolt will also result in the same issue as written above. **It is therefore imperative that only the original, OEM Rohloff supplied bolts are used along with the Nord-Lock® washers supplied.**



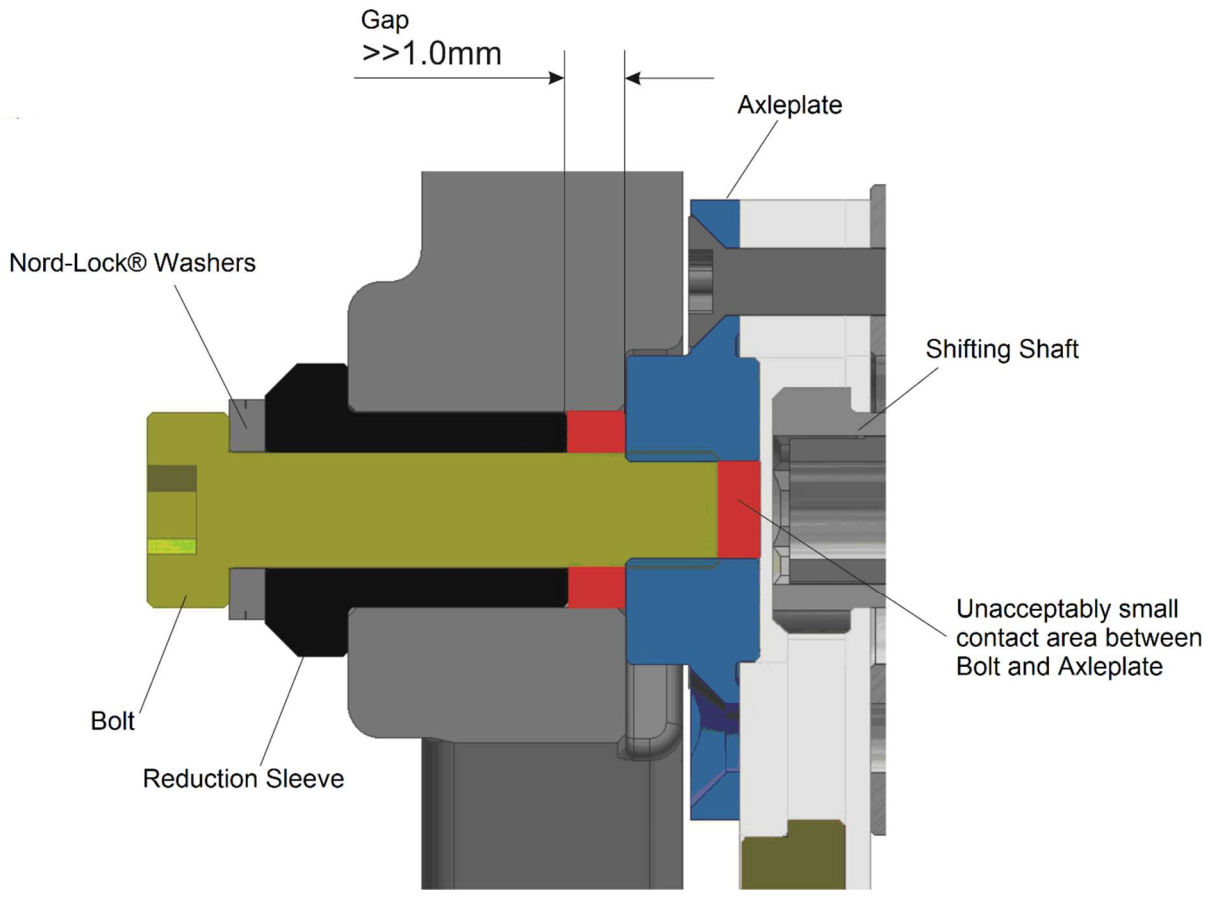
3. Dropout material is too thick.

The dropout material is more than 1mm thicker than the length of the reduction sleeves.

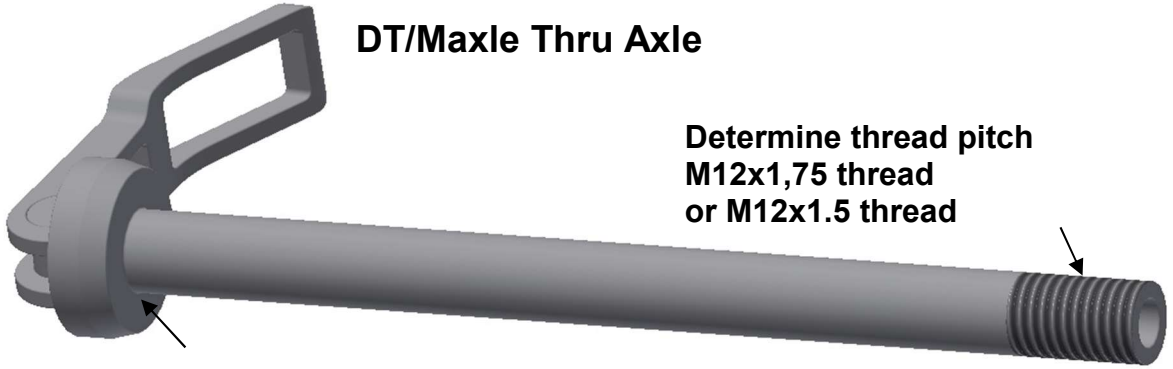
A gap (red) of more than 1.0mm is created between the reduction sleeve (black) and the axleplate (blue). **The reduction sleeve is unable to support the bolt (yellow) adequately. The bolt may break.**

In addition, the contact area between bolt (yellow) and axleplate (blue) is greatly reduced. The forces applied to the bolt in use could, even with the correct tightening torque, cause the thread of the bolt (yellow) or axleplate (blue) to fail. **The safe and secure mounting of an A12 SPEEDHUB model is not possible. Bolt or axleplate thread failure can easily lead to accidents resulting in injuries to the cyclist and damage to the SPEEDHUB.**

Use of a shorter, non OEM bolt will also result in the same issue as written above. **It is therefore imperative that only the original, OEM Rohloff supplied bolts are used along with the Nord-Lock® washers supplied.**

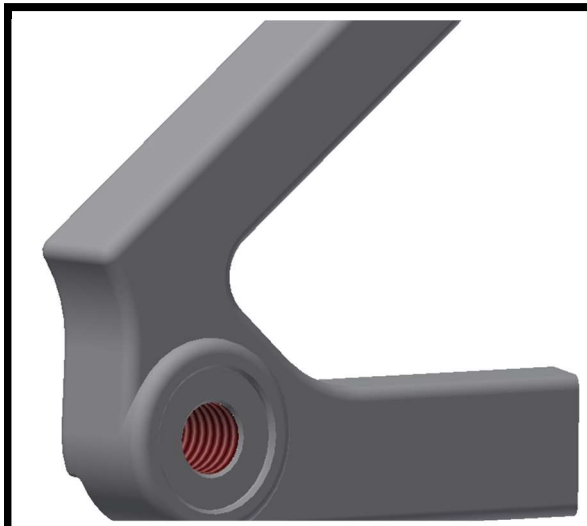


5. Determining the Thru Axle, Selecting the test components



Disc Brake side (left-hand)

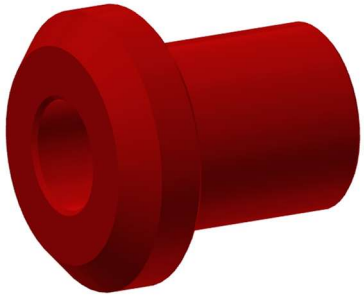
- 12mm diameter hole
- Flat surface area



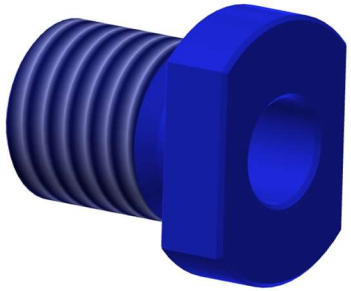
Sprocket side (right-hand)

- M12x1.75 thread or
  M12x1.5 thread
  Tapped directly into dropout

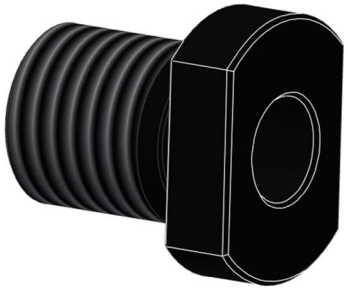
Test components - DT Maxle



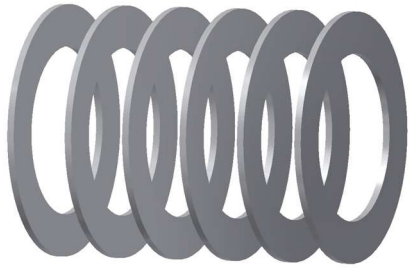
Disc brake side (left):
A12 reduction sleeve (red)



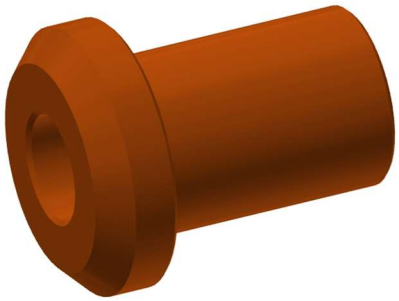
Sprocket side (right):
M12x1.75 A12 threaded reduction sleeve (blue)



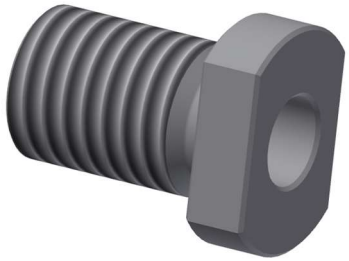
Sprocket side (right):
M12x1.5 A12 threaded reduction sleeve (black)



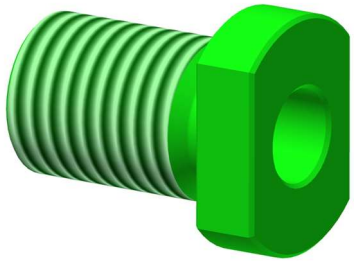
6 Micro-shims 12x18x0.5



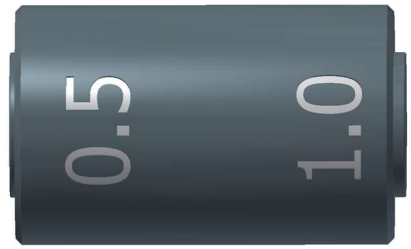
Disc brake side (left):
Extended A12
reduction sleeve (orange)



Sprocket side (right):
Extended M12x1.75 A12 threaded reduction sleeve (gray)



Sprocket side (right):
Extended M12x1.5 A12 threaded reduction sleeve (light green)

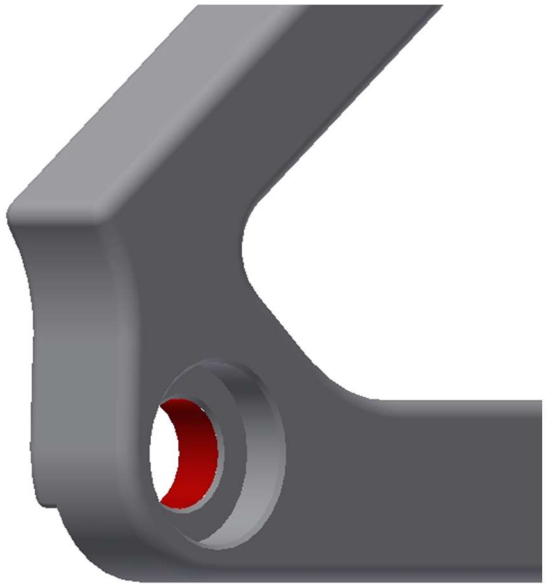


A12 Dropout gauge 0.5/1.0

Shimano e-thru 12

Disc Brake side (left-hand)

- **12mm diameter hole**
- **Flat surface area**

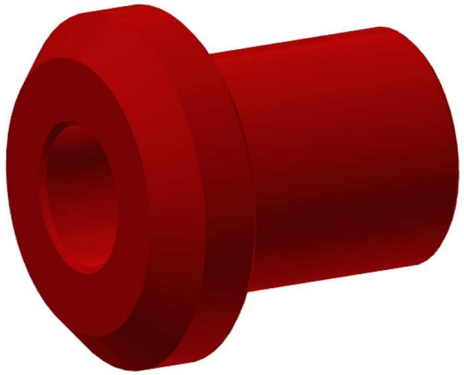


Sprocket side (right-hand)

- **12mm diameter hole**
- **Flat surface area**

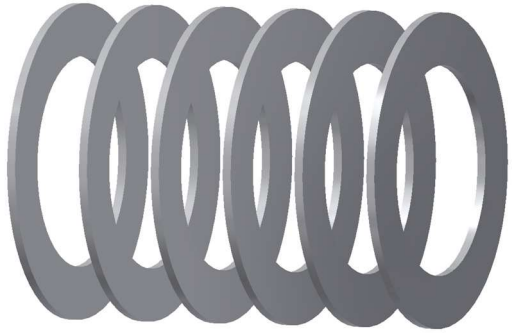
Test components - Shimano e-thru 12

Disc brake side (left-hand):
A12 spacer (turquoise)
-

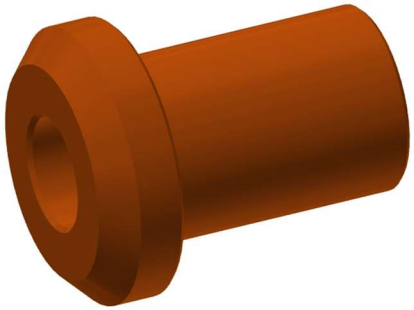


Disc brake side /Sprocket side left-hand and right-hand:
Rohloff A12 reduction sleeve (red)

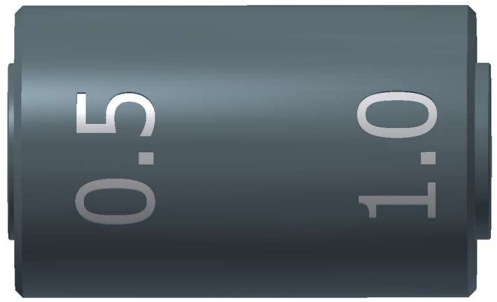
Sprocket Side (right-hand):
A12 spacer (brown)



