Features & Benefits Workbook

TURBO CREO 2
(CREO SL)

SPECIALIZED

RIDER CARE

ABOUT THIS WORKBOOK

This workbook was created by Specialized Rider Care to offer a theoretical and practical guidebook to the second generation Specialized Turbo Creo SL. Note that the bike is called "Creo 2" throughout this document.

It contains detailed technical data for all bike models, together with practical knowledge about essential features, component compatibility, accessory options, and much more.

The workbook should be used in addition to the bike user manual, the primary resource for any Specialized bicycle.

A printed manual comes with the bicycle. Please periodically check www.specialized.com or contact Rider Care to make sure you have the latest manual version and information.

We also recommend visiting our Support Center to find additional information on your Specialized product.

Lastly, here are some tips for using the workbook:

- use the clickable table of contents to jump to relevant chapters
- use the zoom function to enlarge small text or tables
- use the search function (Ctrl+f) to scan the document for key words
- use the index icon(s) in the left bottom corner of a page to return to the index

Thank you and enjoy your rides,
Specialized Rider Care

01

index.

INDEX

02 experience.

Introduction

‘This Or This’

The all-new Creo 2 delivers incredible capability on any road. 33% more power and monster range meet massive tire clearance and Future Shock 3.0 to create a beast capable of making previously impossible rides possible.

Nasty, steep, broken climbs? It’s super light and super powerful. Big miles in remote locations? Forget range anxiety. Fast and rough road or gravel? Future Shock’s got your back.

Creo 2 may be a monster that defies categories, but with our quietest motor ever, and Turbo’s legendary smooth power delivery it purrs like kitten. It’s you, only faster.

Key Benefits

`THIS OR THIS`			
BENEFIT	**CAPABILITY**	**COMPLIANCE**	**AMPLIFICATION**
INGREDIENT	Range, geometry, and tire clearance to conquer all.	Future Shock 3.0 and massive clearance for wider tires.	More torque, more power, and near silent*. Smooth and natural support with custom firmware.
DETAIL	Progressive gravel geometry with 47c tires (alloy model 38c). Efficient motor and customizable range using the app; optional Range Extender Battery to add 50% range	New Future Shock version on all models for added control. Tire clearance up to 29x2.2" (carbon models).	SL 1.2 motor on all bikes

*compared to Creo SL Gen1 with SL 1.1 motor

03 model overview.

Bike Hero Images

These are just example images, for more visuals, please refer to www.specialized.com

S-Works Carbon model in Forest Green/Carbon/Dark Moss Green Speckle

Quick Profile

The Quick Profile is a condensed overview for the whole bike family. Detailed information about individual areas such as frame, components, e-bike system or accessory compatibility can be found in subsequent chapters.

LINE-UP

- 4 models
  - 3 carbon launch models: S-Works, Expert, Comp Carbon
  - 1 alloy model: E5 Comp Alloy (launches later, 2024/25)
- No more Evo models as the Creo 2 family is gravel-specific; riders have multiple customization options to broaden and/or fine-tune the experience

CHASSIS & GEOMETRY

Carbon frames & forks

All carbon models feature carbon frames and forks made from FACT 11r carbon.

Alloy frame

The E5 Comp alloy model pairs an alloy frame with a FACT 8r carbon fork.

Spacing and frame tabs

All Creo 2 frames use a 142 mm rear end spacing and a fork with 100 mm spacing. Thru axles are 12 mm front and rear.

All frames allow installing a rear rack, low rider front rack and fenders. Wired lights can be retrofitted. The alloy model can be upgraded to a dropper post.

Geometry

The all-new Creo 2 has taken learnings from our endurance road bikes and gravel bikes. We've made the bike more confident inspiring, and gave it do-it-all capability by increasing the reach and front-center, allowing riders to use a shorter stem for more controlled steering. We've also lowered the bottom bracket and slackened the head-tube for that stable and confidence inspiring handling we are known for on our gravel bikes.

SL OPERATING SYSTEM

Creo 2 uses the Turbo SL System of the latest generation, featuring these main components on all models:

- Specialized SL 1.2 motor
- 320 Wh internal battery
- Range Extender compatible (w/ 220 mm road cable)
  - S-Works model comes stock with 1 Range Extender and matching cable
- MasterMind TCU display
- Wired handlebar road remote (not installed on handlebar out of box)

Quick Profile

COMPONENTS (CONTINUED)

Future Shock

- S-Works / Expert: Future Shock 3.3 (damped, tunable, on-the-fly compression)
- Comp Carbon: Future Shock 3.2 (damped, tunable, pre-set compression)
- Comp E5: Future Shock 3.1 (undamped, tunable)

Drive-train

- 1x12 SRAM drive-trains with 10-50 or 11-50 cassettes and 44t chainrings
- Crank lengths ranging from 165 mm-175 mm, based on frame size

Brakes

- SRAM 2-piston brakes
- Centerlock rotors, 180 mm front, 160 mm rear

Wheels

- 700c/29" wheels front and rear with 142 mm rear spacing and 100 mm front spacing.
- All wheels can be run tubeless

Tires

- Carbon bikes: Tracer Pro 47c, folding bead, tubeless ready (2BR), 60 TPI casing, Gripton compound
- E5 alloy model: Pathfinder Pro 38c, folding bead, tubeless ready (2BR), 120 TPI casing, Gripton compound

Quick Profile

COMPONENTS (CONTINUED)

Handlebars

- Style: Gravel drop bars with 103 mm drop, 70 mm reach and 12º flare
- Material: carbon for S-Works, alloy for all other models
- Widths: dependent on frame size, ranging from 380 mm - 440 mm

Stem

- Future Shock stems
- Computer mount interfaces in all stem faceplates (Barfly mount only supplied with S-Works model)
- Lengths: dependent on frame size, ranging from 60 mm - 100 mm

Bar tape

- Carbon models: Supacaz Super Sticky Kush, black
- E5 Comp alloy model: Roubaix S-Wrap, black
- All models: Bar tape not wrapped (retailer/rider can decide on position of controls and road remote buttons)

Seatposts

- Diameter: 27.2 mm (all models)
- Type: dropper posts with 75 or 50 mm travel on all carbon models, rigid carbon seatpost on alloy model (dropper retrofittable)

Saddle

- Power saddles on all models with SWAT mounts (e.g. for Stix rear light)
- Rails: S-Works features 7x9 mm carbon rails, all other models 7x7 mm rails, steel or titanium
- Saddle widths: 155 mm (49 and 52 frames) and 143 mm (54 frames up)

Key Specifications (MY24)

This table is subject to change without notice. For complete and most recent model year specifications, please visit www.specialized.com.

	S-WORKS CARBON	EXPERT CARBON	COMP CARBON
FRAME	Fact 11r Carbon		
FORK	Fact 11r Carbon		
FUTURE SHOCK	Future Shock 3.3		Future Shock 3.2
MOTOR	Specialized SL 1.2		
INTERNAL BATTERY	Specialized SL1-320		
RANGE EXTENDER BATTERY	Included (w/ carbon Zee Cages, 220 mm road cable and retention band)	Compatible, not included	
USER INTERFACE	Specialized MasterMind TCU		
REMOTE	Road Remote (2 buttons)		
DRIVE-TRAIN all SRAM Eagle 12spd 1x drive-trains	SRAM RED AXS / X01 / XX1 SHIFT: RED ETAP AXS RD: XX1 AXS CASS: X01 (XG 1295), 10-50 CHAIN: XX1, black	SRAM RIVAL AXS / GX / NX SHIFT: RIVAL ETAP AXS RD: GX AXS LUNAR CASS: NX (PG1230), 11-50 CHAIN: GX, silver	SRAM APEX AXS / NX / SX SHIFT: APEX ETAP AXS RD: X1 AXS CASS: SX (PG-1210), 11-50T CHAIN: NX, silver

Key Specifications (MY24)

This table is subject to change without notice. For complete and most recent model year specifications, please visit www.specialized.com.

