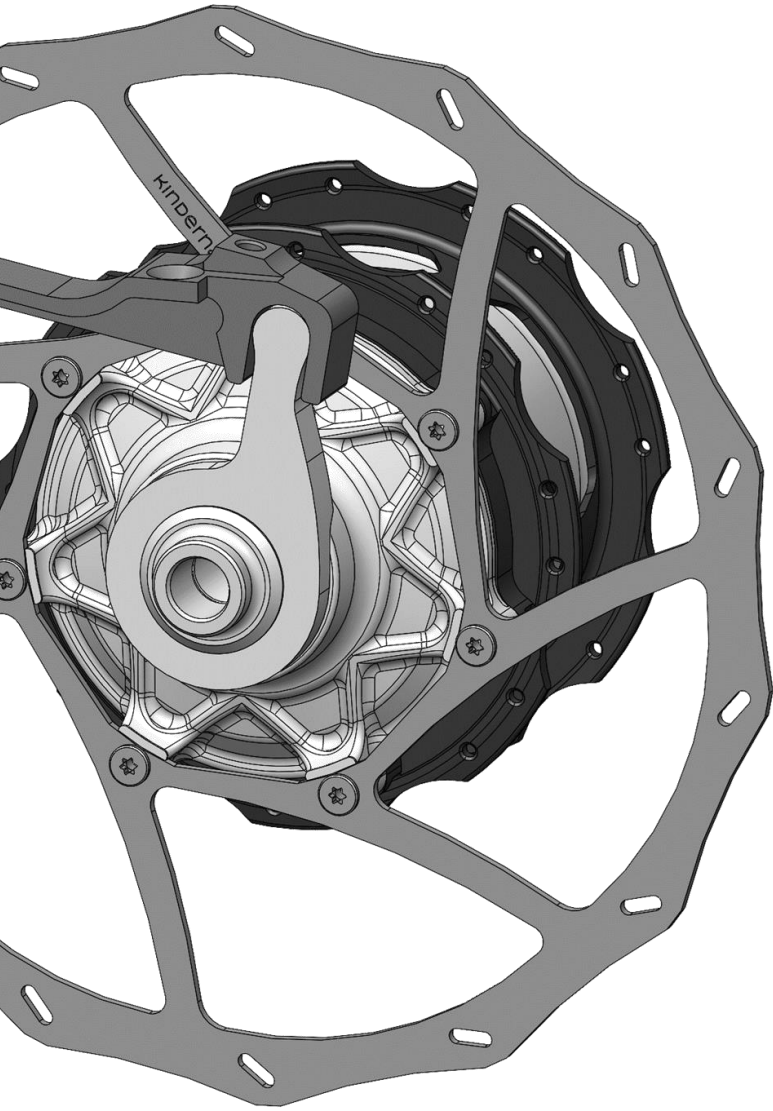


kindernay



KINDERNAY XIV

INSTALLATION MANUAL

Ver 1.0.4

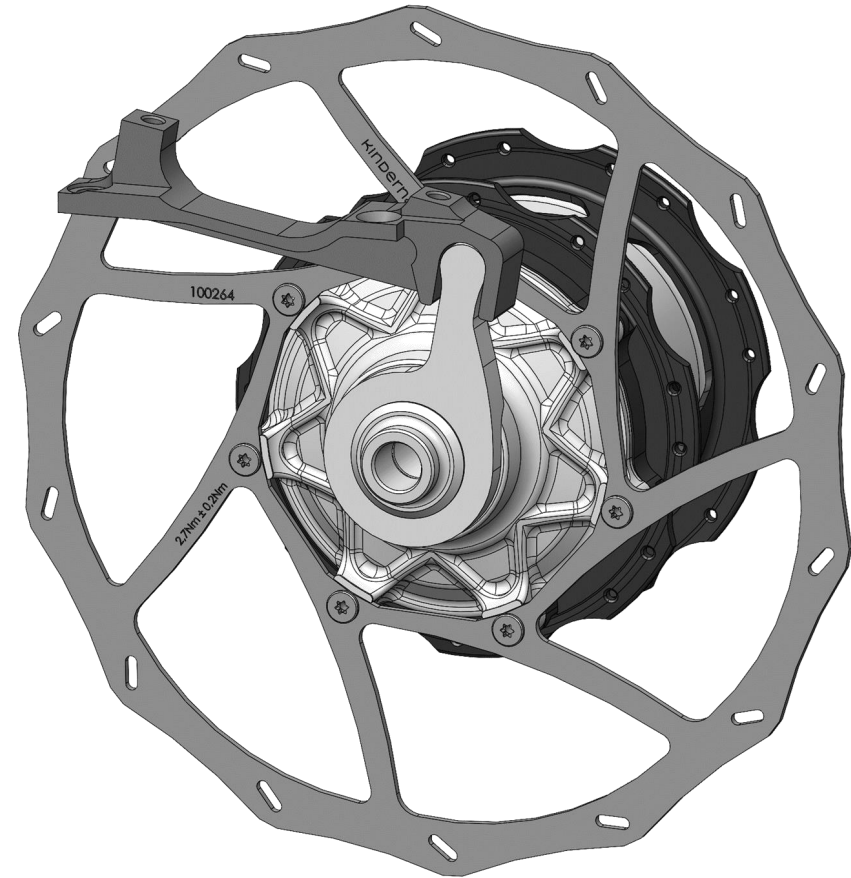
DISCLAIMER

- ! The gearhub must not be used outside its intended use case or installed in a different way than described in this manual.
 - ! Improper installation can cause serious bike malfunction that may lead to serious injury or death!
- ! The installation procedure should only be performed by experienced mechanics.
- ! The gearhub must never be used without a SWAP shell.
 - ! This can cause the hub shell to separate and will void the warranty.
- ! The minimum sprocket ratio of the XIV is 1.9. The minimum front chainring is 32T on E-bike and 30T on a non-assisted bike.
 - ! Using a lower sprocket ratio or chainring size will void the hub warranty.
- ! The maximum crank torque is 160 Nm and the maximum motor power is 1000 W.