6 Micro-shims 12x18x0.5

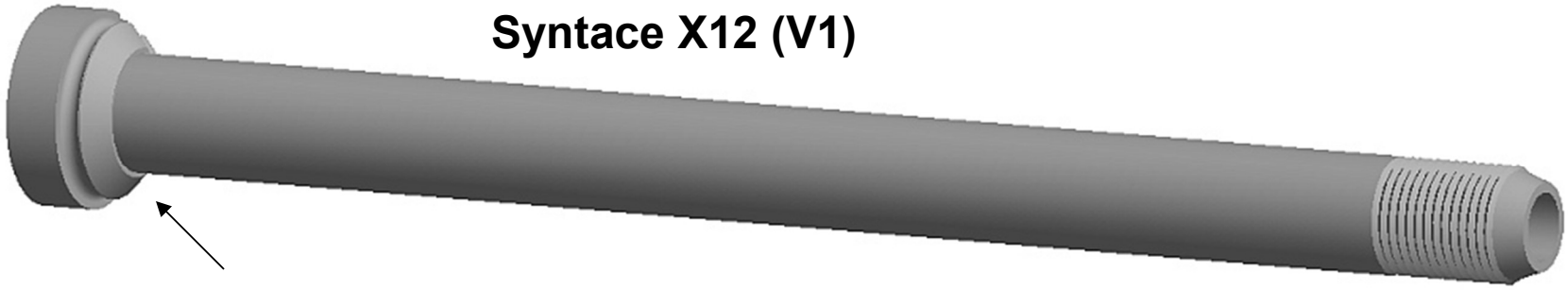


Disc brake side /Sprocket side left- and right-hand:
Extended A12 reduction sleeve (orange)



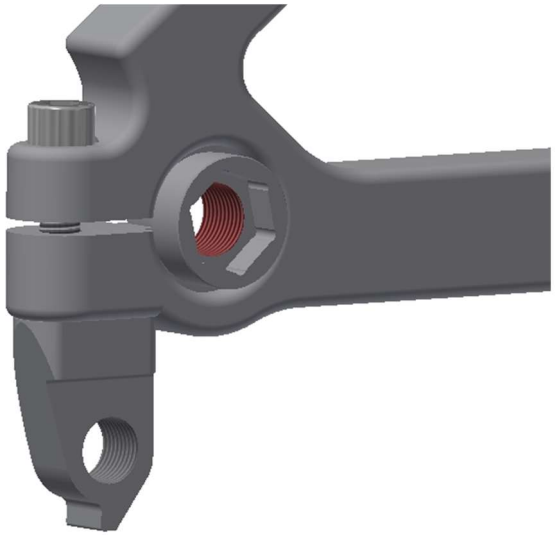
A12 Dropout gauge 0.5/1.0

Syntace X12 (V1)



Disc Brake side (left-hand)

- **Conical surface area**

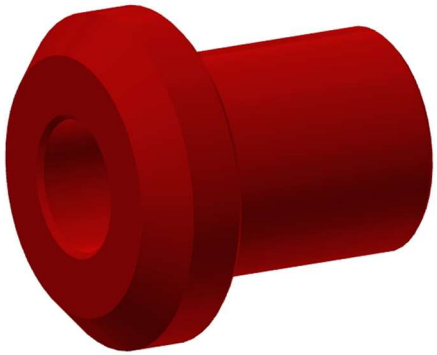


Sprocket side (right-hand)
Version 1

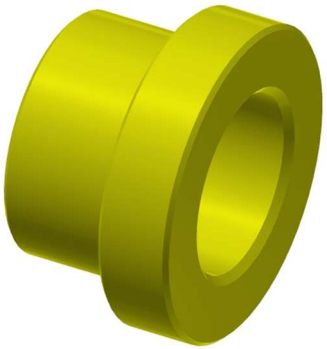
- **Clamped M12x1 bush (no longer required)**
- **Bush replaced with A12 reduction sleeve (yellow)**

Test components - Syntace X12 (V1)

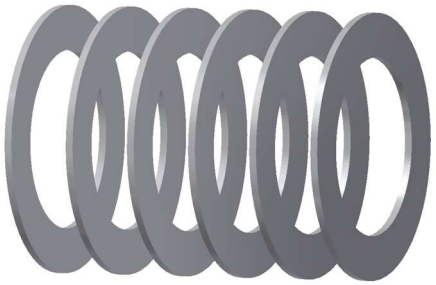
Disc brake side (left-hand):
A12 conical spacer (dark green)



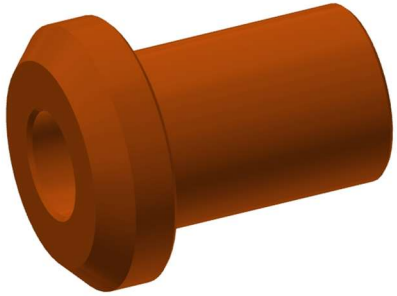
Disc brake side (left-hand):
A12 reduction sleeve (red)



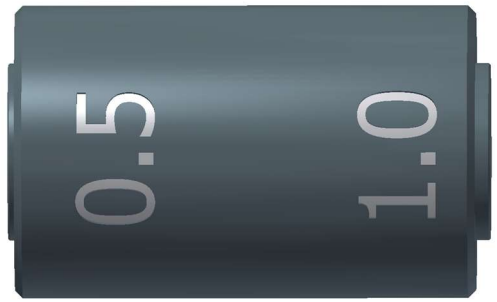
Sprocket Side (right-hand):
A12 reduction sleeve (yellow)



6 Micro-shims 12x18x0.5

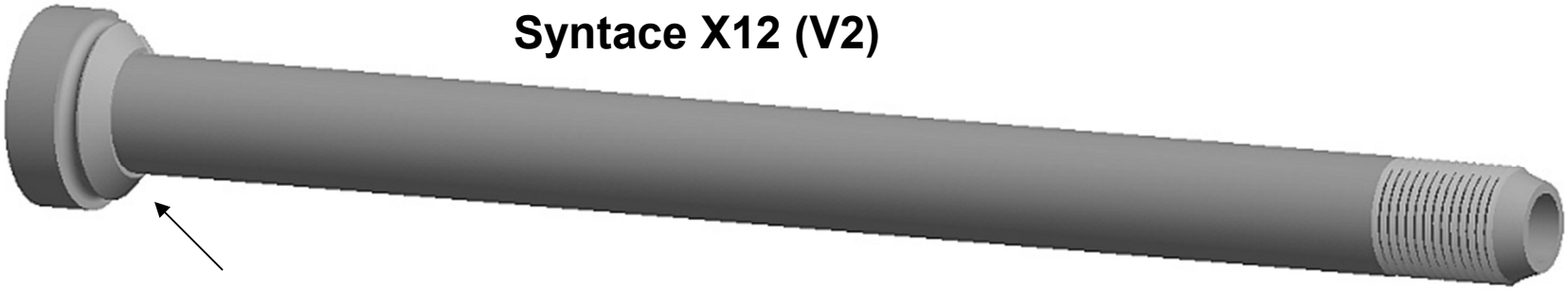


Disc brake side /Sprocket side - left- and right-hand:
Extended A12 reduction sleeve (orange)



A12 Dropout gauge 0.5/1.0

Syntace X12 (V2)



Disc Brake side (left-hand)

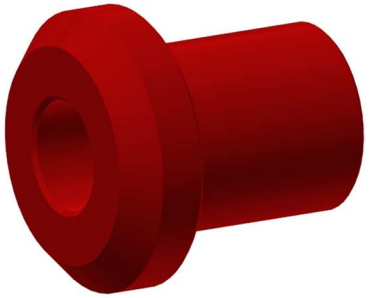
- **Conical surface area**

Sprocket side (right-hand)
Version 2

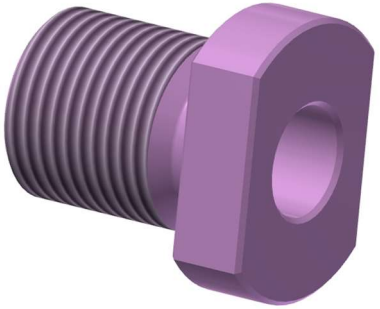
- **M12x1 thread tapped directly into dropout**

Test components - Syntace X12 (V2)

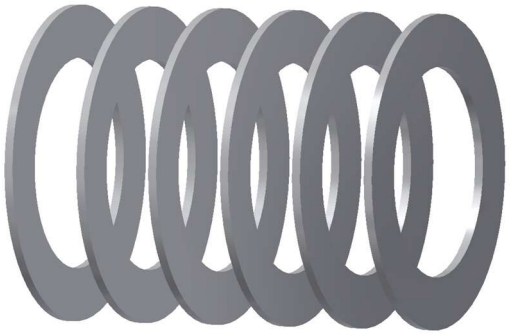
Disc brake side (left-hand):
A12 conical spacer (dark green)



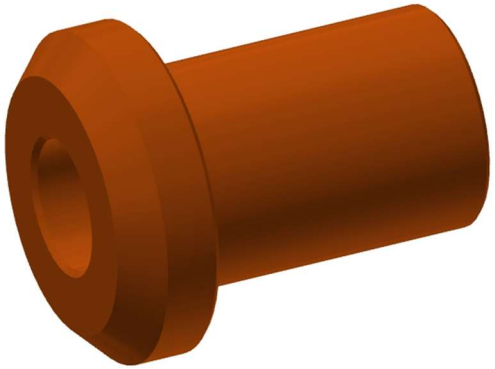
Disc brake side (left-hand):
A12 reduction sleeve (red)



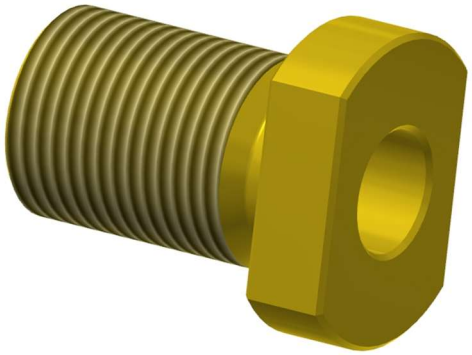
Sprocket side (right-hand):
M12x1 A12 threaded reduction sleeve (pink)



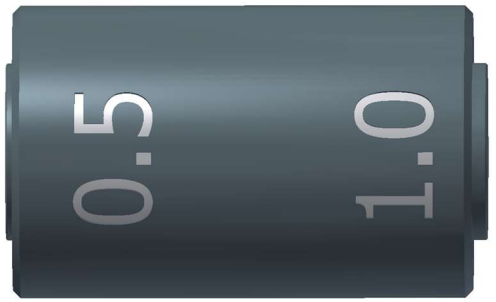
6 Micro-shims 12x18x0.5



Disc brake side /Sprocket side - left- and right-hand:
Extended A12 reduction sleeve (orange)



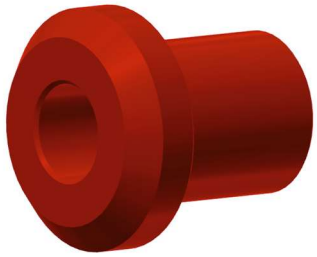
Sprocket side (right-hand):
Extended A12 M12x1 threaded reduction sleeve (gold)



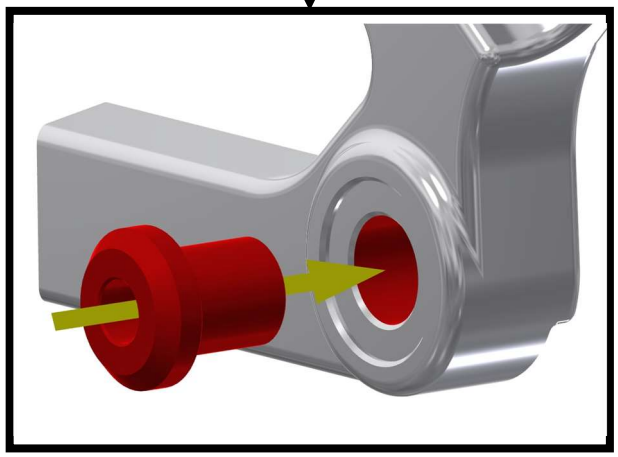
A12 Dropout gauge 0.5/1.0

6. Fitment Test - DT/Maxle Thru-axle systems

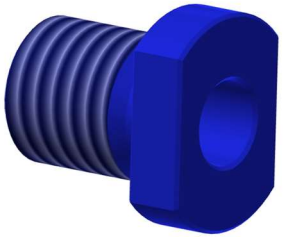
Disc brake side
Left-hand dropout



A12 Reduction sleeve (red)

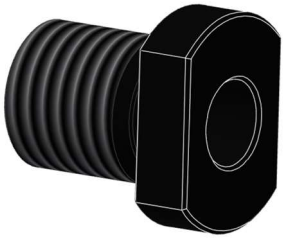


Sprocket side
Right-hand dropout

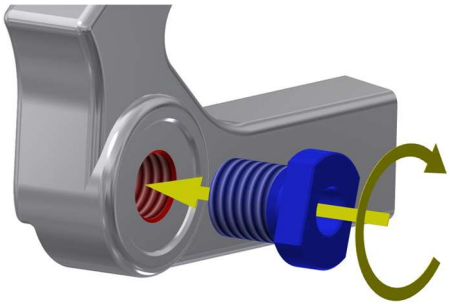


A12 M12x1.75 threaded reduction sleeve (blue)

or



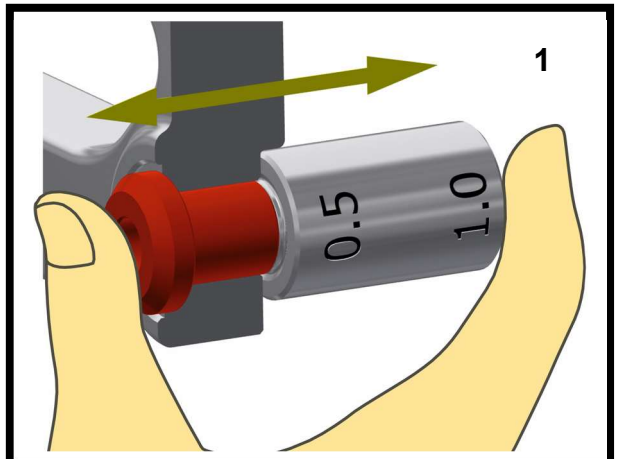
A12 M12x1.5 threaded reduction sleeve (black)



Fit A12 M12x1.75 (blue) or A12 M12x1.5 (black) threaded reduction sleeve accordingly.

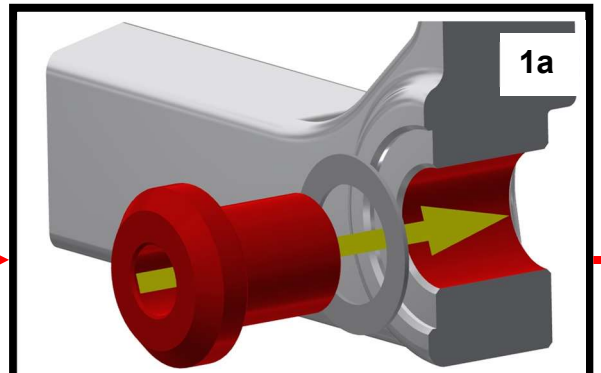
Disc brake side (left-hand): Dropout thickness - Min. play test - 0.5mm

A12 Dropout gauge.
0.5mm side in use

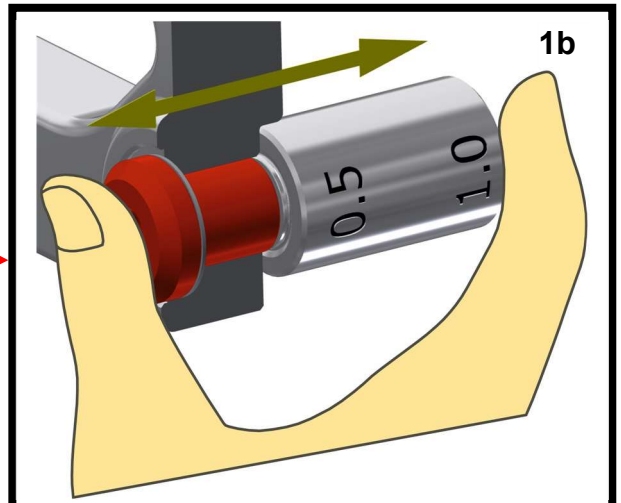


Zero lateral play

Lateral play. Dropout too thin



Fit a 0.5mm micro shim between dropout and reduction sleeve.