	S-WORKS CARBON	EXPERT CARBON	COMP CARBON
BRAKE (CALIPER / DISC) all SRAM 2-piston brakes with 180/160 mm center lock rotors and steel-backed organic brake pads	**SRAM RED** Rotors: SRAM DB, CLX, Centerline, rounded	**SRAM Rival** Rotors: SRAM DB, Centerline, rounded	**SRAM Apex** Rotors: SRAM DB, Centerline, rounded
WHEELS	**Roval Terra CLX**	**Roval Terra C**	**DT Swiss G540 rims w/ Specialized hubs**
TIRES	**Tracer Pro 47c**		
SEATPOST	**SRAM Reverb AXS** (dropper)	**Tranz-X** (dropper)	

Bike Weights (MY24)

Deviations for same size/model can occur, e.g. due to paint scheme and tire tolerances.
All bikes weighed with internal battery. Range Extender and cable add about 1.2 kg / 2.6 lbs.

MODEL	APPROX. BIKE WEIGHT (SIZE 56*, W/O PEDALS)
S-Works Carbon	13.1 kg / 28.9 lb
Expert Carbon	14.3 kg / 31.5 lb
Comp Carbon	14.5 kg / 32.0 lb

*the weight increase from one frame size to another ranges between 40 and 70g

Bike Sizing

All Creo 2 models are available in six frame sizes: 49, 52, 54, 56, 58 and 61 cm. The frame size labelling convention is based on a sizing tradition in the world of drop bar bikes and is not an actual seat tube measurement. Stack and reach are the most important geometry parameters (see geometry table).

The shown sizing table is a base reference for frame size selection per rider height. If you choose up or down, will depend on your personal preferences such as ride style and preferred bike characteristics.

Ensuring that your Creo 2 is properly fit to you is an important step in preparing for your first ride.
Your local Specialized Retailer will support you with a basic fit so that your rides are comfortable and efficient.

Specialized also offers Retül Fit, a data-driven bicycle fitting tool designed to improve comfort, prevent injury, and increase performance. Ask your retailer for details.

FRAME SIZE	BODY HEIGHT RECOMMENDATION	CORRESPONDING SIZE CREO SL GEN1
49	152 - 163 cm 5'0" - 5'4"	XS
52	163 - 170 cm 5'4" - 5'7"	S
54	170 - 178 cm 5'7" - 5'10"	M
56	175 - 180 cm 5'9" - 6'0"	L
58	180 - 188 cm 5'11" - 6'2"	XL
61	188 - 196 cm 6'2" - 6'5"	XXL

Bike Geometry (experience)

We started with our super light FACT 11r carbon, then gave the all-new Creo a geometry that's ideal for dreamy days on the road, rough days in the gravel, and everything in between.

Designed to provide a confident and nimble ride on smooth pavement, broken roads, and even rough gravel, Creo's progressive geometry defies categories.

Compared to its predecessor, Creo 2 has a slacker head tube angle, a lower bottom bracket, a shorter stem, and is tuned specifically for high-volume tires to rail pavement corners and deliver stability on rough terrain.

To set riders up for the most comfort for those longer rides, Creo 2 has more stack, providing a more endurance-focused position — taking some weight off the hands, neck, and shoulders

Bike Geometry Carbon Frame (data)

This geometry table shows the standard geometry for the carbon bicycles as shipped.

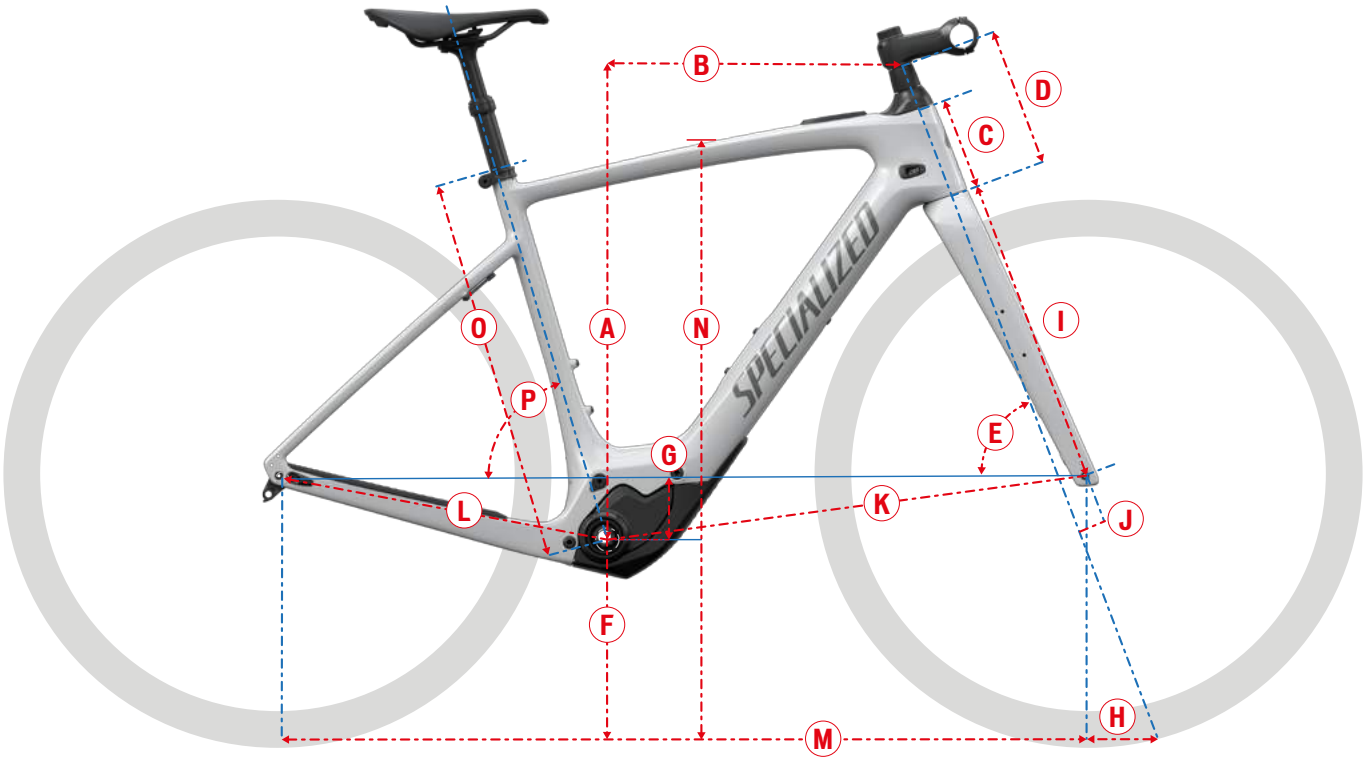
	FRAME SIZE	49	52	54	56	58	61
A	Stack (with 0 mm HS cover) (mm)	578	578	595	607	638	663
B	Reach (with 0 mm HS cover) (mm)	365	374	383	392	401	410
C	Head tube length (mm)	90	90	108	120	153	180
D	Head tube length (with Future Shock) (mm)	140	140	158	170	203	230
E	Head tube angle (°)	71					
F	BB height (mm)	270					
G	BB drop (mm)	80					
H	Trail (mm)	67					
I	Fork length (full) (mm)	405					
J	Fork rake/offset (mm)	55					
K	Front center (mm)	600.1	609.0	623.8	636.6	656.2	673.8
L	Chainstay length (mm)	435					
M	Wheelbase (mm)	1022	1031	1046	1059	1079	1097
N	Bike standover height (mm)	731	743	773	793	824	852
O	Seat tube length (mm)	410	430	470	500	530	560
P	Seat tube angle (°)	74	74	74	73.5	73.5	73
	Crank length (mm)	165	170	172.5	172.5	175	175
	Handlebar width (mm)	380	400	420	420	440	440
	Stem length (mm)	60	70	80	90	100	100
	Saddle width (mm)	155	155	143	143	143	143
	Seatpost max insertion (mm)	265	285	300	300	300	300
	Seatpost min insertion (mm)	75					
	Top tube length (horizontal) (mm)	531	540	554	572	590	613

