

Consumer Reports NZ Review of ebike motors

Five motor brands dominated our [electric bikes test](#). Here's a summary of what they offer, and what we think of them.

Motor manufacturers usually specify the maximum torque of their motors (in newton metres, Nm). This relates to how much grunt they have for climbing hills – more torque equals better hill climbing. Several brands also supply the maximum support from the motor (a percentage). This is the amount by which the motor can multiply your pedalling effort – 300% support means the motor can put in up to three times the power you supply.

Use the numbers as a guide only. Measurements may not be consistent between brands, and numbers alone won't indicate how the motor feels to ride.

Bosch

All Bosch systems come in Cruise or Sport variants. Cruise assists to 25km/h, Sport to 32km/h.



Urban and trekking motors

- **Active** (40Nm max torque, 250% max support)
- **Active Plus** (50Nm max torque, 270% max support)
- **Cargo** (75Nm max torque, 400% max support)

Trail and mountain biking motors

- **Performance** (65Nm max torque, 300% max support)
- **Performance CX** (75Nm max torque, 340% max support)

Good points

- Very responsive to when you start and stop pedalling
- Excellent “feel” while pedalling
- Cargo, Performance and Performance CX have excellent hill-climbing torque and power
- Excellent adaptive “eMTB” mode on the Performance and Performance CX motors (which adjusts assistance level while you ride)
- Very quiet
- Easy to use, with intuitive interface and controls

Bad points

- Active motor is underpowered on hills
- Gear changes are clunky

Shimano STEPS

All Shimano STEPS systems assist up to 32km/h.



Urban and trekking motors

- **E5000** (40Nm max torque)
- **E6000** (50Nm max torque)
- **E6100** (60Nm max torque)

Trail and mountain biking motors

- **E7000** (60Nm max torque)
- **E8000** (70Nm max torque)

Good points

- Very responsive to when you start and stop pedalling
- E6100, E7000 and E8000 have excellent hill-climbing torque and power
- Smooth gear changes
- Easy to use, with intuitive interface and controls
- Excellent adaptive “trail” mode on E7000 and E8000 (which adjusts assistance level while you ride)

Bad points

- “Pulsey” feel unless pedalling smoothly (better on E7000 and E8000)
- Somewhat noisy
- E5000 is underpowered and hard to pedal when the system is off (or the maximum assistance speed has been exceeded)

Brose (Specialized)



Specialized e-bikes use motors manufactured by Brose. All Specialized motors assist up to at least 32km/h.

Urban and trekking motors

- **1.2 E** (51Nm max torque): fitted to 2020 Turbo Como 3.0 and Turbo Vado 3.0
- **1.2** (85Nm max torque): fitted to 2020 Turbo Vado 4.0
- **1.3** (92Nm max torque): fitted to 2020 Turbo Vado 5.0

Trail and mountain biking motors

- **2.1** (90Nm max torque): fitted to Turbo Levo mountain bikes

Good points

- Very responsive to when you start and stop pedalling
- Excellent hill-climbing torque and power
- Exceptionally smooth gear changes
- Very quiet
- Easy to use, with intuitive interface and controls
- Smartphone app customises assistance settings and records ride data

Bad points

- No significant bad points

Yamaha (Giant)



Giant e-bikes use motors from Yamaha. All Yamaha motors assist up to at least 32km/h.

Urban and trekking motors

- **SyncDrive Life** (60Nm max torque, 300% max support)
- **SyncDrive Sport** (80Nm max torque, 350% max support)

Trail and mountain biking motors

- **SyncDrive Pro** (80Nm max torque, 360% max support)

Good points

- Very responsive to when you start and stop pedalling
- Excellent hill-climbing torque and power
- Smooth gear changes
- Easy to use, with intuitive interface and controls
- Excellent adaptive “auto” assist mode (which adjusts assistance level while you ride)

Bad points

- RideControl One controller has no ride information display (LEDs show assist mode and battery status)

Bafang



Bafang motors assist up to at least 32km/h.

Urban and trekking motors

- **m400** (80 Nm max torque)

Good points

- Responsive to when you start and stop pedalling
- Excellent hill-climbing torque and power
- Smooth gear changes
- Pedalling is very easy when the system is off (or the maximum assistance speed has been exceeded)
- Easy to use, with intuitive interface and controls

Bad points

- No significant bad points