Lateral play

Zero lateral play

0.5mm test result = OK.

Proceed to max. play test – 1.0mm

0.5mm test result = OK.

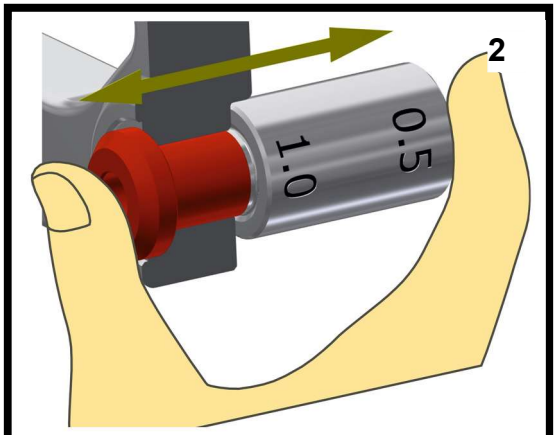
Testing of the left-hand dropout is complete. Max. play test 1.0 not necessary.

Note number of required micro shims in the order form.

Proceed to min. play test 0.5mm for sprocket side (right-hand) dropout.

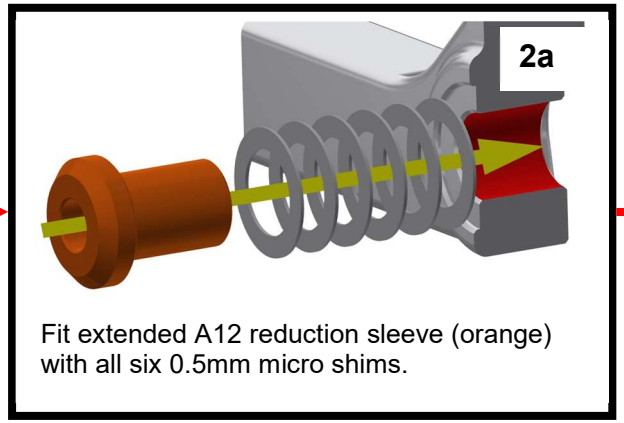
Disc brake side (left-hand): Dropout thickness - Max. play test - 1.0mm

A12 Dropout gauge.
1.0mm side in use

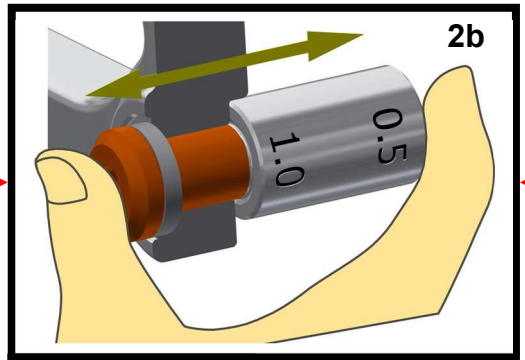


Lateral play

Zero lateral play. Dropout too thick



Fit extended A12 reduction sleeve (orange) with all six 0.5mm micro shims.



Lateral play

Zero lateral play

Remove one micro shim and repeat the process.

Test result = OK.

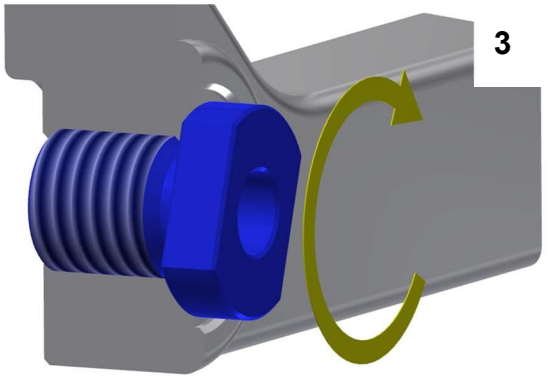
Testing of the left-hand dropout is complete.
Proceed to min. play test 0.5mm for sprocket side (right-hand) dropout.

Test result = OK.
Custom reduction sleeve required.

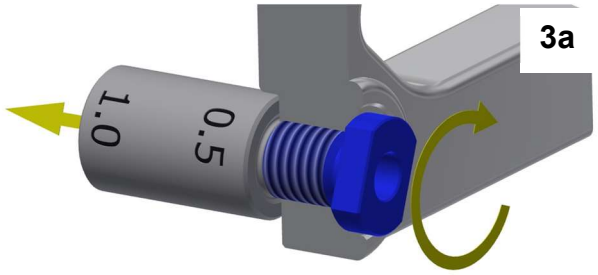
Note number of remaining micro shims on the order form.

Proceed to max. play test 1.0mm for sprocket side (right-hand) dropout.

Sprocket side (right-hand): Dropout thickness - Min. play test – 0.5mm



Screw the A12 M12x1.75 (blue) or A12 M12x1.5 (black) threaded reduction sleeve fully into the dropout and then back-off one full rotation.



Slowly screw the A12 M12x1.75 (blue) or A12 M12x1.5 (black) threaded reduction sleeve into the dropout

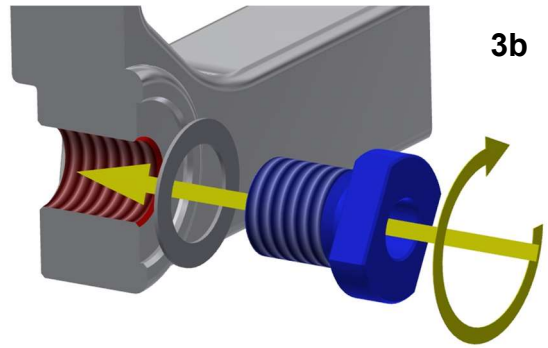
Movement of A12 dropout gauge in arrowed direction noticeable. Dropout too thin

Zero movement of A12 dropout gauge in arrowed direction noticeable.

A12 Dropout gauge.
0.5mm side in use

0.5mm test result = OK.

Proceed to max. play test – 1.0mm



Fit a 0.5mm micro shim between dropout and the A12 M12x1.75 (blue) or A12 M12x1.5 (black) threaded reduction sleeve Screw the threaded reduction sleeve fully into the dropout and then back-off one full rotation.

Slowly screw the A12 M12x1.75 (blue) or A12 M12x1.5 (black) threaded reduction sleeve into the dropout

Movement of A12 dropout gauge in arrowed direction noticeable.

Movement of A12 dropout gauge in arrowed direction for the first time not noticeable.

0.5mm test result = OK.

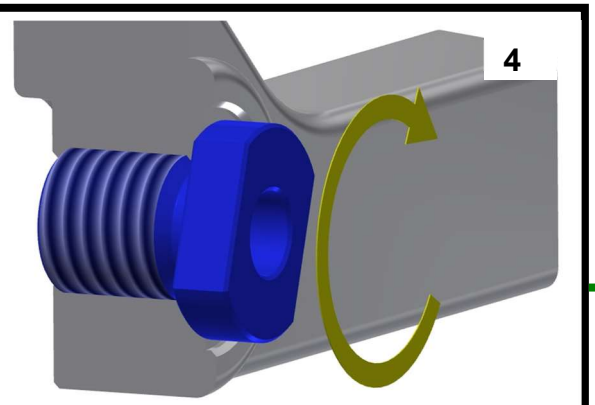
Testing of the right-hand dropout is complete.

Max. play test 1.0 not necessary.

Note number of required micro shims in the order form.

Sprocket side (right-hand): Dropout thickness - Max. play test - 1.0mm

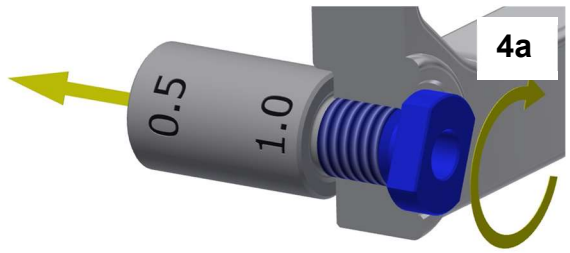
A12 Dropout gauge.
1.0mm side in use



Screw the A12 M12x1.75 (blue) or A12 M12x1.5 (black) threaded reduction sleeve fully into the dropout and then back-off one full rotation.

Test result = OK.

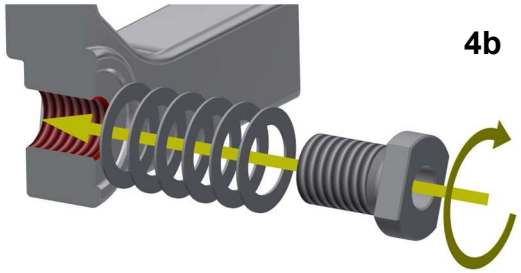
Testing of the right-hand dropout is complete.



Slowly thread the A12 M12x1.75 (blue) or A12 M12x1.5 (black) threaded reduction sleeve into the dropout.

Movement of A12 dropout gauge in arrowed direction noticeable.

Zero movement of A12 dropout gauge in arrowed direction noticeable. Dropout too thick



Screw the extended A12 M12x1.75 (gray) or A12 M12x1.5 (light green) threaded reduction sleeve with all six 0.5mm micro shims, fully into the dropout and then back-off one full rotation.

Slowly screw the extended A12 M12x1.75 (gray) or extended A12 M12x1.5 (light green) threaded reduction sleeve into the dropout.

Movement of A12 dropout gauge in arrowed direction noticeable for the first time.

Zero movement of A12 dropout gauge in arrowed direction noticeable.

Remove one micro shim and repeat the process.

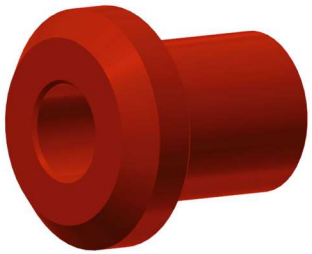
Test result = OK.
Custom reduction sleeve required.

Note number of remaining micro shims on the order form.

Testing of the right-hand dropout is complete.

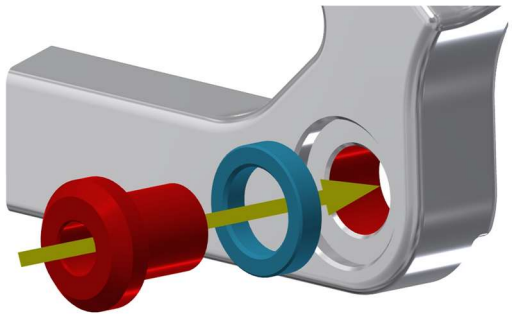
7. Fitment test - Shimano e-thru 12 Thru-axle system

Disc brake side
Left-hand dropout



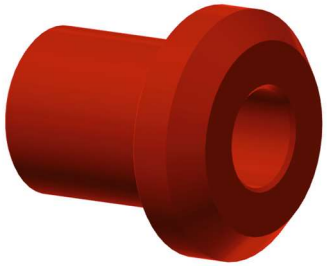
A12 reduction sleeve (red)

A12 left-hand spacer (turquoise)

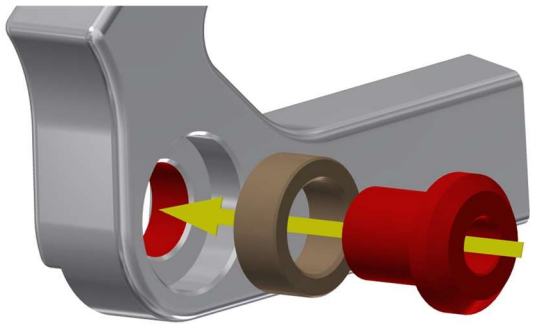


Sprocket side
Right-hand dropout

A12 reduction sleeve (red)

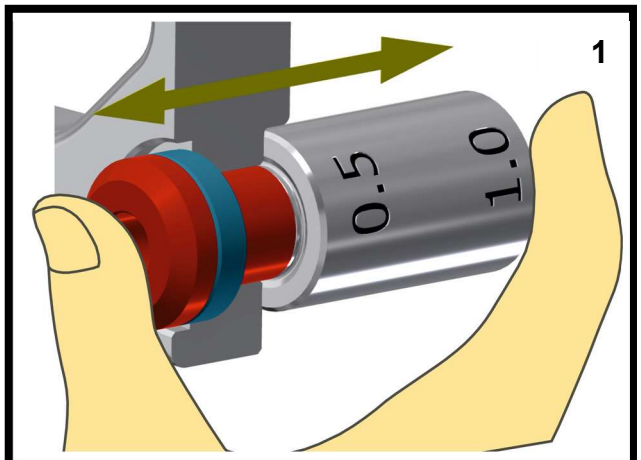


A12 right-hand spacer (brown)



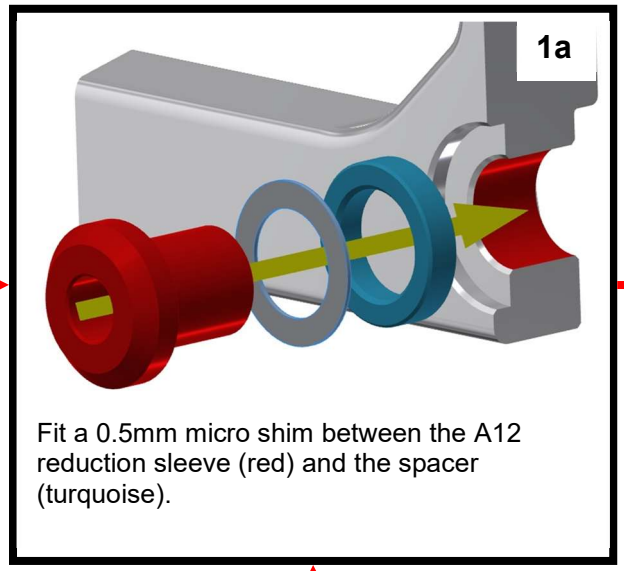
Disc brake side (left-hand): Dropout thickness - Min. play test - 0.5mm

A12 Dropout gauge.
0.5mm side in use

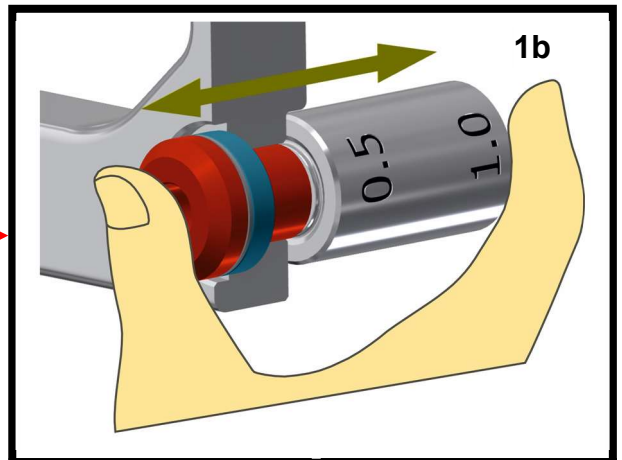


Zero lateral play

Lateral play. Dropout too thin



Fit a 0.5mm micro shim between the A12 reduction sleeve (red) and the spacer (turquoise).