Bike Geometry Alloy Frame (data)

This geometry table shows the standard geometry for the alloy bicycles as shipped.
Information will follow closer to the alloy launch in 2024.

Bike Geometry (schematic)

This schematic shows how the geometry numbers, as referenced in above table, are measured.



10

turbo sl operating system.

Introduction

Creo 2 uses the SL Operating System with the SL 1.2 motor, introduced in May 2023 with Levo SL.

The Specialized SL system offers the perfect balance by eliminating any need to compromise between power, weight, range, connectivity and ride quality.

The following system overview presents essential information about the main system components.

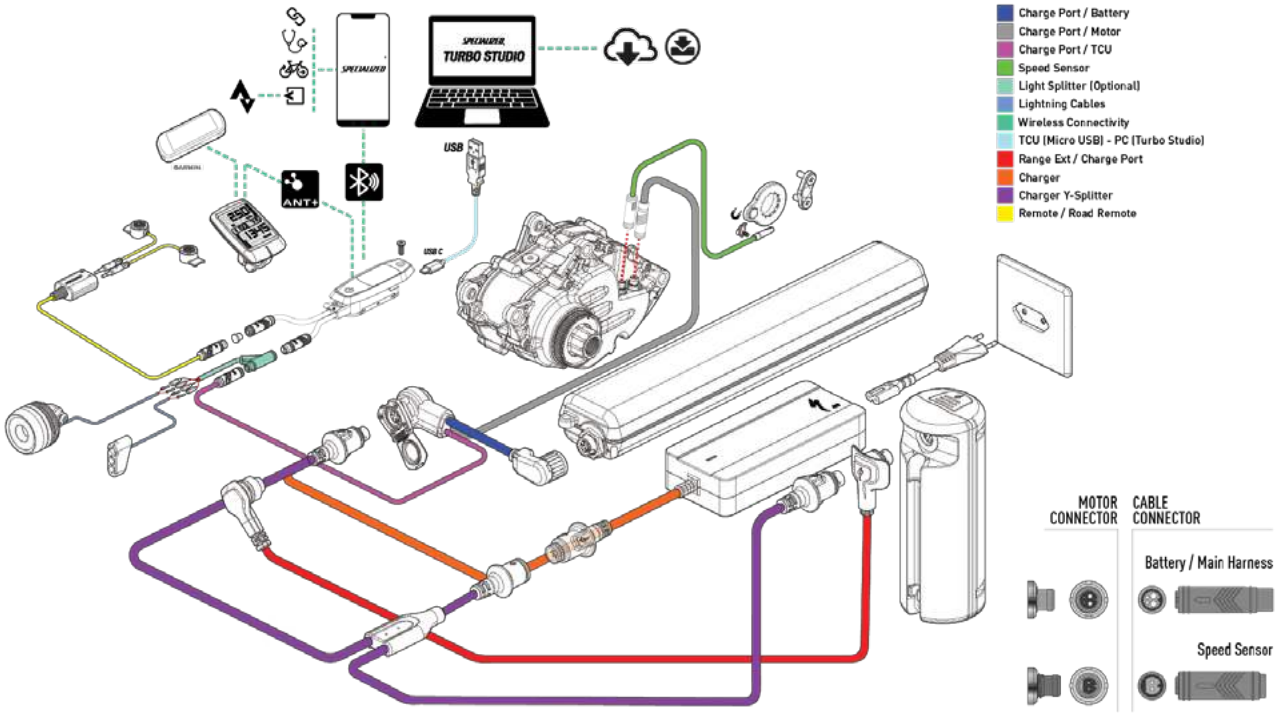
Retailers can access more details about the SL e-bike system by referring to the workbook “Turbo SL System: Features & Benefits” in the Turbo Studio Knowledge Base.

System Schematics

CONNECTION OVERVIEW

The System schematics show how the electronic components are connected within the system. Note that wired lights are optional.

CABLE ROUTING - SYSTEM SETUP (LIGHTING)



CREO SL SCHEMATIC PAGE 18

Theory of Operation

BASIC SYSTEM WORKING PRINCIPLE

Three components are part of the CAN bike system communication (components 'talk' to each other):

1. MasterMind TCU (master of the bike, also allowing external communication)
2. Motor
3. Batteries (Internal and/or Range Extender)

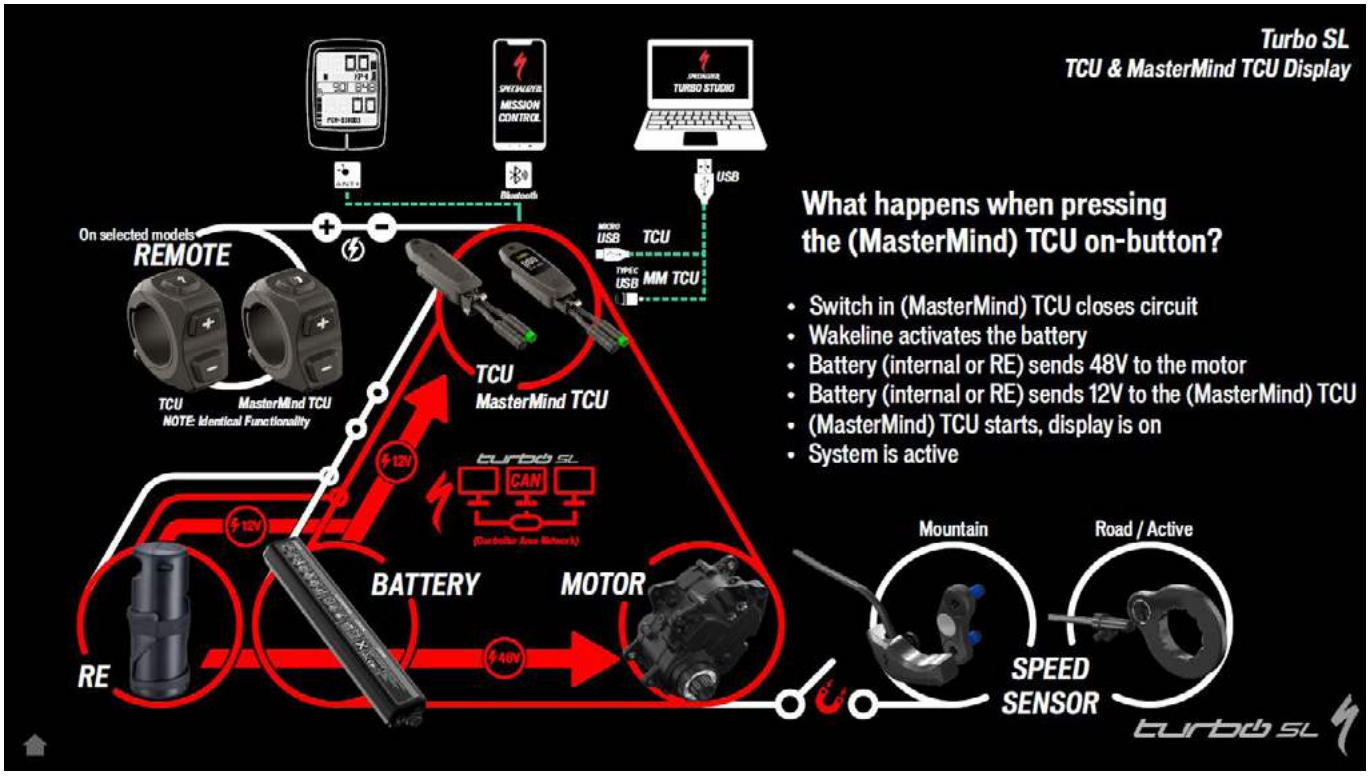
Speed Sensor and remote act as switches and are not part of the bike communication as such.