 - ! Using a bike/mid-drive motor with more than 160 Nm / 1000 W will void the hub warranty.
- ! The max. sprocket thickness is 2.3 mm.
 - ! Using a thicker sprocket or a non-original lockring will void the warranty.
- ! Wear eye protection and rubber gloves.
- ! USE ONLY MINERAL OIL WHEN BLEEDING THE SYSTEM.
 - ! DOT fluid will destroy the seals inside the shifters.
- ! Remove or protect any brake components before performing the bleeding procedure. Any oil spill on braking components may affect braking performance afterwards that can lead to serious injury or death.

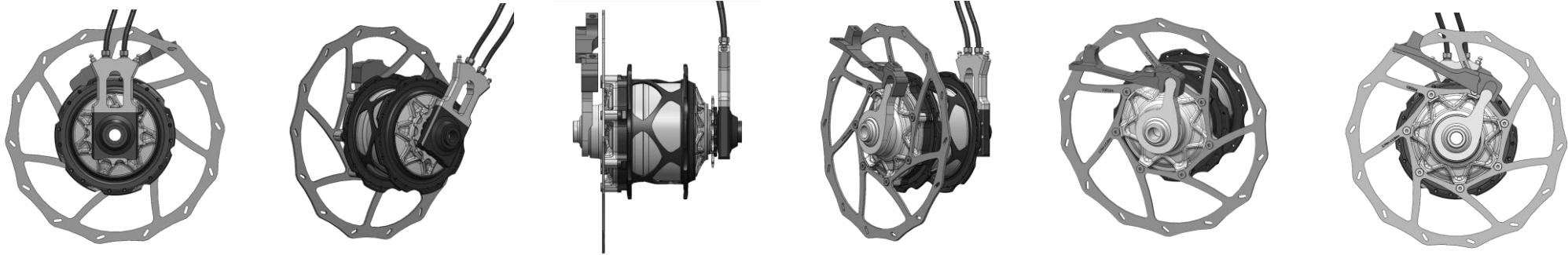
SCOPE

This instruction is intended for professional and home mechanics to:

- Install the Kindernay gearhub system on a bicycle.
- Find product specifications for the Kindernay XIV gearhub.