Lateral play

Zero lateral play

0.5mm test result = OK.

Proceed to max. play test – 1.0mm

0.5mm test result = OK.

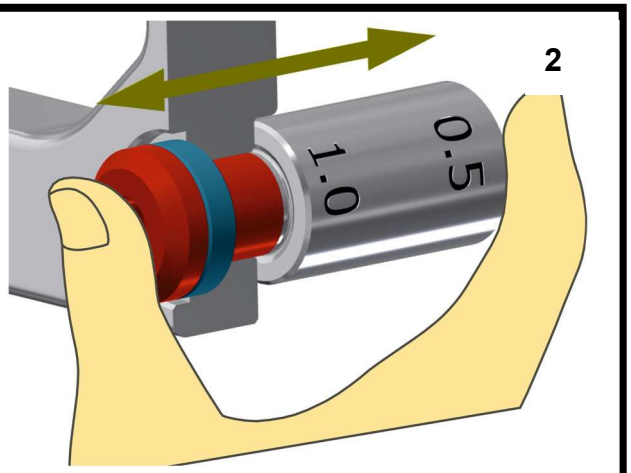
Testing of the left-hand dropout is complete. Max. play test 1.0 not necessary.

Note number of required micro shims in the order form.

Proceed to min. play test 0.5mm for sprocket side (right-hand) dropout.

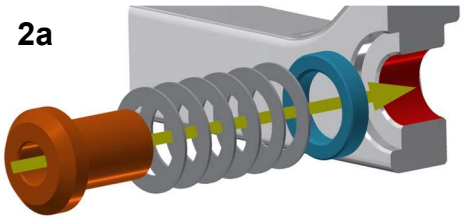
Disc brake side (left-hand): Dropout thickness - Max. play test - 1.0mm

A12 Dropout gauge.
1.0mm side in use

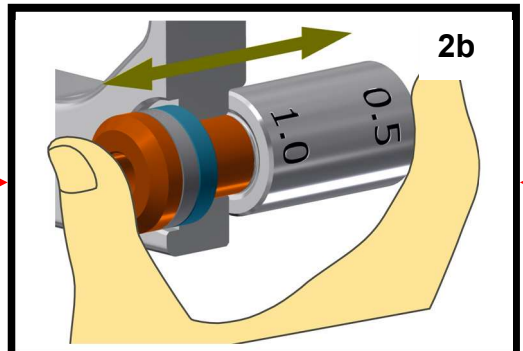


Lateral play

Zero lateral play. Dropout too thick



Fit extended A12 reduction sleeve (orange) with all six 0.5mm micro shims between it and the spacer (turquoise).



Lateral Play

Zero lateral play

Test result = OK.

Testing of the left-hand dropout is complete.
Proceed to min. play test 0.5mm for sprocket side (right-hand) dropout.

Test result = OK.
Custom reduction sleeve required.

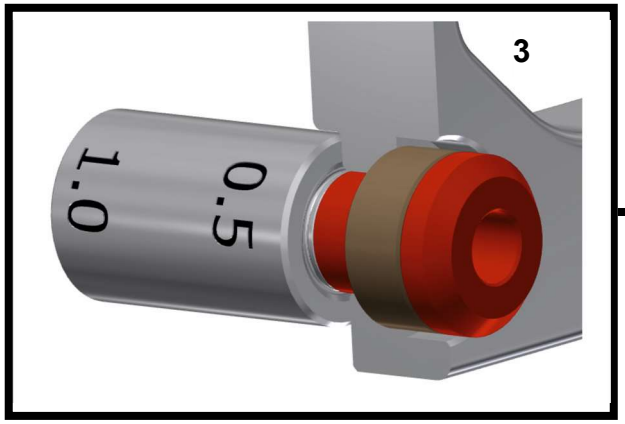
Note number of remaining micro shims on the order form.

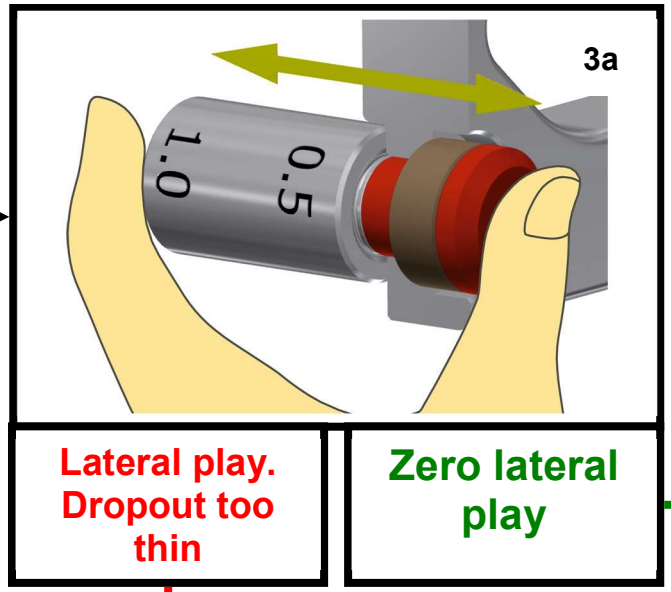
Proceed to min. play test 0.5mm for sprocket side (right-hand) dropout.

Remove one micro shim and repeat the process.

Sprocket side (right-hand): Dropout thickness - Min. play test - 0.5mm

A12 Dropout gauge.
0.5mm side in use



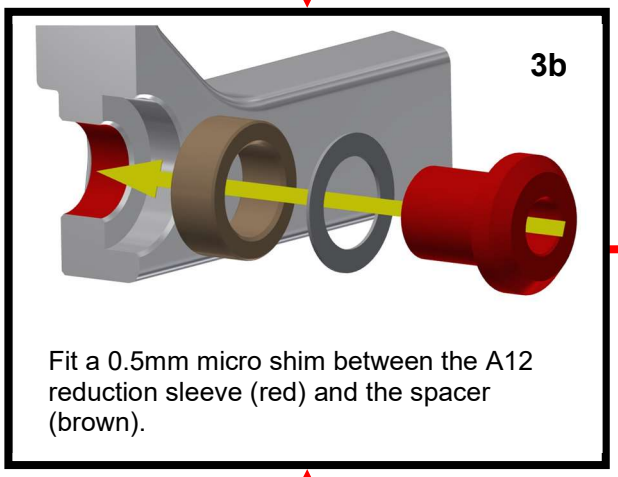


Lateral play. Dropout too thin

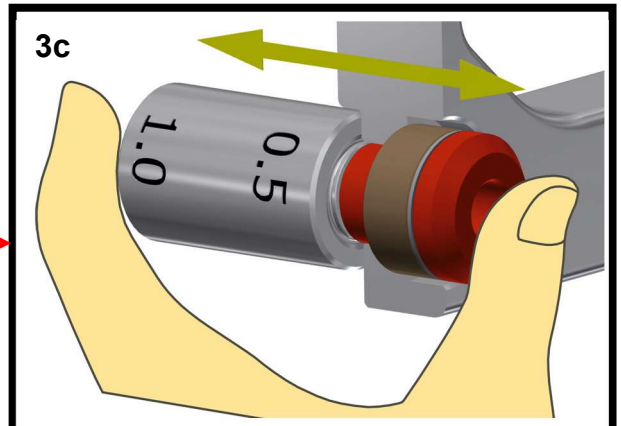
Zero lateral play

0.5mm test result = OK.

Proceed to max. play test – 1.0mm



Fit a 0.5mm micro shim between the A12 reduction sleeve (red) and the spacer (brown).



Lateral play

Zero lateral play

0.5mm test result = OK.

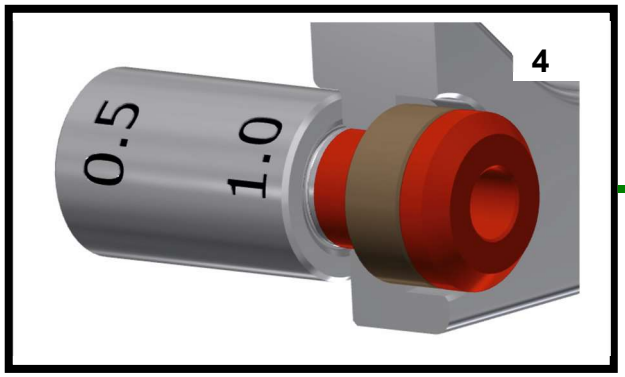
Testing of the right-hand dropout is complete.

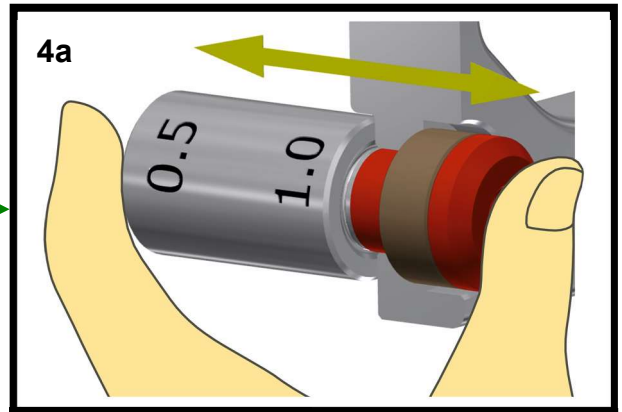
Max. play test 1.0 not necessary.

Note number of required micro shims in the order form.

Sprocket side (right-hand): Dropout thickness - Max. play test - 1.0mm

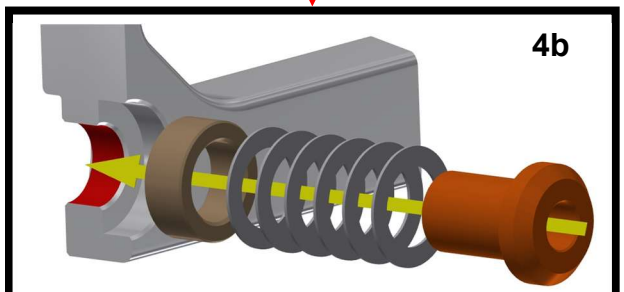
A12 Dropout gauge.
1.0mm side in use



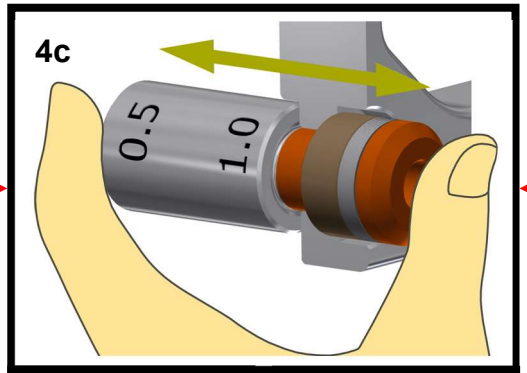


Lateral play

Zero lateral play. Dropout too thick



Fit extended A12 reduction sleeve (orange) with all six 0.5mm micro shims between it and the spacer (brown).



Lateral play

Zero lateral play

Remove one micro shim and repeat the process.

Test result = OK.
Custom reduction sleeve required.

Note number of remaining micro shims on the order form.

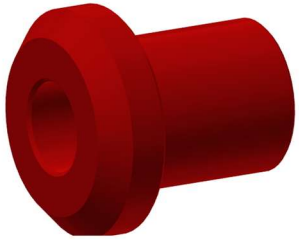
Testing of the right-hand dropout is complete.

Test result = OK.

Testing of the right-hand dropout is complete.

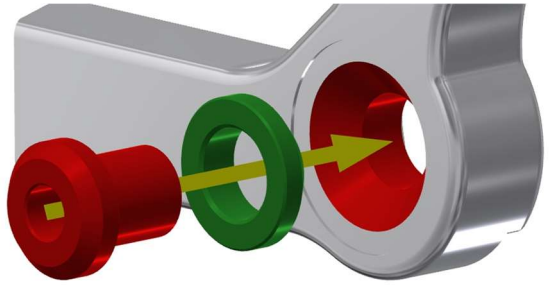
8. Fitment test Syntace X12 (V1)
Thru-axle system

Disc brake side
Left-hand dropout



A12
reduction
sleeve
(red)

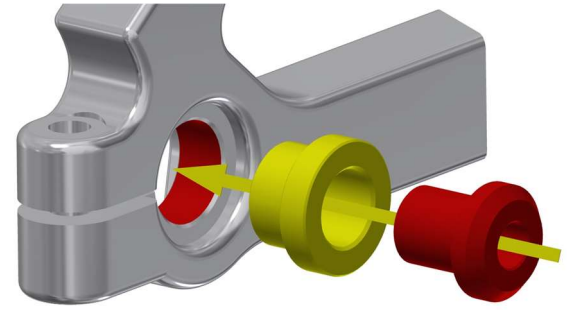
A12 left-hand
conical spacer
(dark green)



Sprocket side
Right-hand dropout

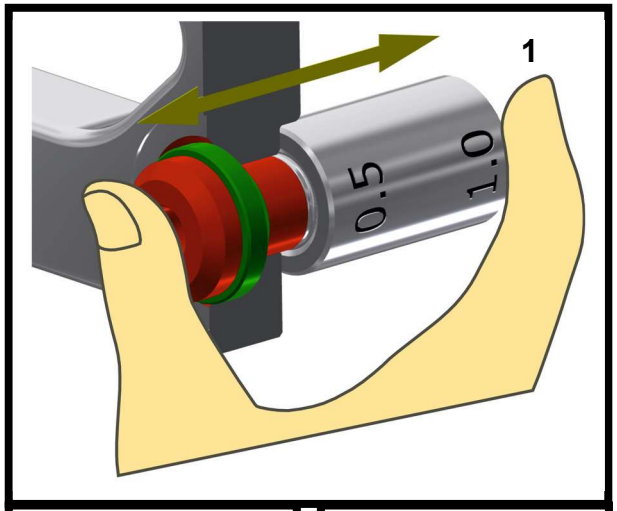
A12 reduction
sleeve
(red)

A12 right-hand
spacer
(yellow)



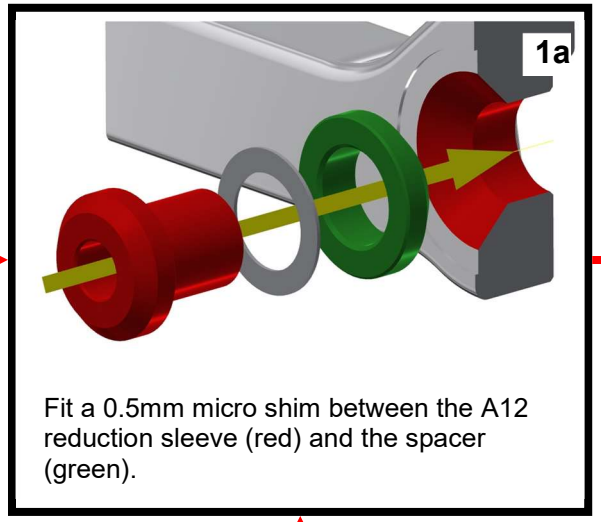
Disc brake side (left-hand): Dropout thickness - Min. play test - 0.5mm

A12 Dropout gauge.
0.5mm side in use

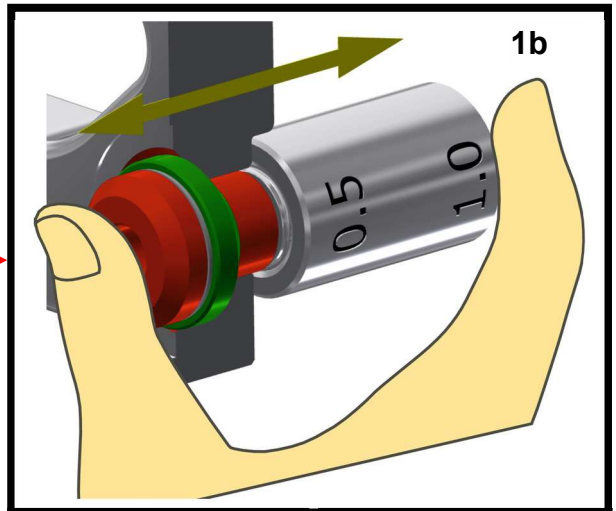


Zero lateral play

Lateral play
Dropout too thin



Fit a 0.5mm micro shim between the A12 reduction sleeve (red) and the spacer (green).