This happens when the power button on the MasterMind TCU is switched on:

- Switch in MasterMind TCU closes wakeline
- Wakeline activates battery (wakeline goes from TCU to battery)
- Battery sends 48V to motor and 12V to MasterMind TCU (12V come directly from battery)
- MasterMind TCU starts, LEDs light up (even if motor is not connected)
- SL system is active

Here are two simple tests, if an SL bike does not turn on:

1. Connect the MasterMind TCU to a powered USB-C cable. Reason: the internal MasterMind TCU battery needs to be sufficiently charged to send the wakeline signal to the battery
2. Connect a RE battery to the charge port. Reason: just as the internal battery, the RE can send 12V to the display to power the system; if the bike starts with the RE only, the connection from the main harness to the integrated battery is faulty or the internal battery itself has an issue.



Normal System Behaviour

DEFINITION

"Normal System Behaviour" refers to behaviour that is intended per design and would not be classified as a system issue.

OVERVIEW

The table lists some Normal System Behaviour for the SL System using the SL 1.2 motor. Please refer to your local Specialized retailer or Rider Care Team for questions or further information.

BEHAVIOUR	DESCRIPTION	NOTE / TIP
Motor power reduction based on rsoc	Between 15% and 20% remaining battery state of charge (rsoc), the system starts reducing motor support to ensure uninterrupted support at lower charge and voltage levels.	The point of reduction depends on some variables such as battery combination, discharge sequence, current, voltage, cell temperature, start rsoc of each battery, etc.
Motor power reduction with "RE first / only"	When only discharging the Range Extender battery (RE), motor power will be limited to 90%, even with a fully charge RE.	• Power reduction based on rsoc still applies • Use the default parallel discharge mode whenever possible.
Display shows less rsoc % after 2+ hours of inactivity	When turning on the bike after more than two hours since last use, the rsoc shown on the display or in the app can differ from the one displayed before powering the bike off. The difference can be up to 6%.	Batteries are in standby mode for 2h from the moment the bike is turned off and before they go into deep sleep. During this time, batteries recalibrate themselves and adjust soc based on internal parameters; the BMS in the batteries will use some energy during their standby time.
Charging with Y-cable	There are some special charging rules out of which these are key: • Only simultaneous charging of one internal battery and one RE is possible • 5-7 secs waiting time till charging starts	• Use Y-cable as intended • Always confirm that charging was initiated after connecting the charger

SL 1.2 Motor

ESSENTIALS

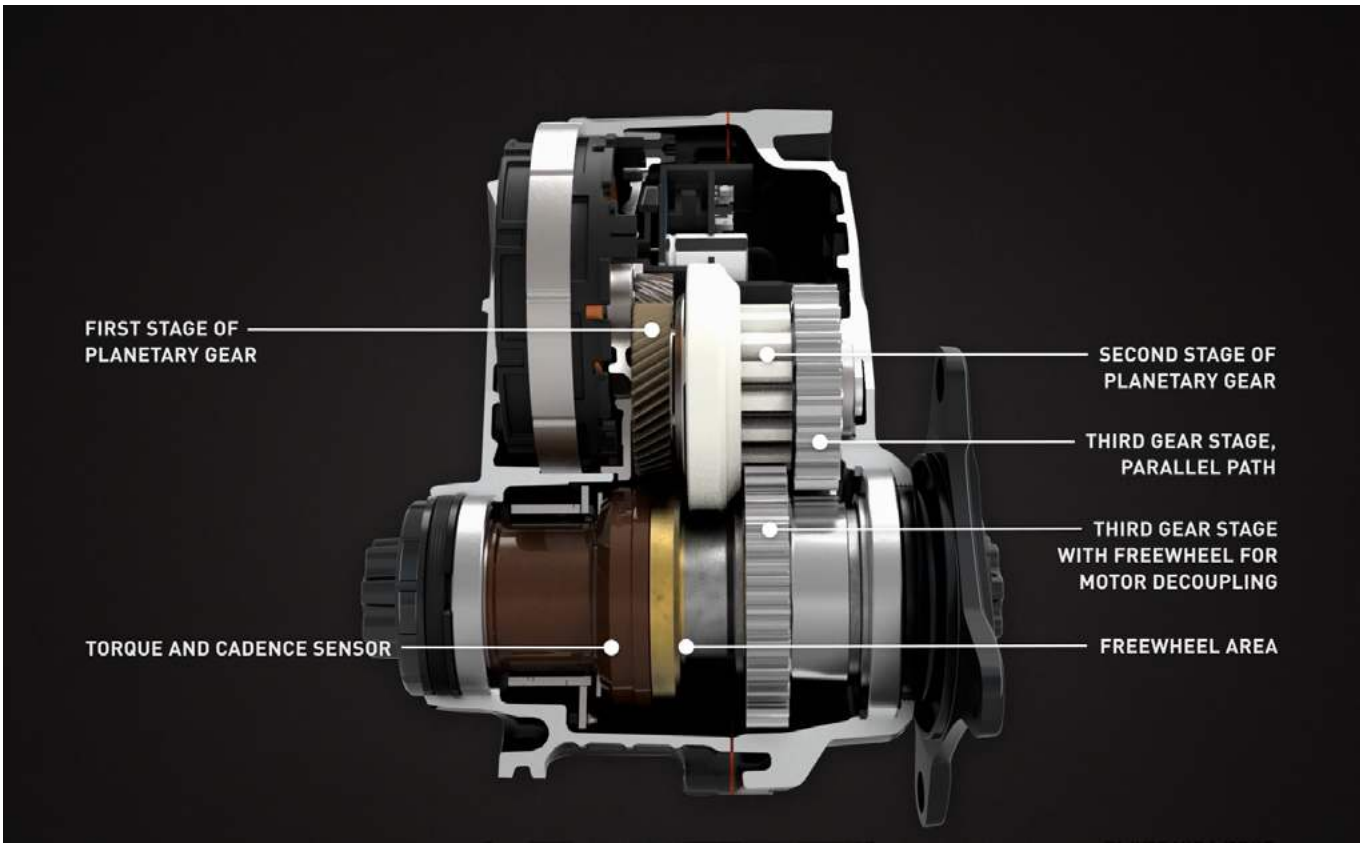
All Creo 2 models feature the Specialized SL 1.2 motor.