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IN THE BOX

This is a list of the contents included with the Kindernay XIV gearhub:

- XIV hub with drive sprocket
- SWAP shell (28h, 32h or 36h)
- HYSEQ hydraulic shifter unit
- PM Torque reaction mount
- M6 Mounting bolts for torque reaction mount
M4 Mounting bolts for SWAP shell (7pcs)
- Gear oil (30 ml) (**NOTE: Must be added to the hub before use**)
- Spare bolts for SWAP shell (3pcs) and spare olives (2pcs) for the hydraulic lines

SERVICE INTERVALS

NOTE !

Failure to follow the Kindernay XIV service procedures will void the Kindernay gearhub warranty.

We specify the following oil change intervals for the Kindernay XIV:

- Initial oil change: After first 500 km.
- Periodic oil change: Next 5000 km or annually, whichever comes first.

Please see [page 19](#) for the oil change procedure.



TOOLS NEEDED

This is a list of tools that we recommend to set up the Kindernay XIV internal gear hub on your bike:

- 4 and 5 mm Allen key
- T25 and T30 Torx driver
- 5 mm and 8 mm combination spanner
- Torque wrench
- Chain cutter and chain link tool
- 38 mm chamferless socket, or 16-notch 44 mm BB tool (i.e. Park Tool BBT 69.2), depending on lockring
- Flathead screwdriver
- Optional:
 - 13 mm and 17 mm combination spanner
 - Match cap removal tool or 12mm ID bearing extractor tool
 - Two-jaw bearing extractor tool



SWAP & BRAKE ROTOR INSTALLATION

CAUTION !

Failure to install the bolts according to the described procedure below can cause the bolts loosening, leading to serious malfunction and injury.

NOTE !

The Kindernay XIV SWAP bolts are proprietary and cannot be exchanged with regular M4 bolts.



1.1: Clean the SWAP-shell and gearhub housing.



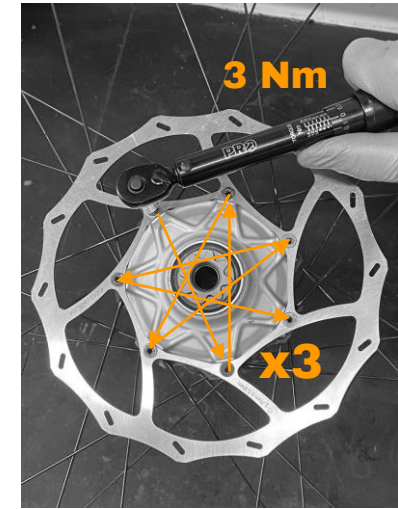
1.2: Apply Loctite 243 to the supplied SWAP bolts.



1.3: Install the gearhub in the SWAP.



1.4: Install the brake rotor, align the bolt holes and install the bolts.



1.5: Tighten the bolts to 3 Nm in a star pattern. Repeat 3 times.

TORQUE ARM INSTALLATION

NOTE !

The XIV torque arms must be oriented with the flat face outwards, as shown.

NOTE !

The XIV torque arm may have a slight press fit that will require a rubber mallet for installation.



2.1: Align the torque arm with the flat face outwards, as shown.



2.2: Gently tap the torque arm in place with a rubber mallet.



2.3: Lightly grease the end cap press fit surface.



2.4: Gently tap the match cap in place with a rubber mallet.

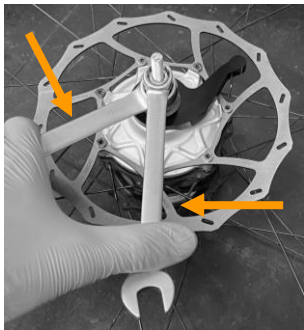
TORQUE ARM REMOVAL

CAUTION !

Make sure to protect the hub shift cam when removing the match cap, by temporarily installing the HYSEQ actuator.

NOTE !

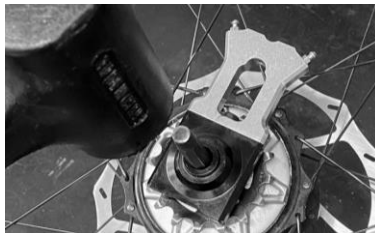
The XIV torque arm may have a slight press fit that will require a two-jaw bearing extractor tool for removal.



3.1: Insert the match cap removal tool.
3.2 Tighten the 13 mm and 17 mm nuts to secure the match cap tool.



