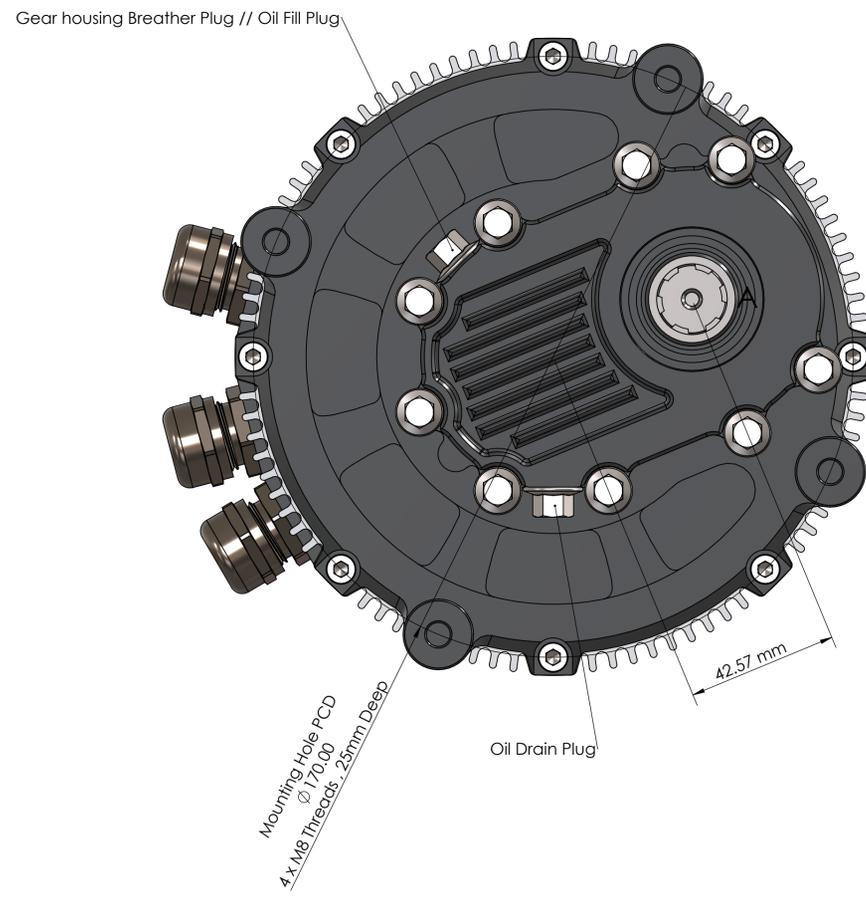
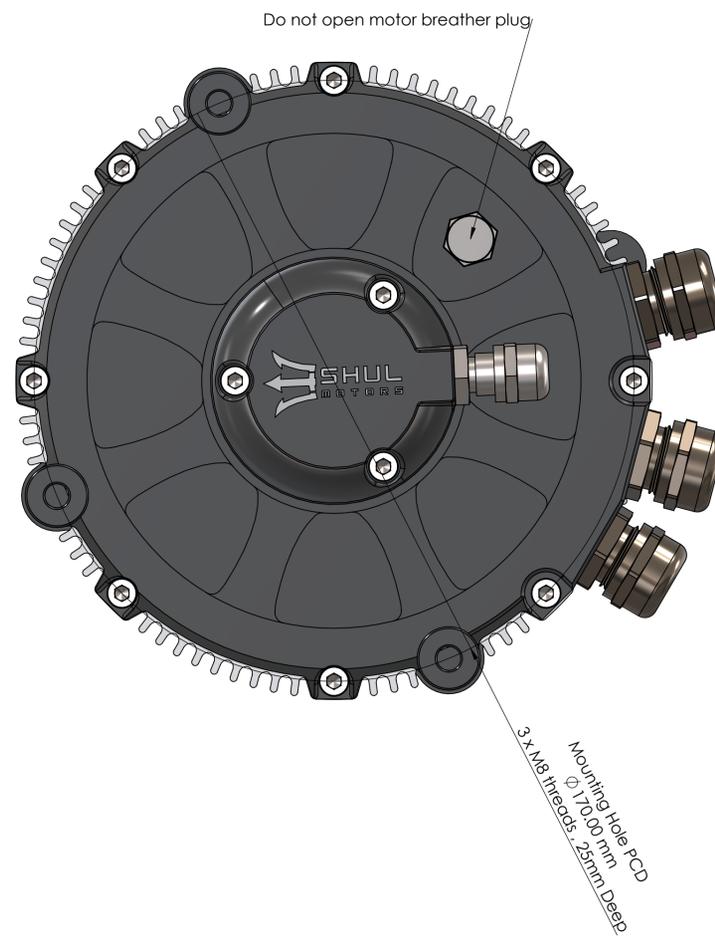