	KEY FEATURES	KEY BENEFITS
SL 1.2 MOTOR	• Custom firmware • 50 Nm peak torque • 320 W peak mechanical watts • High efficiency, especially cadence 75 rpm and higher • Only 1.95 kg	• Natural and smooth support • Excellent combination of power, weight, size and ride quality • Strong support over broad cadence range, especially between 70 and 100 rpm • Low operating noise (perceived reduction of 34-45% compared to the SL 1.1 motor) • Decoupling mechanism (no extra resistance when not active) • IP 67 rating, fully weather-proof

MOTOR INTERNALS

SL 1.2 Motor

MOTOR INTERNALS (CONTINUED)



Motor Tune Parameters

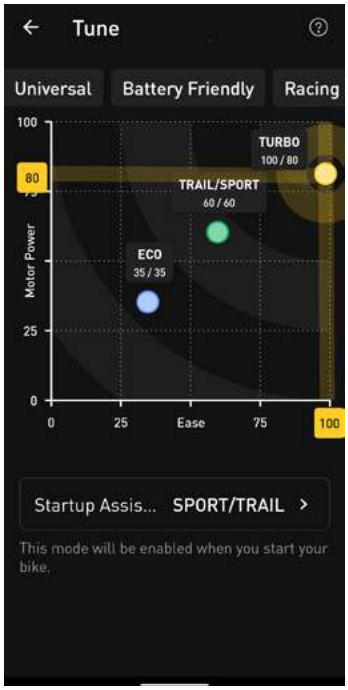
SUPPORT / PEAK POWER (MC) & MOTOR POWER / EASE (SPECIALIZED APP)

This table explains the terminology for the motor tune parameters, as used in both apps.Note that Mission Control will be sunset in the course of 2024, making the Specialized App the go-to application for all Turbo riders.

APPLICATION	TERMINOLOGY	EXPLANATION
MISSION CONTROL	**Support** & **Peak Power** Support: 100% Peak Power: 80% **(example)**	**Support / Ease** determines how hard you have to work to get the available motor power. 100% results in the least effort possible. **Peak Power / Motor Power** determines how much motor power is available. 100% offers maximum motor power. Reducing motor power increases range most effectively.
SPECIALIZED APP	**Ease** & **Motor Power** Ease: 100% Motor Power: 80% **(example)**	

SCREEN EXAMPLES

To change the default mode settings in the app, drag the mode button to the desired point in the grid. The in-app help features animations explaining the effect of changing “Motor Power” and “Ease”.



Default Support Modes

This table explains the default support mode settings for Creo 2. Mission Control and Specialized app allow riders to customize the default settings based on their preferences.

DEFAULT SETTING (SUPPORT/PEAK OR EASE/MOTOR POWER)	PURPOSE	REQUIRED RIDER POWER FOR FULL MOTOR SUPPORT* @ RPM 80
35/35 **DEFAULT ECO**	• Setting for long range and lots of elevation • Great for the fitness-minded rider • Suitable for group rides with analog bikes	approx. 170 watts
60/60 **DEFAULT SPORT**	• Capable setting for steeper uphills and more speed • Combines control and power on gravel • Good combination of power and range	approx. 200 watts
100/80 **DEFAULT TURBO**	• 80% motor power allows for easy climbing and gives similar range for riders coming from the less powerful SL 1.1 motor • Easy power on demand • Great for steep climbs or whenever low effort is desired	approx. 70 watts

*Here, full motor support refers to the motor power available in the respective setting. The available power is dictated by the "Peak Power" or "Motor Power" setting; example for default SPORT 60/60: the rider can get 60% of the motor power with 200 watts of own input.

Suggestions on Custom Mode Settings

Using the app, the default mode settings can be customized to suit your personal preferences. Here are a few examples. Keep the definitions of "Support/Ease" and "Peak Power/Motor Power" in mind.

CUSTOM SETTING (SUPPORT/PEAK OR EASE/MOTOR POWER)	PURPOSE & BENEFIT	REQUIRED RIDER POWER FOR FULL MOTOR SUPPORT* @ RPM 80
35/100	• Workout and power-on-demand mode • More effort rewarded with more motor power • Long range possible, but dependent on rider input • Approx. 170 watts of rider input at 80 rpm needed for 35% of motor power, same as Eco 35/35 • Ability to accelerate shortly or tackle steep ramps • Preset suggestion: 35/100 - 55/100 - 75/100	approx. 470 watts (35/100) approx. 352 watts (55/100) approx. 235 watts (75/100)
100/35	• Cruise mode for relaxed riding flat and hilly • Long range with reduced motor power • Lowest input possible to get the available motor power	approx. 35 Watts
100/50	• Low intensity rides with increased range versus std. Turbo • Half the theoretical motor power available • Requires low input to get motor power	approx. 50 Watts
70/50	• Mid intensity rides with increased range versus std. Turbo • Half the theoretical motor power • Reduced "Support / Ease" requires more own input to get available motor power	approx. 135 watts
90/60 (LIGHTER RIDER) 60/90 (HEAVIER RIDER)	Suggestion for two riders of different body weight and varying rider input. If they wanted to ride together, especially uphill, they can try "inverted" values for Support/Ease and Peak Motor Power. • Lighter rider with less watts and better power-to-weight ratio: higher ease/support, lower peak/motor power • Heavier rider with more watts and weight disadvantage: lower ease/support, higher peak/motor power	90/60: approx. 85 watts 60/90: approx. 135 watts

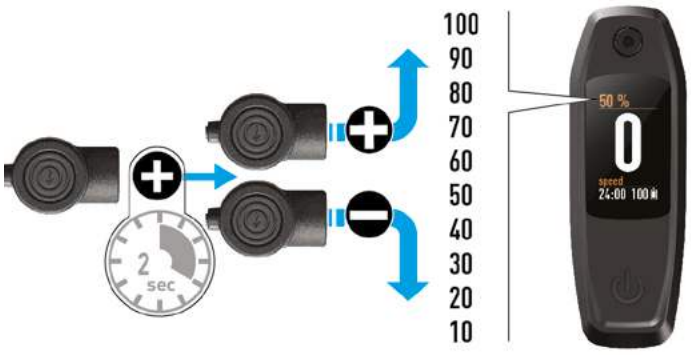
Micro Tune

Micro Tune allows adjusting the motor support settings directly through the handlebar remote, in equal increments of 10% for both "Support/Ease" and "Peak Power/Motor Power". This function is a quick and easy way to adjust the motor performance based on rider needs. Once in Micro Tune mode, going up or down in increments of 10% can be done without looking at the display or remote. See manual for further information.

MICRO TUNE SETTING	RIDER POWER FOR FULL MOTOR SUPPORT @ RPM 80
10/10*	approx. 67 Watts
20/20	approx. 117 Watts
30/30	approx. 151 Watts
40/40	approx. 185 Watts
50/50	approx. 200 Watts
60/60	approx. 200 Watts
70/70	approx. 185 Watts
80/80	approx. 168 Watts
90/90	approx. 134 Watts
100/100	approx. 85 Watts

Micro Tune default is 50%

* first number = Support or Ease in %; second number = Peak Power or Motor power in %



To activate Micro Tune, keep the "+" button pressed for about 2 seconds, then move up or down by shortly pressing "+" or "-".

Internal Battery

ESSENTIALS

All Creo 2 models feature the identical internal battery.

Naming / Part number

- Model: SBC-B15
- Service Part: S196800015

Design capacity

320 Wh (6.9 Ah x 48 V)

Weight/dimensions

- Approx. 1.8 kg
- 400 x 50 x 75 mm)

Removal

Only removable by authorized Specialized Retailers; only after removing motor (15 minutes)

Charging

- Only compatible with supplied 48 V charger
- Charge port in frame
- Full charge: 2h 55 min
- Charges with 2.5 A +/- 0.3A
- Fast charging achieved with Y-cable, if internal battery and Range Extender battery can be charged simultaneously (charge with 3.0+/-0.3A = 1.0+/-0.1A (RE) + 2.0+/-0.2A (Int.)