Lateral play

Zero lateral play

0.5mm test result = OK.

Proceed to max. play test – 1.0mm

0.5mm test result = OK.

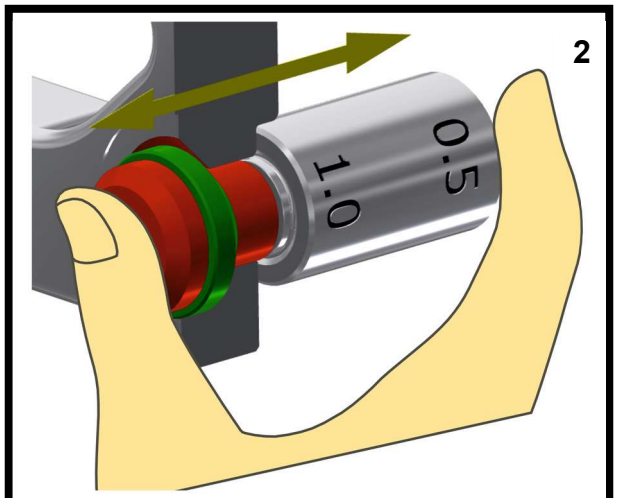
Testing of the left-hand dropout is complete. Max. play test 1.0 not necessary.

Note number of required micro shims in the order form.

Proceed to min. play test 0.5mm for sprocket side (right-hand) dropout.

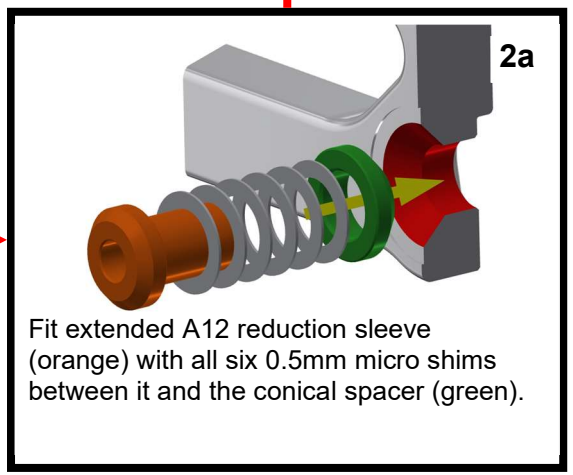
Disc brake side (left-hand): Dropout thickness - Max. play test - 1.0mm

A12 Dropout gauge.
1.0mm side in use

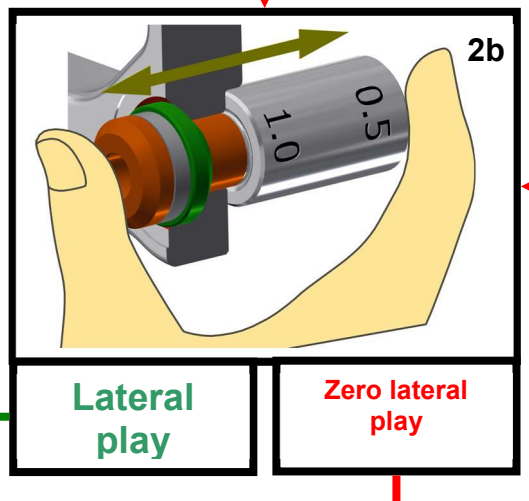


Lateral play

Zero lateral play.
Dropout too thick



Fit extended A12 reduction sleeve (orange) with all six 0.5mm micro shims between it and the conical spacer (green).



Lateral play

Zero lateral play

Test result = OK.

Testing of the left-hand dropout is complete.
Proceed to min. play test 0.5mm for sprocket side (right-hand) dropout.

0.5mm test result = OK.

Testing of the left-hand dropout is complete.
Max. play test 1.0 not necessary.

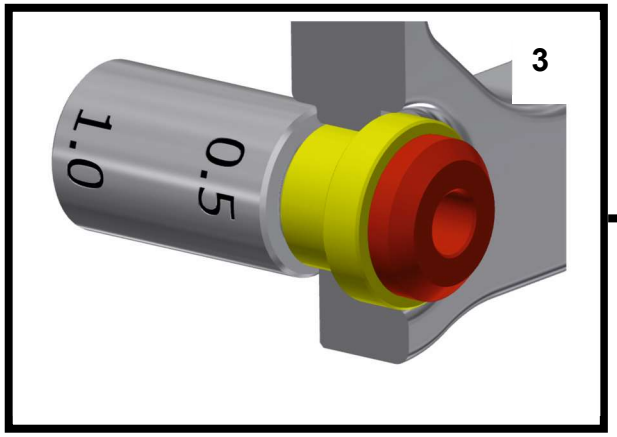
Note number of remaining micro shims in the order form.

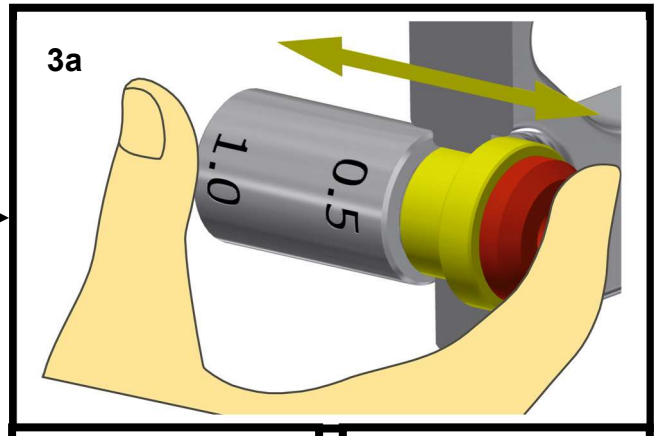
Proceed to min. play test 0.5mm for sprocket side (right-hand) dropout.

Remove one micro shim and repeat the process.

Sprocket side (right-hand): Dropout thickness - Min. play test - 0.5mm

A12 Dropout gauge.
0.5mm side in use



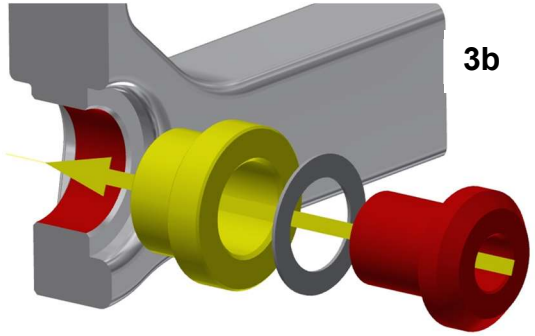


Lateral play
Dropout material too thin

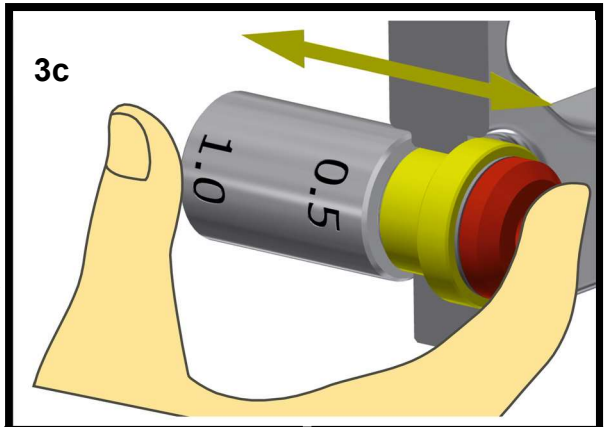
Zero lateral play

0.5mm test result = OK.

Proceed to max. play test – 1.0mm



Fit a 0.5mm micro shim between the A12 reduction sleeve (red) and the spacer (yellow).



Lateral play

Zero lateral play

0.5mm test result = OK.

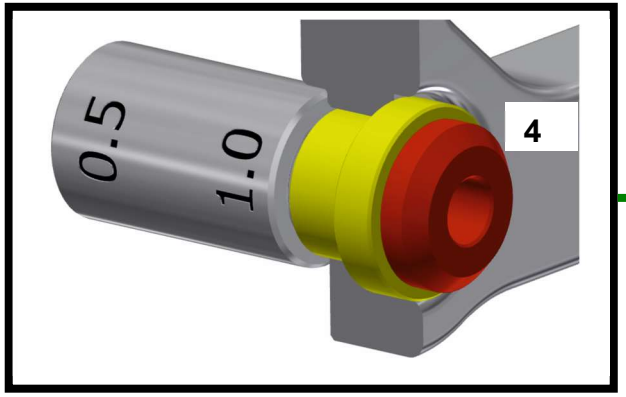
Testing of the right-hand dropout is complete.

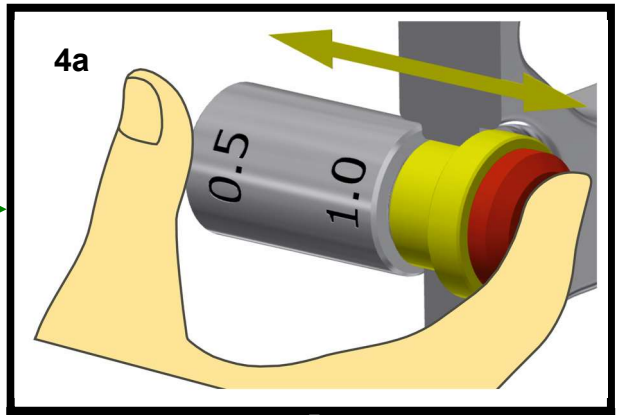
Max. play test 1.0 not necessary.

Note number of required micro shims in the order form.

Sprocket side (right-hand): Dropout thickness - Max. play test - 1.0mm

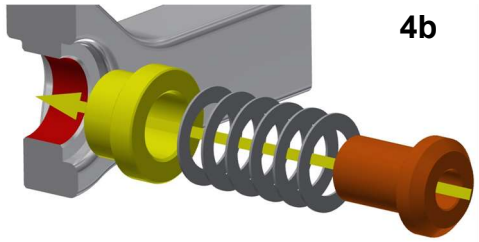
A12 Dropout gauge.
1.0mm side in use



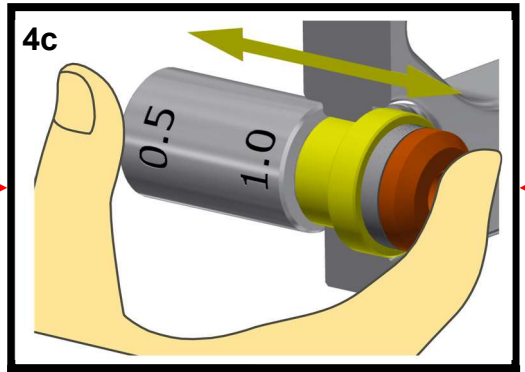


Lateral play

Zero lateral play.
Dropout too thick



Fit extended A12 reduction sleeve (orange) with all six 0.5mm micro shims between it and the spacer (yellow).



Lateral play

Zero lateral play

Remove one micro shim and repeat the process.

Test result = OK.

Testing of the right-hand dropout is complete.

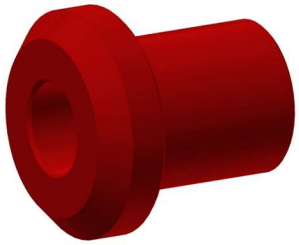
Test result = OK.
Custom reduction sleeve required.

Note number of remaining micro shims on the order form.

Testing of the right-hand dropout is complete.

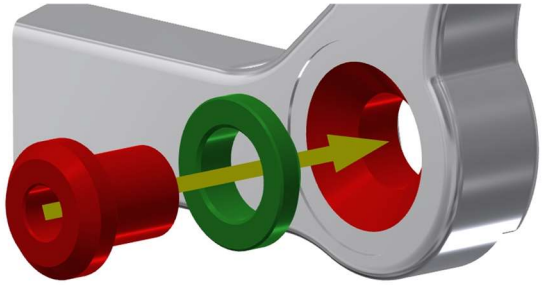
9. Fitment test - Syntace X12 (V2)
Thru-axle system

Disc brake side
Left-hand dropout



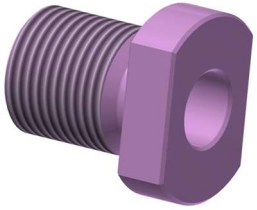
A12 reduction sleeve (red)

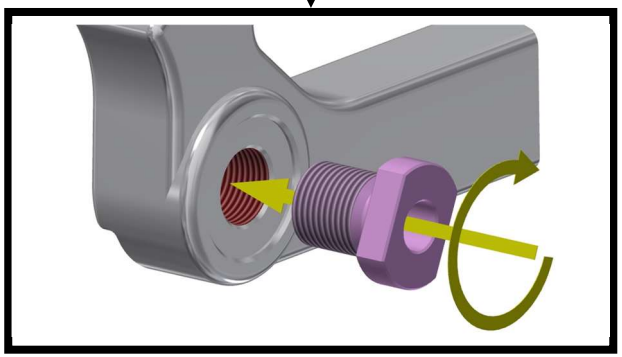
A12 left-hand conical spacer (dark green)



Sprocket side
Right-hand dropout

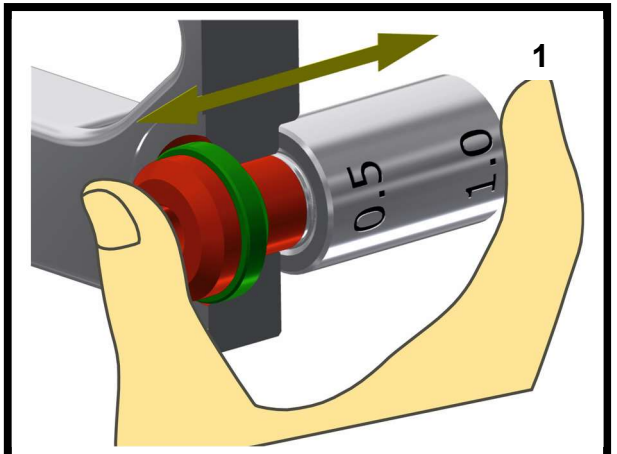
A12 M12x1 threaded reduction sleeve (pink)