# 3Shul GBX65 Geared Motor Dimensions

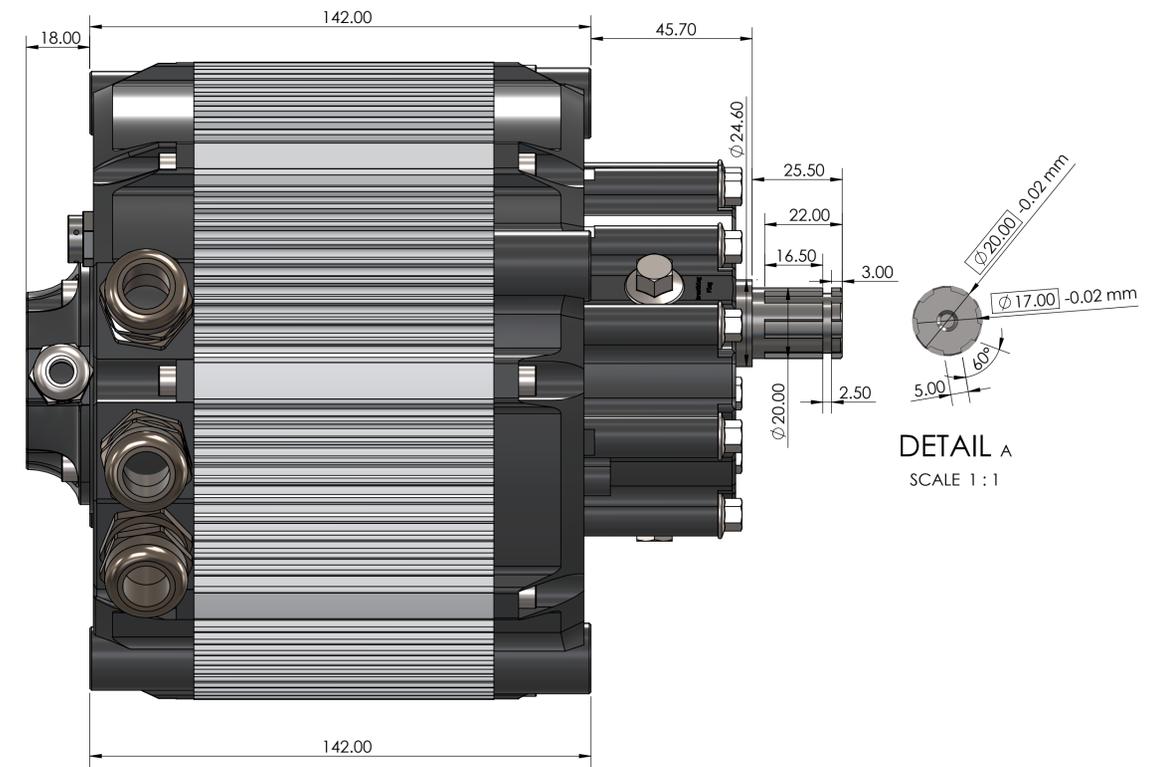
### Front View recommended position



### Rear View

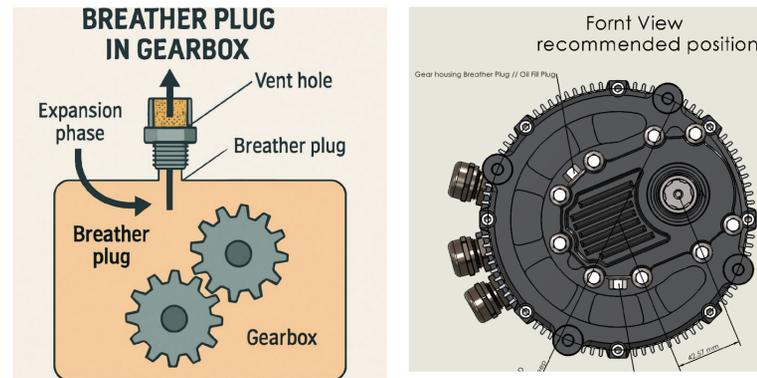


### Side View



## Gearbox Motor Installation Guide

### Mounting Orientation



The gearbox motor must be mounted in the **correct orientation** to ensure proper ventilation and oil pressure balance.

### Correct Mounting Requirement

The **breather plug must always remain in the top direction** when the motor is installed on the bike.