3.3: To protect the shift cam from accidental damage, insert the HYSEQ actuator on the drive side.



3.4: Slide a thru axle or suitable punch through the hub from the drive side.
3.5: Gently tap the axle or punch to remove the match cap.



3.6: Remove the torque arm.



3.7: If the torque arm press fit is too tight to be removed by hand, use a two-jaw bearing extractor tool as shown for removal.

GEAR RATIO SPECIFICATION

Gear no.	Gear ratio	Gear step
1	0,272	1,1390
2	0,310	1,1390
3	0,353	1,1390
4	0,402	1,1390
5	0,458	1,1390
6	0,522	1,1390
7	0,594	1,1390
8	0,677	1,1390
9	0,771	1,1390
10	0,878	1,1390
11	1,000	1,1390
12	1,139	1,1390
13	1,297	1,1390
14	1,478	1,1390

- The XIV has 543% range and even 13.9% gear steps.
- For non-assisted bikes we recommend optimizing the gear ratio according to the intended use case and rider preferences.
- For most e-bikes we recommend optimizing the gear ratio to have a comfortable cadence in 10th gear (0.88) at 25km/h.
- Gates Carbon Drive Calculator: [Link](#)

NOTE!

The minimum sprocket ratio of the XIV is 1.9. The minimum front chainring is 32T on E-bike and 30T on a non-assisted bike. Using a lower sprocket ratio or front chainring will void the hub warranty.

The sprocket ratio is determined as follows:

$$r_{sprocket} = \frac{\text{Front chainring tooth count}}{\text{Hub sprocket tooth count}}$$

CHAIN SPROCKET INSTALLATION

NOTE !

The XIV is compatible with 9, 10 or 11 speed chains. Wider chains may contact the HYSEQ actuator and cause damage.

CAUTION !

Using a sprocket with a thickness > 2.3 mm or a non-original lockring may cause the lockring to contact the actuator, damaging the hub.



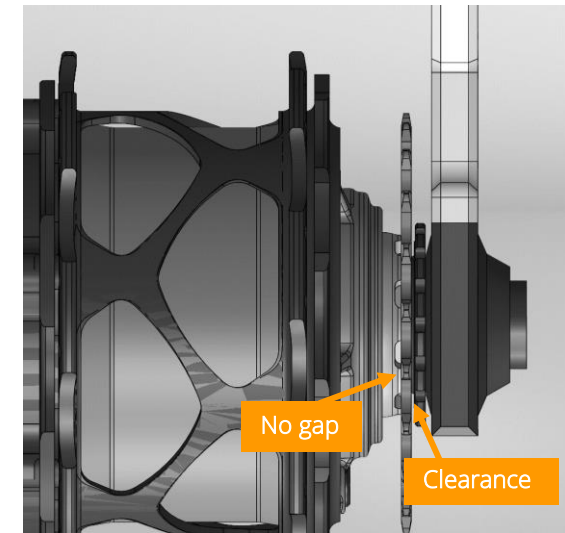
4.1: Install sprocket.



4.2: Install the hub sprocket locking by rotating clockwise.



4.3: Torque the locking to 30 Nm.



4.4: Verify that the HYSEQ actuator has clearance to the lockring and that there is not gap to the input shaft. The sprocket should rotate freely when the actuator is installed.

BELT SPROCKET INSTALLATION

NOTE !

The Kindernay XIV is compatible with offset Gates HG HMN sprockets, such as the [CT1122HMN](#). The belt line is 45.5 mm.

CAUTION !

Using a sprocket with a thickness > 2.3 mm or a non-original lockring may cause the lockring to contact the actuator, damaging the hub.



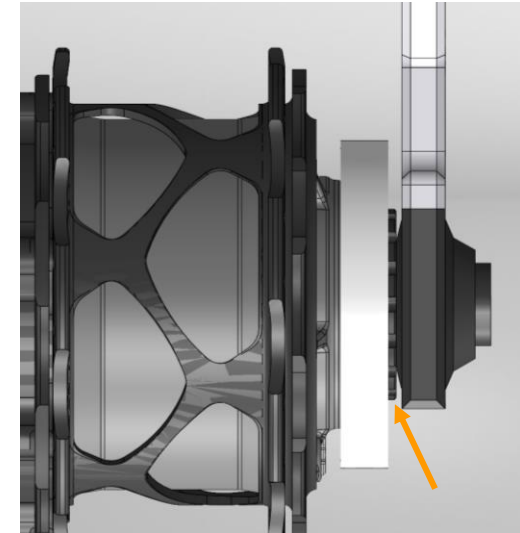
5.1: Install sprocket.