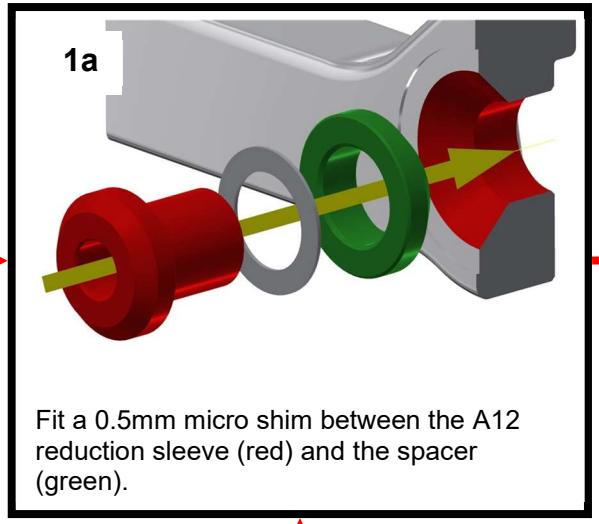
Disc brake side (left-hand): Dropout thickness - Min. play test - 0.5mm

A12 Dropout gauge.
0.5mm side in use

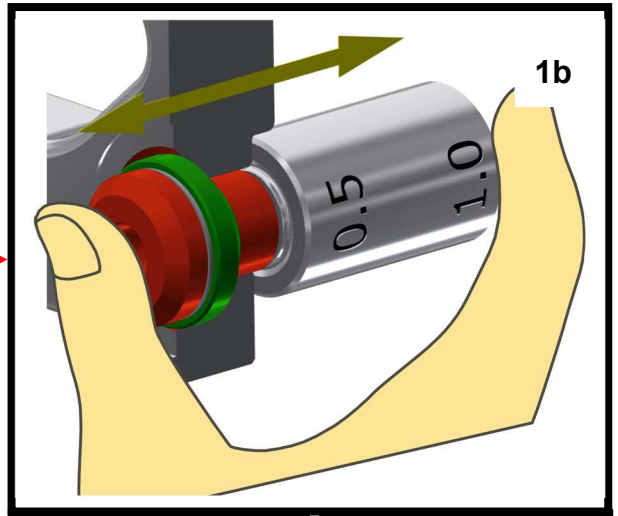


Zero lateral play

Lateral play
Dropout too thin



Fit a 0.5mm micro shim between the A12 reduction sleeve (red) and the spacer (green).



Lateral play

Zero lateral play

0.5mm test result = OK.
Proceed to max. play test – 1.0mm

0.5mm test result = OK.

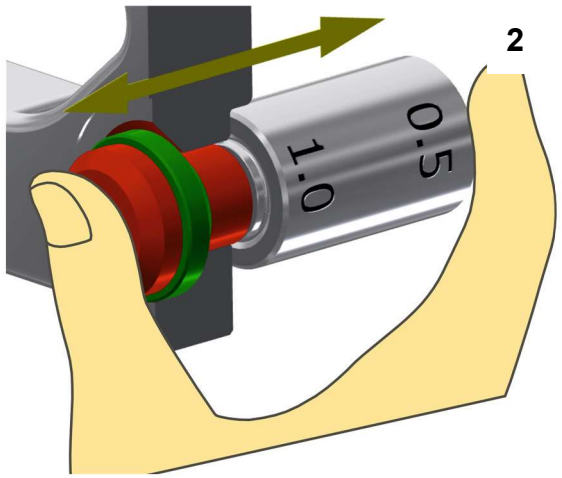
Testing of the left-hand dropout is complete. Max. play test 1.0 not necessary.

Note number of required micro shims in the order form.

Proceed to min. play test 0.5mm for sprocket side (right-hand) dropout.

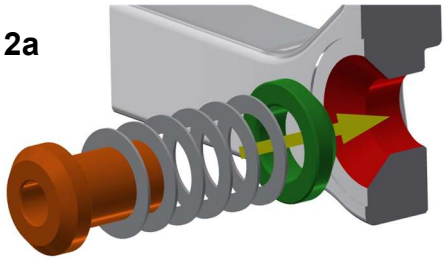
Disc brake side (left-hand): Dropout thickness - Max. play test - 1.0mm

A12 Dropout gauge.
1.0mm side in use

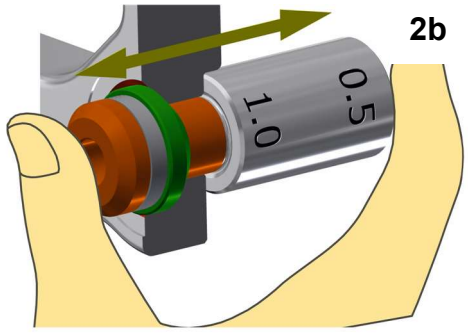


Lateral play

Zero lateral play. Dropout too thick



Fit extended A12 reduction sleeve (orange) with all six 0.5mm micro shims between it and the conical spacer (green).



Lateral play

Zero lateral play

Remove one micro shim and repeat the process.

Test result = OK.

Testing of the left-hand dropout is complete.
Proceed to min. play test 0.5mm for sprocket side (right-hand) dropout.

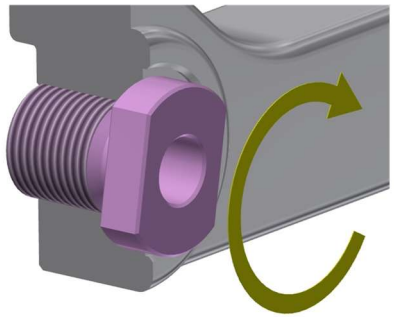
Test result = OK.
Custom reduction sleeve required.

Note number of remaining micro shims on the order form.

Proceed to min. play test 0.5mm for sprocket side (right-hand) dropout.

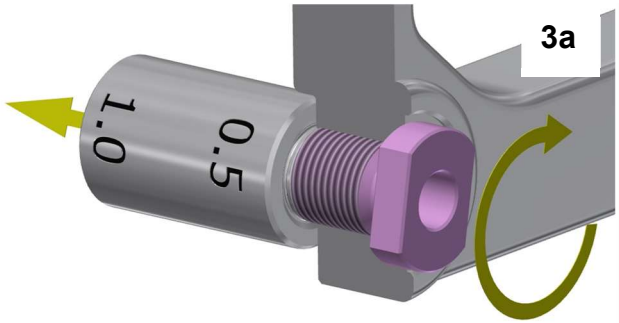
Sprocket side (right-hand): Dropout thickness - Min. play test - 0.5mm

A12 Dropout gauge.
0.5mm side in use



3

Screw the A12 M12x1 threaded reduction sleeve fully into the dropout and then back-off one full rotation.



3a

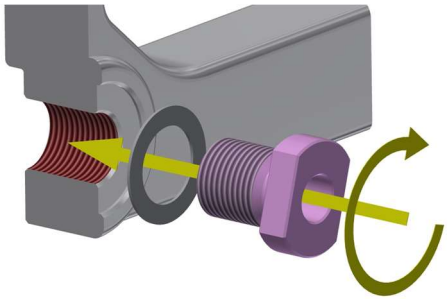
Slowly screw the A12 M12x1 threaded reduction sleeve into the dropout

Movement of dropout gauge in arrowed direction noticeable. Dropout too thin

Zero movement of A12 dropout gauge in arrowed direction noticeable.

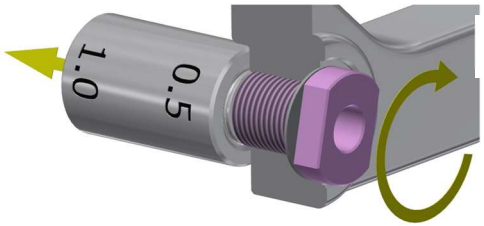
0.5mm test result = OK.

Proceed to max. play test – 1.0mm



3b

Fit a 0.5mm micro shim between dropout & A12 M12x1 (pink) threaded reduction sleeve. Screw the threaded reduction sleeve fully into the dropout & then back-off 1 full rotation.



3c

Slowly screw the A12 M12x1 threaded reduction sleeve into the dropout

Movement of dropout gauge in arrowed direction noticeable.

Movement of A12 dropout gauge in arrowed direction for the first time not noticeable.

0.5mm test result = OK.

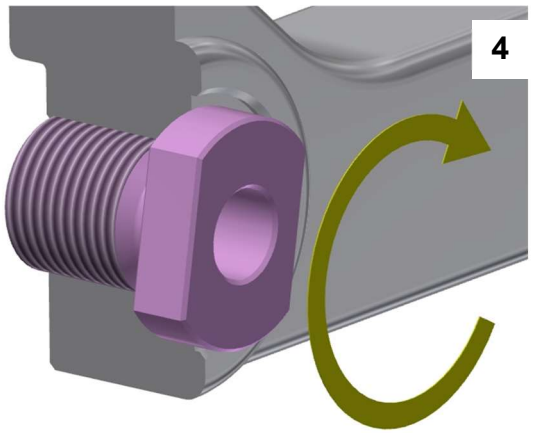
Testing of the right-hand dropout is complete.

Max. play test 1.0 not necessary.

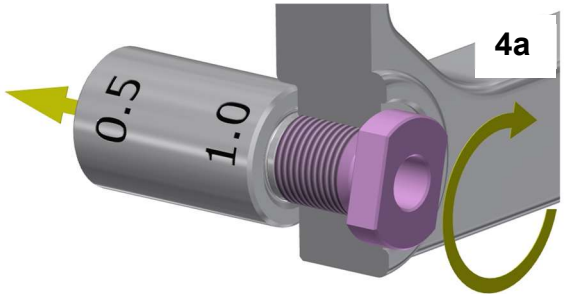
Note number of required micro shims in the order form.

Sprocket side (right-hand): Dropout thickness - Max. play test - 1.0mm

A12 Dropout gauge.
1.0mm side in use



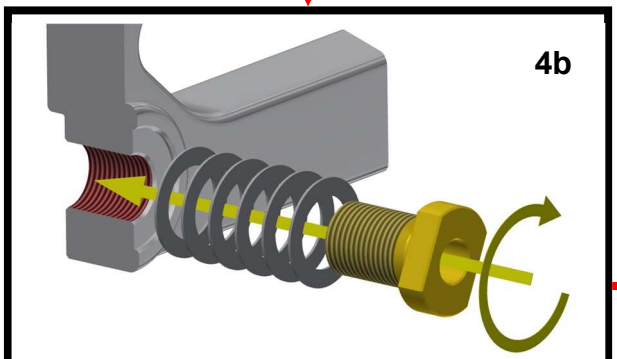
Screw the A12 M12x1 threaded reduction sleeve fully into the dropout and then back-off one full rotation



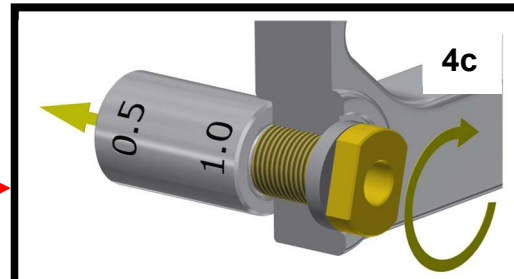
Slowly screw the A12 M12x1 threaded reduction sleeve into the dropout

Movement of dropout gauge in arrowed direction noticeable

Zero movement of A12 dropout gauge in arrowed direction noticeable. Dropout too thick



Fit a 0.5mm micro shim between dropout and the extended A12 M12x1 (gold) threaded reduction sleeve Screw the threaded reduction sleeve fully into the dropout and then back-off one full rotation.



Slowly screw extended A12 M12x1 threaded reduction sleeve (gold) into the dropout

Movement of A12 dropout gauge in arrowed direction noticeable for the first time.

Zero movement of A12 dropout gauge in arrowed direction noticeable.

Remove one micro shim and repeat the process.

Test result = OK.
Custom reduction sleeve required.

Note number of remaining micro shims on the order form.

Testing of the right-hand dropout is complete.

Test result = OK.

Testing of the right-hand dropout is complete.

Second Measurement process using Measurement Gauge (Cylinder/Bolt)

DT / Maxle Dropout Thickness Measurement Process

Syntace V1 Dropout Thickness Measurement Process (threaded bush clamped into right-hand dropout)

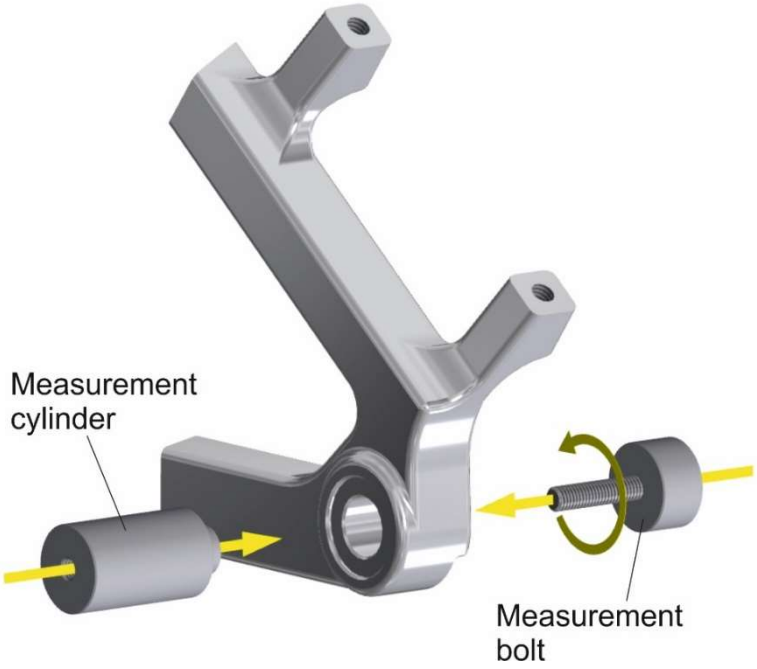
Syntace V2 Dropout Thickness Measurement Process (thread tapped into right-hand dropout)

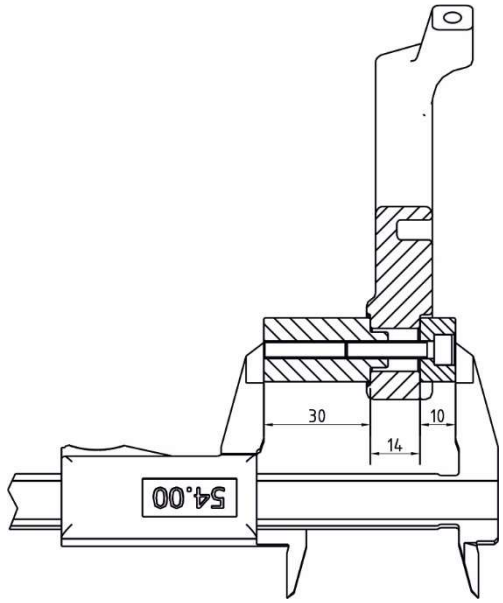
Shimano e-thru Dropout Thickness Measurement Process

10. Second Measurement process using Measurement Gauge (Cylinder/Bolt)

DT / Maxle – Dropout thickness measurement

DT / Maxle: - Disc Brake side – left-hand side





The measurement cylinder must always be positioned against the outer dropout face / the measurement bolt must always be positioned against the inside dropout face. DT / Maxle dropouts are measured without any additional components. Press the measurement cylinder against the outer face of the dropout and thread the measurement bolt into it by hand.