Warranty

Specialized guarantees that the battery pack holds at least 75% capacity after 300 charge cycles or 2 years; one charge cycles represents one full charge (e.g. 320 added watt hours make one charge cycle).

Range Extender Battery

ESSENTIALS

All Creo 2 models are compatible with SL Range Extender batteries.

- S-Works models come with 1 Range Extender and required hardware
- REs need to be installed at the seat tube to be connected to the system

Naming / Part number

- SBC-B16
- Battery part number: 98920-5640 (RE battery, Zee cage and retention band) - Range Extender batteries ship without the connecting cable
- Connection cable: 98920-5655 (220 mm "Road" cable for Creo 2, Vado SL, Como SL)

Design capacity

160 Wh (3.35 Ah x 46.8 V)

Weight and dimensions:

- Approx. 1.0 kg (excl. 70 g for 220 mm cable)
- 200 mm high, 75 mm in diameter

Installation & removal

See Range Extender section in "Accessories"

Charging

- Only compatible with supplied 48 V charger
- Standard charge time/single charging: 3h 25 min (Charges with 1.0 A +/- 0.2A)
- Faster charging with Y-cable, charging internal battery and Range Extender battery simultaneously (charge with 3.0+/-0.3A = 1.0+/-0.1A (RE) + 2.0+/-0.2A (Int.)

Warranty

As internal battery

RE / Charge Port

ESSENTIALS

All Creo 2 models us the "MTN" charge port to reliable seal the charge port when riding in dirty conditions.

- Spring-loaded lid with locking mechanism for closing
- Stays open by default, needs to be actively closed
- Construction with higher sealing rate, needs to be left open to dry out
- Should stay open after wet rides to dry out
- Needs to be closed when RE / charger is not connected
- Sealing cup made of TPE (Thermoplastic Elastomer)

Charge port closed (riding & washing)

Charge port open (charging, connecting RE, drying/cleaning)

Display (MasterMind TCU)

ESSENTIALS

All Creo 2 models feature the MasterMind TCU.

- Color TFT-screen, customizable
- Gorilla glass for durability
- Master for bike-control, on/off, etc.
- Mode cycling via wired remote
- ANT+/Bluetooth (Mission Control, etc.)
- USB-C cable connection (Turbo Studio, charging the internal display battery to start bike)
- Pressure sensor for barometric measurement
- Back-up battery: fully integrated (kept charged via system, USB-C charging optional)
- On-screen messages in case of system errors
- Event/Error log

the display set-up menu allows adjusting some settings and pairing BLE/ANT+ devices to the display, e.g. heart rate belts

MasterMind displays are capable of showing notifications and error message - riders are referred to the app to see ‘User Actions‘ for live errors

Road Remote

ESSENTIALS

All Creo 2 models ship with the two-button road remote.

- Custom placement possible - there are multiple options
- Remote manual shows connection, routing and possible button locations
- Connected to junction box at MasterMind TCU
- Functions:
  - switch modes
  - switch display screens
  - enter Micro Tune
  - reset display values
  - enter display setup menu

Possible remote location, inside hood

Possible remote location, top bar section

Possible remote location under hoods - leave a sufficient gap for hands (3-4 cm)

Remote routing to junction box under display

Speed Sensor System

ESSENTIALS

The speed sensor system provides the motor with the needed speed signal from the rear wheel. This is one condition for having motor support.

Parts

- Magnet to provide the signal - located in the rotor lock ring on the rear wheel.
- Sensor cable to receive the signal - located in the non-drive-side chainstay, connected at the motor

Compatibility

Both magnet types are compatible with the speed sensor system. If it is intended to use a rear hub with a 6-bolt rotor interface, the 6-bolt speed sensor magnet needs to be installed.

Magnet part numbers

- S226800004: Centerlock speed sensor magnet
- S194200016: 6-bolt speed sensor magnet, low profile, w/bolts

Maintenance

Regularly clean the speed sensor magnet on the rear wheel with a cloth to remove all contamination.

If cleaning is neglected, brake dust with metal parts can collect and cause system issues, such as false speed readings and motor support issues.

Speed Sensor magnet, centerlock design

Speed Sensor in non drive-side chainstay

6-bolt speed sensor magnet on second wheelset

Regularly clean the speed sensor magnet

Connectivity

This is an overview of the most important connectivity options to Turbo SL operating system.

CONNECTIVITY TOOL	PURPOSE / KEY FEATURES	CONNECTION METHOD
MISSION CONTROL / SPECIALIZED APP	Ride recording, ride data and analytics, performance tracking, Turbo e-bike management, and much more.	Bluetooth
BICYCLE NAVIGATION SYSTEMS	All ANT+ devices/bicycle computers can be connected to the e-bikes sensors for speed, cadence and rider power. Many bike-specific devices feature dedicated menus that allow displaying e-bike data.	ANT+
HEART RATE BELTS	1. Monitor your live heart rate on MasterMind TCU 2. Use Smart Control based on heart rate (Mission Control / Specialized app)	1. ANT+ or Bluetooth (pair belt to MasterMind TCU) 2. Bluetooth Note that Smart Control based on heart rate requires pairing a Bluetooth heart rate belt in Mission Control / Specialized app
ANT+ RADAR	Use a wireless Garmin radar at the seatpost to get audible and visible alerts on your MasterMind TCU to warn you of approaching vehicles. Examples: Varia™ RVR315 Varia™ RTL515 Varia™ RCT715	ANT+ (pair radar to MasterMind TCU)

Firmware Updates

INITIAL FIRMWARE UPDATING DURING BIKE BUILDING (RETAILERS)

All Creo 2 bikes are shipped with their motor assist speed restricted to 15 kph. This speed limit restriction can only be adjusted through an initial bike firmware update at an authorized Specialized retailer, using a wired connection to Turbo Studio.

- Display shows update notification on MasterMind TCU screen (turtle symbol + text)
- Using Turbo Studio, firmware updates must be carried out to apply the final firmware and country speed limit
- Mission Control connection is only possible after running initial updates

KEY MOMENTS TO CHECK FOR LATER FIRMWARE (RETAILERS)

Apart from updating the bike during the bike-building process, please check for firmware updates in Turbo Studio at these moments in time:

1. Before bike-handover to rider (new firmware may become available between bike building and handover to rider)
2. Whenever a rider brings a bike into the store
3. Whenever replacing the frame or one of these Turbo system components: motor, display, battery
   - Run 'Component Change' in Turbo Studio
   - Battery replacement does not require a Component Change, but updating the battery firmware is needed

OVER-THE-AIR UPDATES (RIDERS)

After initial updating by the retailer, riders can usually run all coming display firmware updates through the app, over-the-air. SL motors, and Turbo batteries in general, cannot be updated through the app. If riders cannot update a component, but see a later version in the app, they get a notification to turn to the retailer to update these components.

11

range & ride time.