5.2: Install the hub sprocket locking by rotating clockwise.



5.3: Torque the locking to 30 Nm.

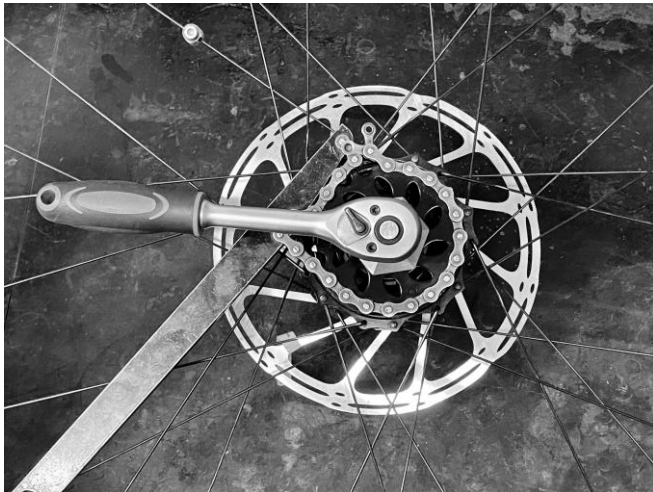


5.4: Verify that the HYSEQ actuator has clearance to the locking. The sprocket should rotate freely when the actuator is installed.

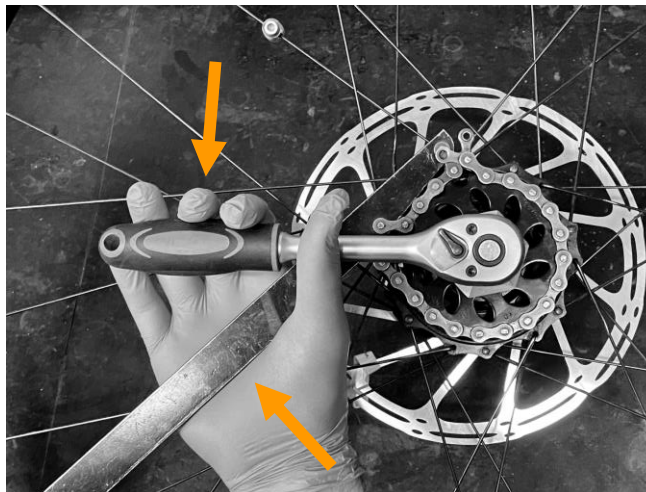
SPROCKET REMOVAL

NOTE !

If attempting to remove a Gates belt sprocket, a Gates Strap Wrench is recommended (<https://www.gatescarbondrive.com/products/tools>).



6.1: Align the chain whip / belt strap wrench and locking tool as shown.



6.2: Loosen the lockring.



6.3: Remove the locking by rotating counterclockwise.

PM TORQUE RETAINER INSTALLATION

NOTE !

The torque retainer will offset the braking caliper inwards. For Boost 148 mm frames, the Boost-specific retainer must be used to get the correct offset.

NOTE !

Only Kindernay 7-bolt rotors are compatible. The torque retainer will add 13 mm to the original frame rotor size.



7.1: Apply Loctite 243 to the torque retainer bolts and brake caliper bolts.



7.2: Install the torque retainer with the bolts as shown.

7.3: Torque to 9 Nm.



7.4: Install the brake caliper according to manufacturer specifications.



7.5: Install the hub and align the brake caliper.



7.6: Torque the caliper bolts to 9 Nm or manufacturer specifications.

HYSEQ INSTALLATION

NOTE !

For hose cutting and bleeding procedures, please see the manual on <https://kindernay.com/support/support-portal/>.

8.1 – First mounting point

When mounting the hose to the frame in the first point after the actuator, make sure there is enough cable length between the point and the actuator, so the wheel can be pulled out of the frame. Use a rubber band and zip tie to secure the fastening point.