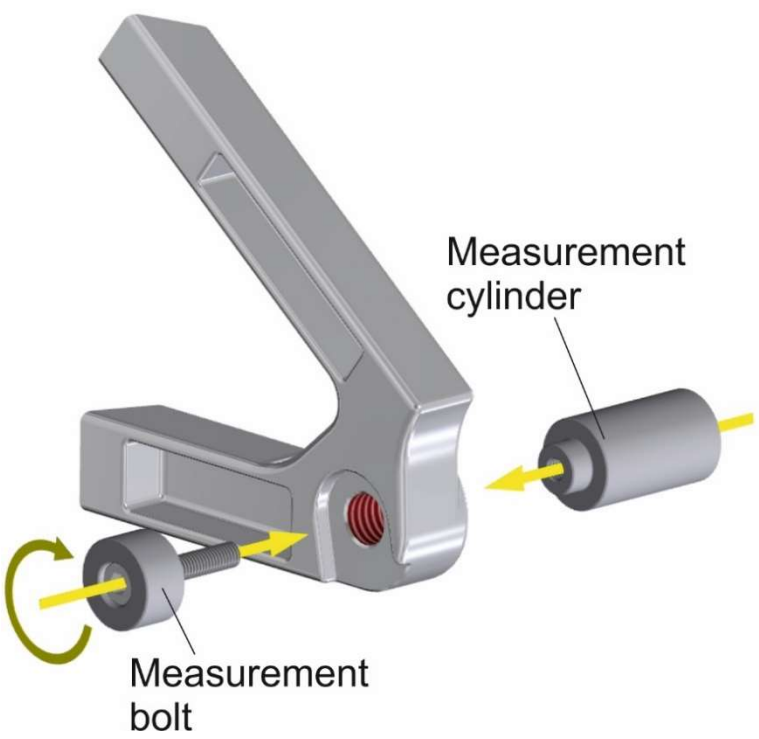
Measure the complete length of the mounted measurement tool with a Vernier Caliper as illustrated.
Note the result below rounded to two decimal places.

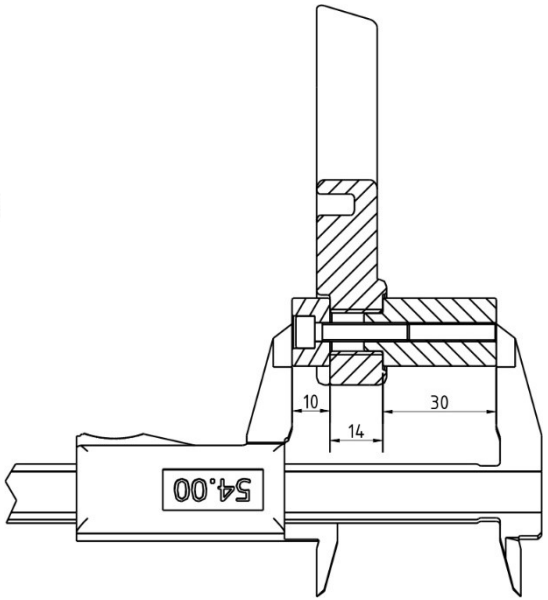
Note result here: __ __ . __ __ mm

Frame Brand & Model: _____ Frame number: _____

We regret it is not be possible to mount a SPEEDHUB should the measurement equate to >57.5mm.
We regret it is not be possible to mount a SPEEDHUB should the measurement equate to <47,0mm.

DT / Maxle: - Sprocket side – right-hand side





The measurement cylinder must always be positioned against the outer dropout face / the measurement bolt must always be positioned against the inside dropout face. DT / Maxle dropouts are measured without any additional components.
Press the measurement cylinder against the outer face of the dropout and thread the measurement bolt into it by hand.

Measure the complete length of the mounted measurement tool with a Vernier Caliper as illustrated.
Note the result below rounded to two decimal places.

Note result here: __ __ . __ __ mm

Note thread pitch: M12 x _____

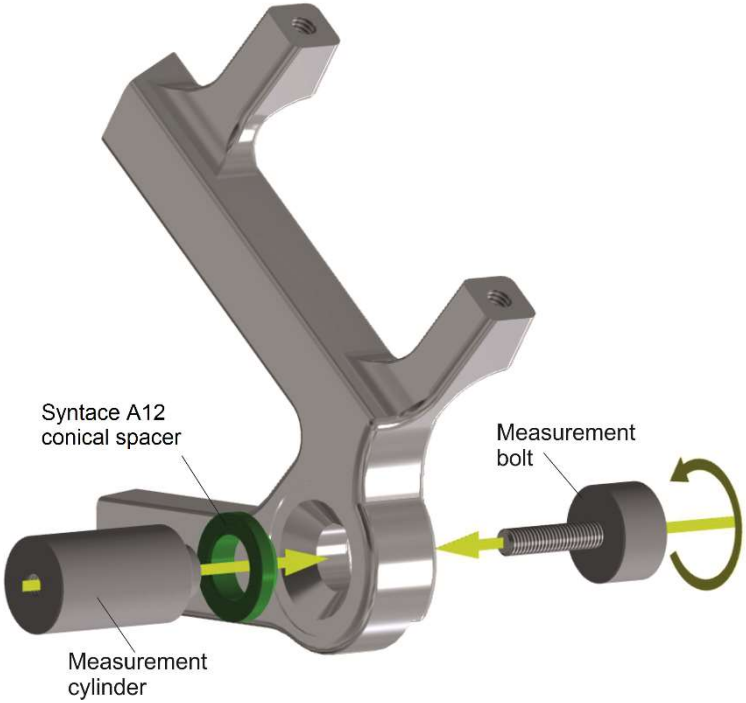
Frame Brand & Model: _____

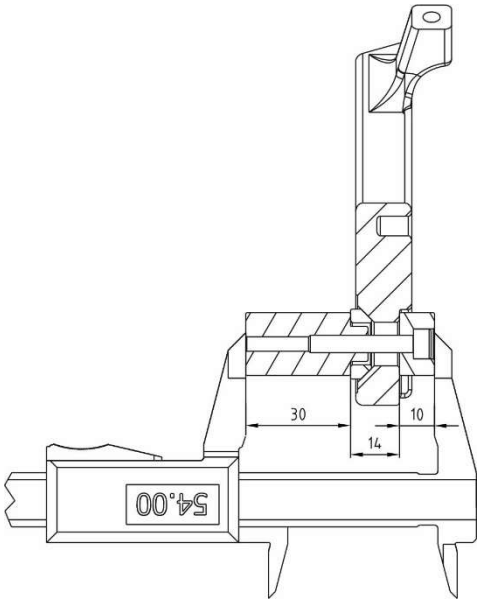
Frame number: _____

We regret it is not be possible to mount a SPEEDHUB should the measurement equate to >57.5mm.
We regret it is not be possible to mount a SPEEDHUB should the measurement equate to <47,0mm.

Syntace V1 Dropout thickness measurement (threaded bush in right-hand dropout)

Syntace V1: - Disc Brake side – left-hand side





The measurement cylinder must always be positioned against the outer dropout face / the measurement bolt must always be positioned against the inside dropout face. Place the Syntace A12 Conical spacer (green) over the measurement cylinder. Then press the measurement cylinder (with green conical spacer) against the outer face of the dropout and thread the measurement bolt into it by hand.

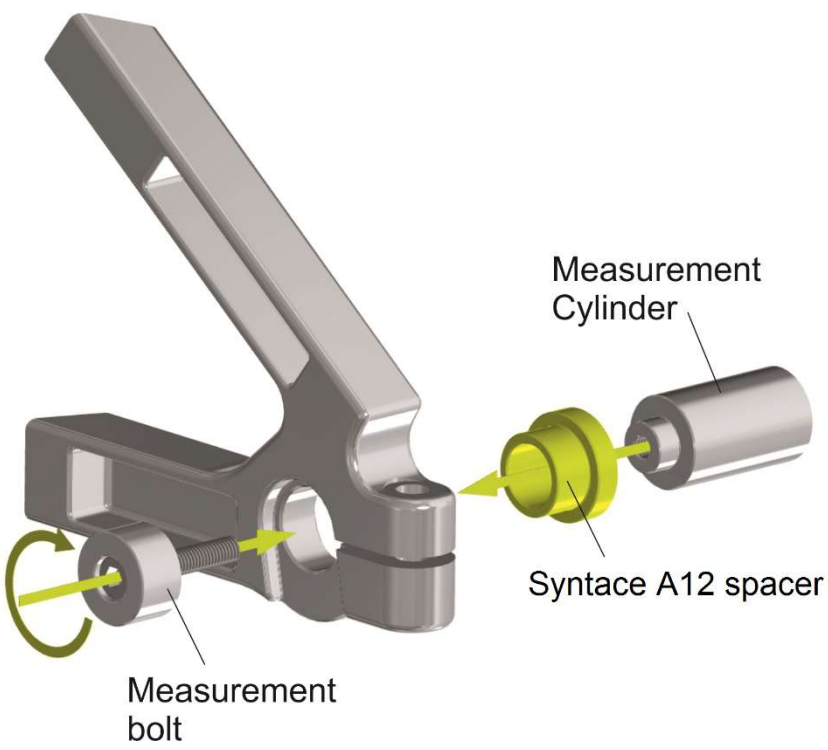
Measure the complete length of the mounted measurement tool with a Vernier Caliper as illustrated.
Note the result below rounded to two decimal places.

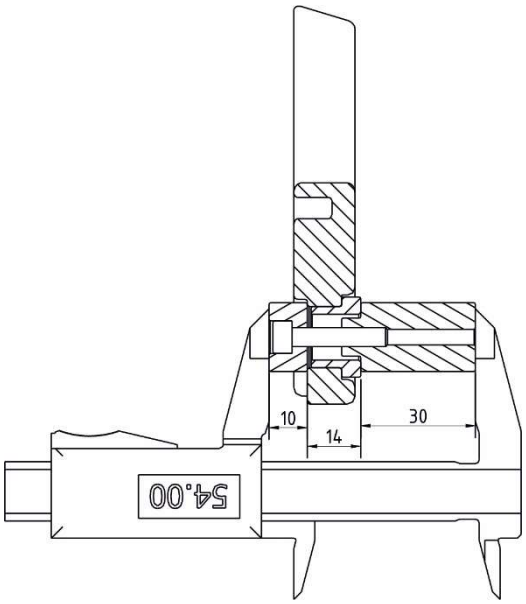
Note result here: __ __ . __ __ mm

Frame Brand & Model: _____ Frame number: _____

We regret it is not be possible to mount a SPEEDHUB should the measurement equate to >57.5mm.
We regret it is not be possible to mount a SPEEDHUB should the measurement equate to <51,0mm.

Syntace V1: - Sprocket side – right-hand side





The measurement cylinder must always be positioned against the outer dropout face / the measurement bolt must always be positioned against the inside dropout face. Place the Syntace A12 spacer (yellow) over the measurement cylinder. Then press the measurement cylinder (with yellow spacer) against the outer face of the dropout and thread the measurement bolt into it by hand.

Measure the complete length of the mounted measurement tool with a Vernier Caliper as illustrated.
Note the result below rounded to two decimal places

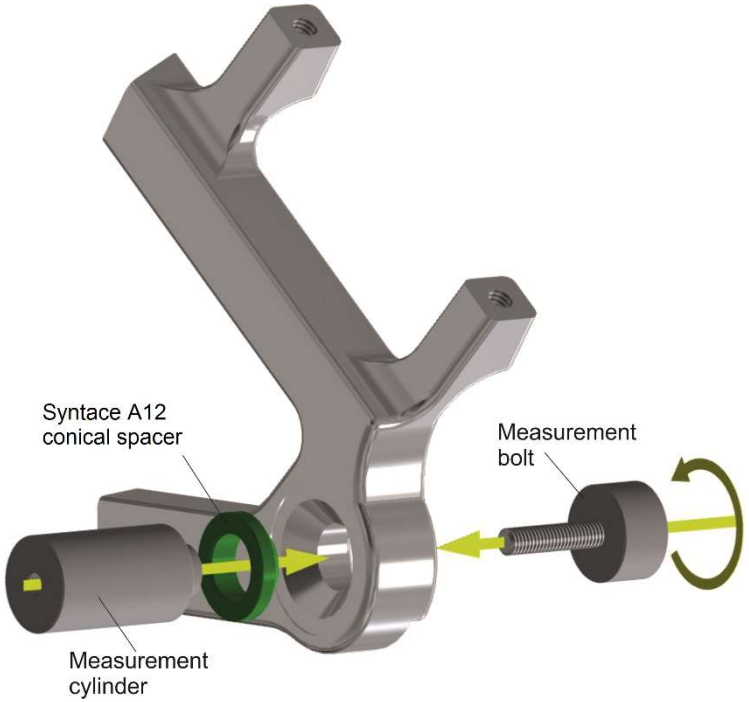
Note result here: __ __ . __ __ mm

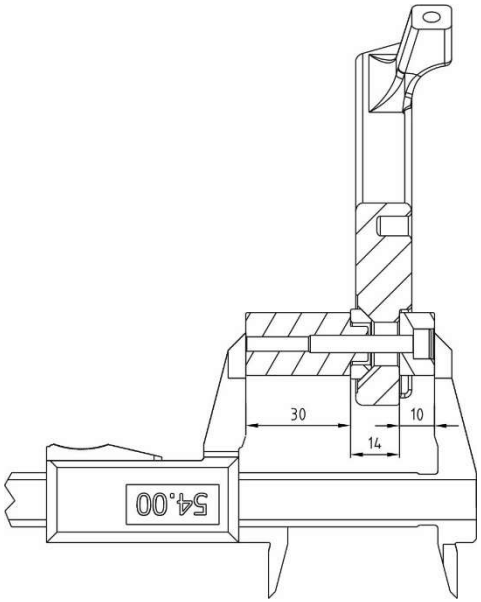
Frame Brand & Model: _____ Frame number: _____

We regret it is not be possible to mount a SPEEDHUB should the measurement equate to >57.5mm.
We regret it is not be possible to mount a SPEEDHUB should the measurement equate to <51,0mm.

Syntace V2 Dropout thickness measurement (thread cut into right-hand dropout)

Syntace V2: - Disc Brake side – left-hand side





The measurement cylinder must always be positioned against the outer dropout face / the measurement bolt must always be positioned against the inside dropout face. Place the Syntace A12 Conical spacer (green) over the measurement cylinder. Then press the measurement cylinder (with green conical spacer) against the outer face of the dropout and thread the measurement bolt into it by hand.