### Reason

The breather plug allows internal pressure inside the gearbox housing to equalize with atmospheric pressure.

If the gearbox is mounted incorrectly:

- Oil may escape from seals or joints
- Internal pressure may build up
- Oil seals may be damaged
- Gearbox lubrication may be compromised

Improper mounting orientation may lead to **oil leakage or seal failure**.

### Gearbox Oil Specification

Use only the recommended oil specification.

#### Recommended Oil Type

- SAE 80W90 Gear Oil

#### Oil Quantity

- 60–80 ml only

⚠ **Do not overfill the gearbox.**

Excess oil may cause:

- Increased internal pressure
- Oil leakage
- Seal damage
- Reduced gearbox efficiency

### Gearbox Oil Filling Procedure

1. Locate the **fill / breather plug** on the gearbox housing.
2. Remove the plug carefully.
3. Fill **60–80 ml** of SAE 80W90 gear oil.
4. Reinstall the plug.

⚠ **Do not overtighten the fill (breather) plug.**

Overtightening may:

- Damage the breather function
- Strip threads in the housing
- Prevent proper ventilation

Tighten the plug **securely but gently**.

### Gearbox Oil Change Schedule

Regular oil replacement is necessary to ensure long gearbox life.

Service Interval	Action
First oil change	After <b>1000 km</b>
Second oil change	After <b>2500 km</b>
Regular oil change	Every <b>3000 km</b> thereafter

Oil changes remove:

- Metal wear particles
- Contaminants
- Degraded lubricant

Failure to change oil regularly may lead to **premature gearbox wear**.

### Phase Wire Connection

The gearbox motor uses **three phase wires of equal length**.

Because the wires are identical, they may be connected in different positions on the controller.

#### Recommended Connection

Connect the **center phase wire** to the **V terminal** of the controller.

The remaining two wires can be connected to **U and W terminals** in any order.

The **U and W wires** may be swapped if needed for installation convenience.

The controller tuning process will determine the correct phase alignment.

### Encoder Connection

Connect the **motor encoder connector** to the controller encoder input port.

Ensure:

- Connector is fully seated
- No bent pins
- Cable is routed away from moving parts or sharp edges

The encoder provides **precise rotor position feedback** required for motor control and tuning.

### Important Notes

⚠ **Do not swap phase wires after controller tuning or programming is completed.**

Once the controller has completed the tuning process:

- Phase order becomes fixed
- Encoder alignment matches the phase sequence

If the phase wires are swapped after tuning:

- Motor operation may become unstable
- Encoder alignment will be incorrect
- Controller retuning will be required

### First Power-On Procedure

1. Lift the rear wheel off the ground.
2. Turn on the bike ignition.
3. After turning on the ignition **for the first time**, open the **controller mobile application**.
4. Follow the instructions in the mobile app to perform the **motor tuning / setup procedure**.

During this setup the controller will:

- Detect motor parameters
- Calibrate encoder position
- Determine correct phase alignment

⚠ **Do not ride the bike before completing the tuning process in the mobile application.**

After tuning is completed:

5. Slowly apply throttle.
6. Verify:
  - Smooth motor rotation
  - No abnormal noise
  - Correct wheel direction

## Gearbox Motor Warranty Policy

### Warranty Coverage

Warranty is valid under the following conditions:

- Manufacturing defects in motor components
- Electrical winding or insulation failure
- Internal rotor or stator defects
- Encoder or internal wiring defects
- Bearing failure under normal operating conditions
- **Internal gearbox gear failure due to manufacturing defect**
- **Gear housing structural failure due to manufacturing defect**

### Warranty Does NOT Cover

Warranty will be void under the following conditions.

#### Improper Installation

- Gearbox mounted incorrectly
- Breather plug not positioned at the top
- Improper motor mounting

#### Incorrect Oil Usage

- Using oil other than **80W90 gear oil**
- Overfilling gearbox oil
- Running gearbox with insufficient oil

#### Lack of Maintenance

- Failure to follow recommended oil change intervals
- Operating gearbox with degraded oil

#### Mechanical Damage

- Crash or impact damage
- Shaft damage due to incorrect drivetrain setup
- External damage to gearbox housing

#### Electrical Misuse

- Operating motor above recommended voltage or current limits
- Incorrect controller configuration
- Continuous overheating

#### Unauthorized Modifications

- Opening motor or gearbox housing
- Modifying internal components
- Replacing gears, bearings, or seals without authorization

#### Improper Use

- Operating the motor in ways not recommended by the manufacturer
- Failure to follow installation or maintenance instructions in this manual