8.2 – Second mounting point

The next mounting point must be placed so that the cable can be routed in an orderly fashion when the rear frame of the bike moves through the path of travel. This point is normally located on the front triangle.

To ensure proper cable routing we recommend that the rear shock either is completely removed from the bike, or dismantled in one eyelet. This will make it easier to see what effect the movement of the rear frame will have on the cable. If there is no natural fastening point use a rubber band and zip-tie.

An easy way to ensure that the cable moves correctly is adding slack to the cable in the direction you want it to fold. See picture. Mount the rear shock again after the first mounting point on the front triangle has been fastened.



8.3 – To the handlebars

When mounting towards the handlebars we recommend using fastening points that are original to the frame. If this is not possible, use the included rubber bands and zip-ties. Mount the HYSEQ levers to the handlebar in the preferred position.

8.4 – After assembly check list

- Can the wheel be dismantled from the frame?
- Does the cable move freely in the correct direction under the travel ratio?
- The cable does not interfere with any other function of the bike?

HUB / WHEEL INSTALLATION



9.1: Install the chain/belt on the gearhub sprocket.



9.2: Install the actuator by pressing it on the drive side of the hub.



9.3: Align the torque arm and insert the wheel into frame.



9.4: Install, but do not tighten the thru-axle. Position the actuator in the desired position.



9.5: Tighten the thru-axle according to frame manufacturer specifications.



Correctly installed



Incorrectly installed

9.6: Verify that the torque arm is installed in the retainer, as shown.

CAUTION !

Failure to align the torque arm during hub installation will cause malfunction and damage to the bike frame and components.

CHAIN TENSIONER INSTALLATION

NOTE !

Unless you are installing the gearhub on a bicycle with sliding dropouts or eccentric BB, you will need to install a chain tensioner.



10.1: Mount the chain tensioner to the bike's original drop-out.



10.2: For full suspension bikes: Unbolt or let the air out of the shock. Zip-tie the rear triangle in the maximum travel position.



10.3: Wrap the chain around the front and rear sprocket. Add additional chain links according to your bike type.



10.4: Cut, route and connect the chain.

OIL CHANGE PROCEDURE

CAUTION !

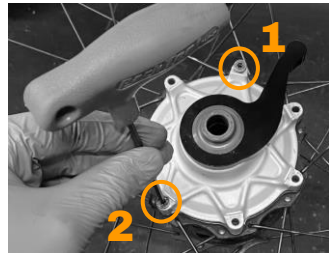
Make sure to remove all braking components before attempting the oil change procedure. Over-filling the gearhub will cause leakage that can damage braking components.

NOTE !

Please collect the used gearhub oil and deliver it to your nearest recycling center.



11.1: Place the wheel against a wall at an angle.



11.2 Remove the SWAP bolts and brake rotor.

11.3: Loosely install two SWAP bolts as shown to retain the gearhub in the SWAP. Do not tighten.

11.4: Remove the oil plug.

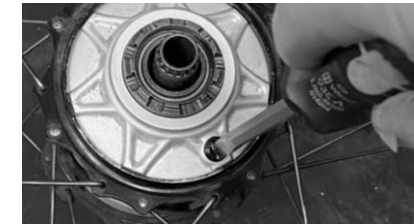


11.5: Position the wheel against the wall at a 45° angle, with the oil plug facing downwards. Let the oil drain for 1-2 hours or more in room temperature.

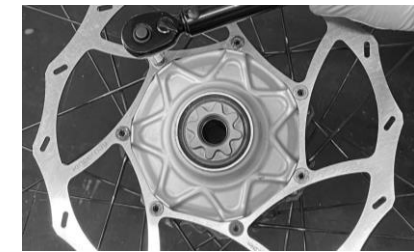


11.6: Turn the wheel around with the oil plug facing upwards.

11.7 Refill the gearhub with 30 ml of Kindernay Velvet Fluid.



11.8: Reinstall the oil plug. Tighten to 2-3 Nm.



11.9: Reinstall the brake rotor according to [Step 1.5](#)

WHEEL BUILDING MANUAL

- For updated wheel building manuals relevant for your SWAP specification, please see our website:

<https://kindernay.com/support/support-portal/>



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Need support?

Contact our support team directly at

support@kindernay.com



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