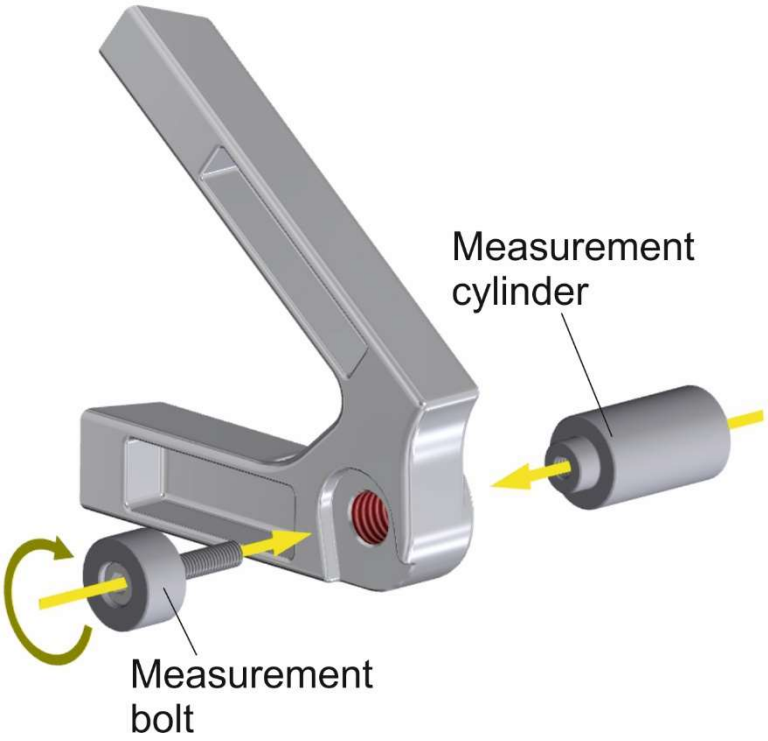
Measure the complete length of the mounted measurement tool with a Vernier Caliper as illustrated.
Note the result below rounded to two decimal places

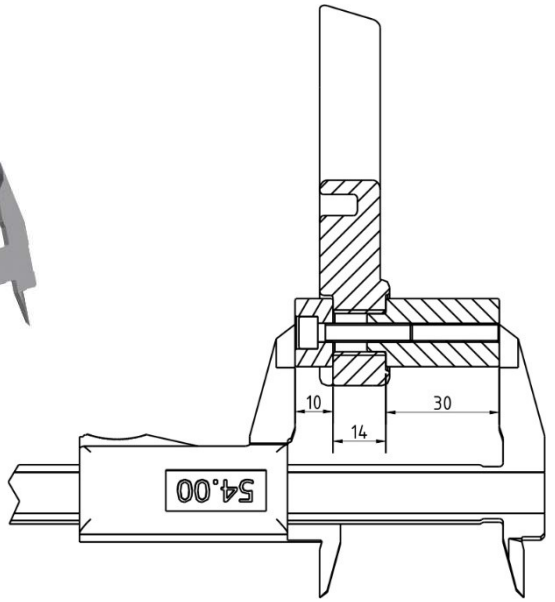
Note result here: __ __ . __ __ mm

Frame Brand & Model: _____ Frame number: _____

We regret it is not be possible to mount a SPEEDHUB should the measurement equate to >57.5mm.
We regret it is not be possible to mount a SPEEDHUB should the measurement equate to <51,0mm.

Syntace V2: - Sprocket side – right-hand side





The measurement cylinder must always be positioned against the outer dropout face / the measurement bolt must always be positioned against the inside dropout face. Press the measurement cylinder against the outer face of the dropout and thread the measurement bolt into it by hand.

Measure the complete length of the mounted measurement tool with a Vernier Caliper as illustrated.
Note the result below rounded to two decimal places

Note result here: __ __ . __ __ mm

Note thread pitch: M12 x _____

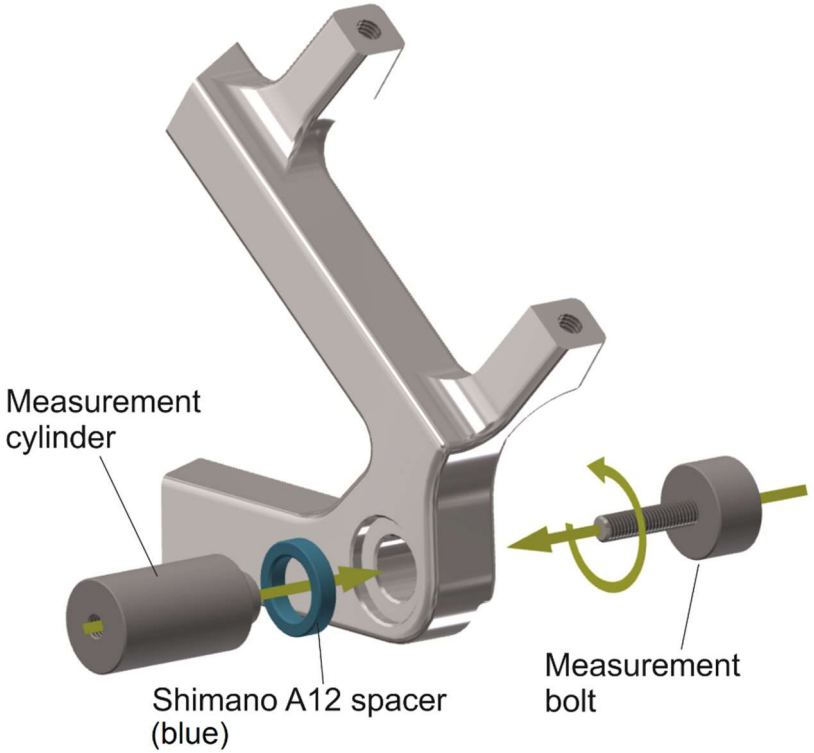
Frame Brand & Model: _____

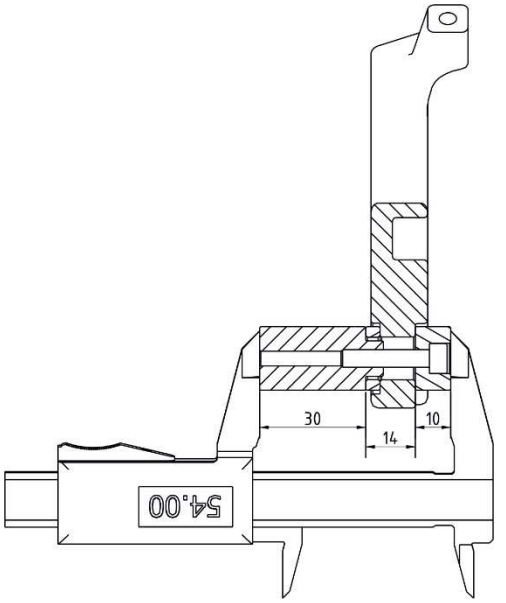
Frame number: _____

We regret it is not be possible to mount a SPEEDHUB should the measurement equate to >57.5mm.
We regret it is not be possible to mount a SPEEDHUB should the measurement equate to <47,0mm.

Shimano e-thru Dropout thickness measurement

Shimano e-thru: - Disc Brake side – left-hand side





The measurement cylinder must always be positioned against the outer dropout face / the measurement bolt must always be positioned against the inside dropout face. Place the Shimano A12 spacer (blue) over the measurement cylinder. Then press the measurement cylinder (with blue spacer) against the outer face of the dropout and thread the measurement bolt into it by hand.

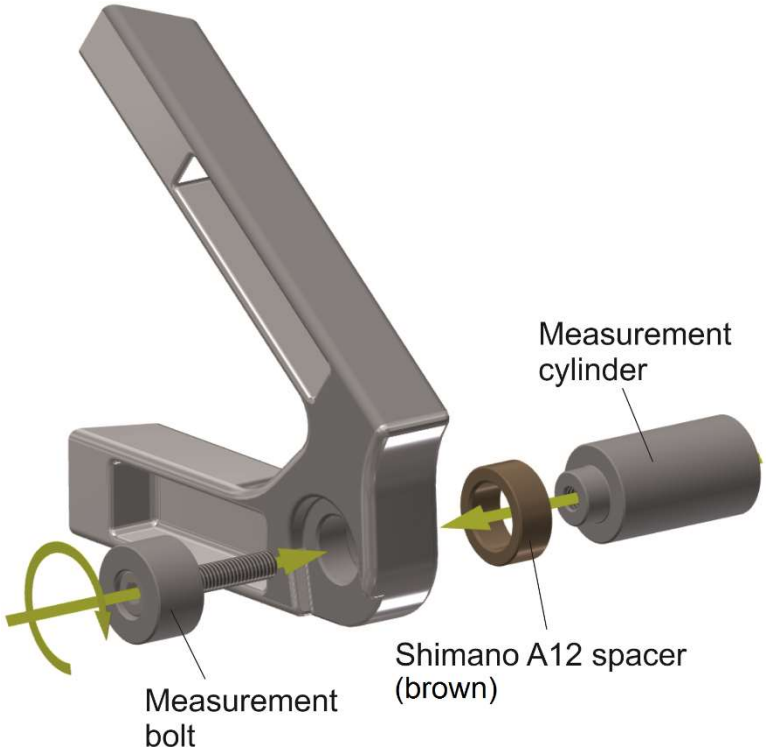
Measure the complete length of the mounted measurement tool with a Vernier Caliper as illustrated.
Note the result below rounded to two decimal places.

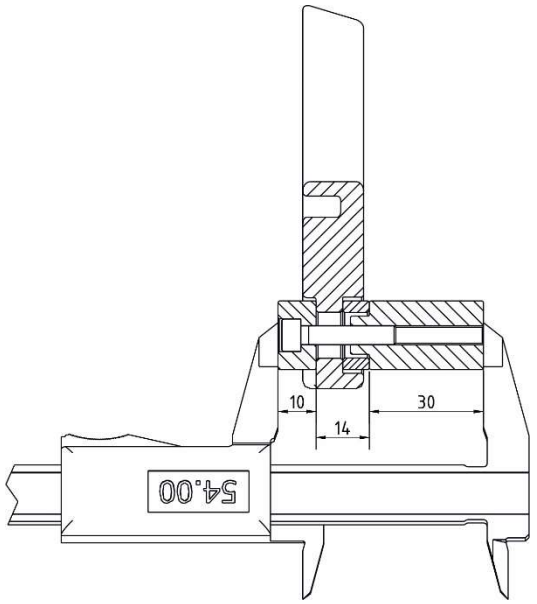
Note result here: __ __ . __ __ mm

Frame Brand & Model: _____ Frame number: _____

We regret it is not be possible to mount a SPEEDHUB should the measurement equate to >57.5mm.
We regret it is not be possible to mount a SPEEDHUB should the measurement equate to <47,0mm.

Shimano e-thru: - Sprocket side – right-hand side





The measurement cylinder must always be positioned against the outer dropout face / the measurement bolt must always be positioned against the inside dropout face. Place the Shimano A12 spacer (brown) over the measurement cylinder. Then press the measurement cylinder (with brown spacer) against the outer face of the dropout and thread the measurement bolt into it by hand.

Measure the complete length of the mounted measurement tool with a Vernier Caliper as illustrated.
Note the result below rounded to two decimal places.

Note result here: __ __ . __ __ mm

Frame Brand & Model: _____ Frame number: _____

We regret it is not be possible to mount a SPEEDHUB should the measurement equate to >57.5mm.
We regret it is not be possible to mount a SPEEDHUB should the measurement equate to <47,0mm.

Order form

Customer:_____ **Customer #:_____**

Contact Person_____ **Telefone_____** **Date_____**

Data Bicycle Frame:

Brand_____ Model_____ Year of Manufacture_____ Frame Number_____
Disc brake mount ___ IS2000 ___ PM Disc diameter without adaptors ___140mm ___160mm ___180mm
___ Eccentric bottom bracket ___adjustable dropouts ___Chain tensioner
___ standard derailleur hanger ___direct mount derailleur hanger
___ chain drive ___Gates Carbon drive

Order 1x Rohloff SPEEDHUB A12

O.L.D. (width) ____142mm ____32-hole ____36-hole ____silver ____black ____red
____148mm ____32-hole ____36-hole ____silver ____black ____red
____177mm (32-hole, black
____197mm (32-hole, black)

Chain Tensioner: ____yes ____no

Axleplate

____A12 OEM2 (142/148/177) ____A12 PM (142/148/177) ____A12 OEM2 (197)

Torque anchoring adapter:

____Monkeybone160 (Art.#8553) ____Monkeybone180 (Art.#8554) ____PM Bone (Art.#8555)
____Monkeybone-10/160 (Art.#8553-10) ____Monkeybone-10/180 (Art.#8554-10)
____FAT-Bone180 (Art.#8556) ____Fat-Bone203 (Art.#8557)

Brake System:

SPEEDHUB will be used without a disc brake ____
SPEEDHUB will be used with a disc brake. Please ship corresponding brake rotor with hub _____
Disc brake rotor diameter ____ mm Disc brake brand & model _____

Axle system (of tested frame, please tick test components required)

____DT/Maxle:

Disc Brake side (left-hand)
____Red reduction sleeve (8592) ____ Number of micro shims required
____Orange reduction sleeve (8592S) ____ Number of remaining micro shims

Sprocket side (right-hand)
____Blue threaded reduction sleeve M12x1.75 (8593) ____ Number of micro shims required
____Black threaded reduction sleeve M12x1.5 (8599) ____ Number of micro shims required
____Gray threaded reduction sleeve M12x1.75 (8593S) ____ Number of remaining micro shims
____Light-green threaded reduction sleeve M12x1.5 (8599S) ____ Number of remaining micro shims

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____Shimano e-thru 12:

Disc Brake side (left-hand)
____Red reduction sleeve (8592) + turquoise spacer (8596) ____ Number of micro shims required
____Orange reduction sleeve (8592S) + turquoise spacer (8596) ____ Number of remaining micro shims

Sprocket side (right-hand)
____Red reduction sleeve (8592) + brown spacer (8597) ____ Number of micro shims required
____Orange reduction sleeve (8592S) + brown spacer (8597) ____ Number of remaining micro shims

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____Syntace X12-V1:

Disc Brake side (left-hand)
____Red reduction sleeve (8592) + green conical spacer (8594) ____ Number of micro shims required
____Orange reduction sleeve (8592S) + green conical spacer (8594)____ Number of remaining micro shims

Sprocket side (right-hand)
____Red reduction sleeve (8592) + yellow spacer (8595) ____ Number of micro shims required
____Orange reduction sleeve (8592S) + yellow spacer (8595) ____ Number of remaining micro shims

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____Syntace X12-V2:

Disc Brake side (left-hand)
____Red reduction sleeve (8592) + green conical spacer (8594) ____ Number of micro shims required
____Orange reduction sleeve (8592S) + green conical spacer (8594)____ Number of remaining micro shims

Sprocket side (right-hand)
____Pink threaded reduction sleeve (8598) ____ Number of micro shims required
____Gold threaded reduction sleeve (8598S) ____ Number of remaining micro shims

Please return this complete dropout measurement kit only after receipt of an order confirmation or direct response from the Rohloff AG.