Managing & Optimizing Range

MANAGING RANGE

- Always start with fully charged battery/batteries
- Start with conservative settings, allowing for more assist at end of ride
- Monitor consumption (e.g. xy % used per 500 Hm) and adapt
- Use Mission Control / Specialized app: Change the default mode settings to customize range (especially lower Peak Power / Motor Power results in greater range)
- Use Smart Control

OPTIMIZING RANGE

- Stay in a smooth cadence spectrum for optimal system efficiency (rpm 75 +)
- Avoid unnecessary weight and drag
- Use one or more Range Extender(s) to increase range (plus 50% per Range Extender)
- Keep bike maintained (drivetrain, tire pressure, etc.)
- Minimize tire rolling resistance (run tubeless, increase pressure on hardpack)
- Keep bike and batteries in moderate temperature spectrum
- Cold season: do not let bike and batteries cool down before riding, especially not to below 0° C / 32° F
- Avoid letting the bike sit in the sun

About Range Data

Range and ride time of e-bikes depend on multiple variables, based on differing conditions for rider, bike and environment. Consequently, range will be individual for each rider and ride. In order to offer some real-world orientation, we tracked Creo 2 rides and used the data to compile range tables for all three speed limits.

These are the parameters for the tracked ride(s):

- Same rider with same bike (80 kg rider / 14.8 - 15.7 kg bike)
- Natural ride style
- Use of default motor settings for all three ride modes (Eco, Sport, Turbo)
- Same mode used through entire ride
- Motor support active when riding flat or up (with 20/28 mph also active on moderate descents)
- Internal battery drained from 100% to at least 5%
- Adjusted rider input between 150 and 190 watts
- Average cadence 70 rpm and up
- Moderate outside temperatures

Range Table (25 kph speed limit)

The range data in this table is based on tracked rides with a Creo 2 set at 25 kph motor assist speed limit. General ride parameters are noted above and in the examples themselves.

Based on the ride data, this range table was created to give other riders a better idea how much elevation gain, distance and riding time can be achieved in one ride.

Other riders` range results may be outside these spectrums due to their individual variables.

A few examples: If you climb less, your distance usually increases; higher system weight or drag will reduce range, and vice versa; if you put in a lot of own effort when climbing, your range can increase.

BATTERY	METRIC	ECO 35/35*	SPORT 60/60*	TURBO 100/80*
INTERNAL BATTERY (320 WH)	Elevation Gain (up to)	1900 m 6234 ft	1300 m 4265 ft	1100 m 3609 ft
	Distance (up to)	75 km 47 mi	60 km 37 mi	50 km 31 mi
	Ride Time (up to)	3:30 h	2:30 h	2:00 h
INTERNAL + RANGE EXTENDER BATTERY (480 WH)	Elevation Gain (up to)	2850 m 9350 ft	1950 m 6398 ft	1650 m 5415 ft
	Distance (up to)	112 km 70 mi	90 km 56 mi	75 km 45 mi
	Ride Time (up to)	5:15 h	3:45 h	3:00 h

* Ease / Motor Power in %, default values, customizable in the Specialized app

Range Examples (25 kph speed limit)

These are the rides based on which the range table was created. The most relevant ride parameters are noted in each example.

Default ECO mode (35/35) - internal battery - charge level 100% to 4%

Range Examples (25 kph speed limit)

Default SPORT mode (60/60) - internal battery - charge level 100% to 4%

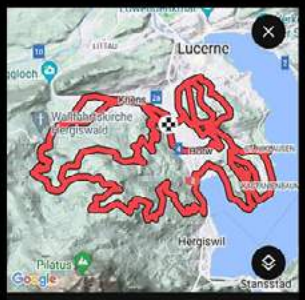
RANGE EXAMPLE: Turbo Creo SL Gen2 – 25 kph – internal battery – default Sport mode (60% Ease / 60 % Motor Power)

The Bike
- **Model:** MY23 Turbo Creo SL Expert Carbon
- **Weight:** 15.8 kg / 34.8 lbs (incl. pedals, fender, lights)
- **Lights:** on during ride (approx. 15 wh consumption total)
- **Speed setting:** 25 kph
- **Motor:** Specialized SL 1.2
- **Batteries used:** internal (320 Wh)
- **Motor setting:** default Turbo (60/60)
- **Start battery charge level:** 100%
- **Finish battery charge level:** 4%
- **Tires:** Tracer Pro 47c, w/ tubes
- **Tire pressure (f/r):** 1.7 / 2.5 bar // 25 / 36 psi

The Ride
- **Road / gravel ride,** Switzerland, August 2023
- **Average speed:** 23 kph / 14.3 mph
- **Distance:** 57 km / 35 mi
- **Total elevation gain:** 1250 m / 4101 ft
- **Riding time:** 2h 30 min

The Rider
- **Height:** 181 cm / 5 ft 9
- **Weight:** 80 kg / 176 lb (incl. gear)
- **Average power:** 178 w (adjusted)
- **Average cadence:** 80 rpm

The Weather
- **Constant rain, partly heavy**
- **Average temperature:** 13 °C / 55 °F



Default TURBO mode (100/80) - internal battery - charge level 100% to 4%

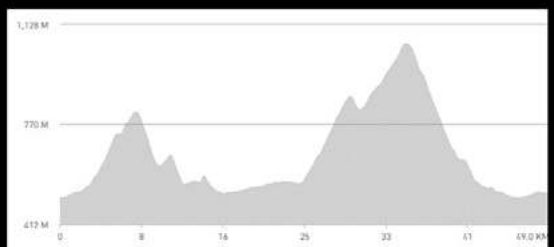
RANGE EXAMPLE: Turbo Creo SL Gen2 – 25 kph – internal battery – default Turbo mode (100% Ease / 80 % Motor Power)

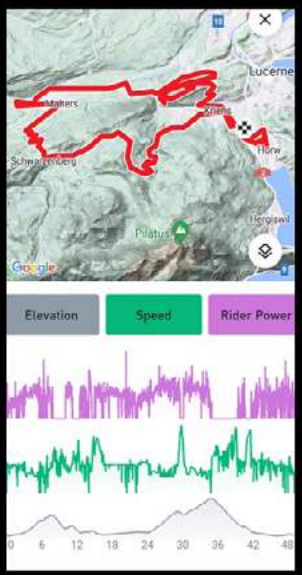
The Bike
- **Model:** MY23 Turbo Creo SL Expert Carbon
- **Weight:** 14.8 kg / 32.6 lbs (incl. pedals)
- **Speed setting:** 25 kph
- **Motor:** Specialized SL 1.2
- **Batteries used:** internal (320 Wh)
- **Motor setting:** default Turbo (100/80)
- **Start battery charge level:** 100%
- **Finish battery charge level:** 4%
- **Tires:** Tracer Pro 47c, w/ tubes
- **Tire pressure (f/r):** 1.8 / 2.7 bar // 26 / 39 psi

The Ride
- **Road / gravel ride,** Switzerland, August 2023
- **Average speed:** 24.4 kph / 15.2 mph
- **Distance:** 50 km / 31 mi
- **Total elevation gain:** 1100 m / 3609 ft
- **Riding time:** 2h 0 min

The Rider
- **Height:** 181 cm / 5 ft 9
- **Weight:** 80 kg / 176 lb (incl. gear)
- **Average power:** 170 w (adjusted)
- **Average cadence:** 78 rpm

The Weather
- **Dry and warm**
- **Average temperature:** 26 °C / 79 °F





Range Table (20 mph speed limit)

To get the range data for the 20 mph / 32 kph speed limit, we deducted 15-20%* from the 25 kph results as we know that this typically is the range difference between these two speed limits.

Usually, differences in range between the 20 kph/15.5 mph and 20 mph speed limit are greater at higher assist modes such as SPORT or TURBO. The difference in ECO can very noticeably, depending on rider input and terrain.

Other riders` range results may be outside these spectrums due to their individual variables.

A few examples: If you climb less, your distance usually increases; higher system weight or drag will reduce range, and vice versa; if you put in a lot of own effort when climbing, your range can increase.

BATTERY	METRIC	ECO 35/35*	SPORT 60/60*	TURBO 100/80**
INTERNAL BATTERY (320 WH)	Elevation Gain (up to)	1650 m 5413 ft	1100 m 3609 ft	900 m 2953 ft
	Distance (up to)	65 km 40 mi	50 km 31 mi	40 km 25 mi
	Ride Time (up to)	3:15 h	2:05 h	1:45 h
INTERNAL + RANGE EXTENDER BATTERY (480 WH)	Elevation Gain (up to)	2475 m 8120 ft	1650 m 5413 ft	1350 m 4430 ft
	Distance (up to)	98 km 61 mi	75 km 47 mi	60 km 37 mi
	Ride Time (up to)	4:45 h	3:10 h	2:30 h

15% for ECO, 20% for SPORT and TURBO

** Ease / Motor Power in %, default values, customizable in the Specialized app

Range Table (28 mph speed limit)

The range data in this table is based on tracked rides with a Creo 2 set at 28 mph motor assist speed limit. General ride parameters are noted above.

Based on the ride data, this range table was created to give other riders a better idea how much elevation gain, distance and riding time can be achieved in one ride.

Other riders` range results may be outside these spectrums due to their individual variables.

A few examples: If you climb less, your distance usually increases; higher system weight or drag will reduce range, and vice versa; if you put in a lot of own effort when climbing, your range can increase; the more you exhaust the motor assist speed, for instance by pacing on flat sections, the higher the battery consumption.

BATTERY	METRIC	ECO 35/35*	SPORT 60/60*	TURBO 100/80*
INTERNAL BATTERY (320 WH)	Elevation Gain (up to)	1500 m 4921 ft	950 m 3117 ft	700 m 2297 ft
	Distance (up to)	70 km 43 mi	50 km 31 mi	40 km 25 mi
	Ride Time (up to)	3:15 h	2:00 h	1:30 h
INTERNAL + RANGE EXTENDER BATTERY (480 WH)	Elevation Gain (up to)	2250 m 7382 ft	1425 m 4675 ft	1050 m 3445 ft
	Distance (up to)	105 km 65 mi	75 km 47 mi	60 km 37 mi
	Ride Time (up to)	4:45 h	3:00 h	2:15 h

* Ease / Motor Power in %, default values, customizable in the Specialized app

04 frame.

Design & Engineering Goals

GENERAL

The main focus for Creo 2 was to design a capable and versatile platform. The team wanted to make the most capable drop bar bike, featuring a great geometry that gives riders confidence to take on any terrain. Frame and fork offer lots of tire clearance to master challenging routes. All this is paired with rack mounts front and rear so that riders have the needed carrying options.

CARBON FRAME

Compared to the first generation Creo SL, the carbon frames save about 120 g. However, weight savings were not the main target for the new frame, more so capability and versatility.

As known from Specialized performance bikes, Creo 2 rewards riders with a precise, direct handling, paired with the right amount of compliance for smooth and controlled riding.

ALUMINUM FRAME

Information will follow closer to the MY24 alloy launch.

Construction & Measurements

GENERAL

Carbon frames

All carbon frames are made from FACT 11r carbon. The layup mainly uses high modulus fibers. Tube shapes, tube dimensions, fiber orientation and wall thicknesses are strategically engineered to get a light, stiff and durable chassis. The open structure for motor and battery was addressed with special care to achieve outstanding ride qualities.

Aluminum frame

Information will follow closer to the MY24 alloy launch.

HEADSET

Ensure that replacement bearings are compatible with the Specialized headset specification. Future Shock headsets use a custom upper bearing. Please refer to the Future Shock 3.0 manual for details.

Bearing dimensions / service part numbers

- Upper: Custom (45.8 x 36.8 x 6.5 x 45°x 45°) - SKU: S182500006
- Lower: 1.8" (56.8 x 47.8 x 6.5 x 45°x 45°) - SKU: S222500004

DERAILLEUR HANGER

The derailleur hanger is a replaceable part that connects the rear derailleur to the bicycle frame and is mounted directly at the rear dropout. The derailleur hanger helps protect the bicycle frame from being damaged by bending or snapping when impacted. The hanger is the same as used on many other Specialized disc road bikes

Service Part number: **S182600001**

THRU AXLE

- Spacing: 142 mm
- 12mm thru axle
- Thru axle length: 167 mm (full length)
- Thru axle thread pitch 1.0

Hardware

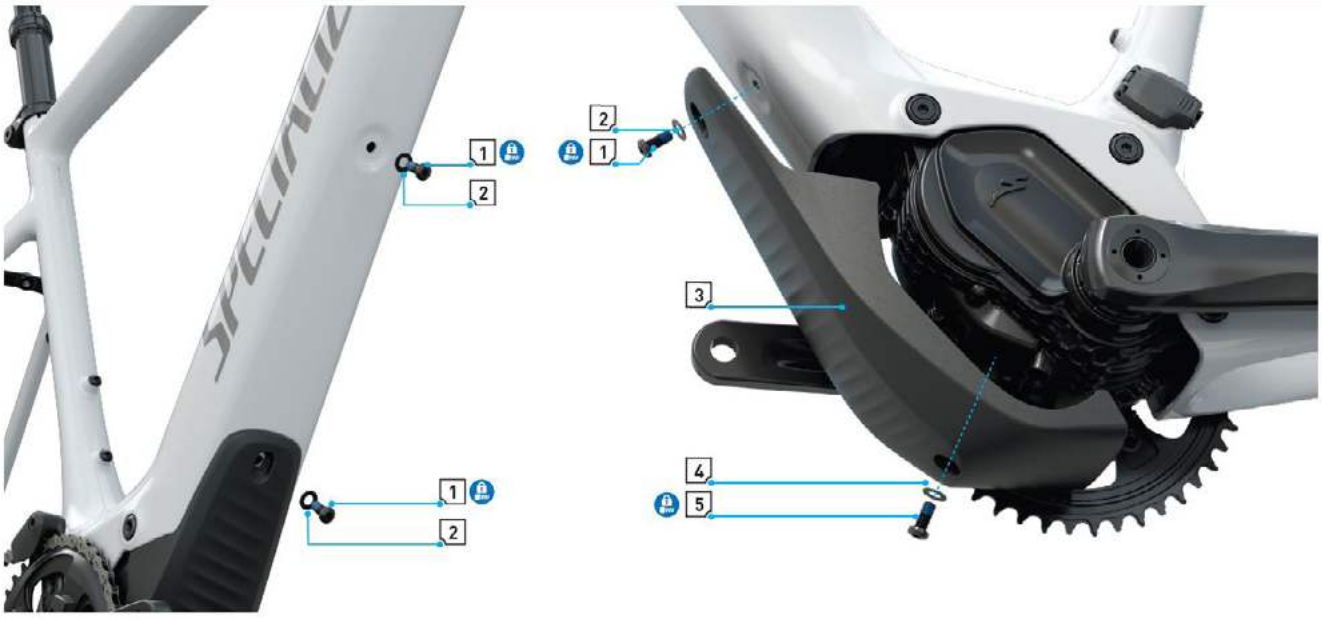
GENERAL

The bike user manual holds important information on key frame hardware, including torque values for bolts.
Specialized retailers please use the Creo 2 schematics for detailed information about hardware parts and assembly instructions.

Two example images from the schematics (w/o details for labelled parts)

MOTOR BOLTS

MOTOR COVER



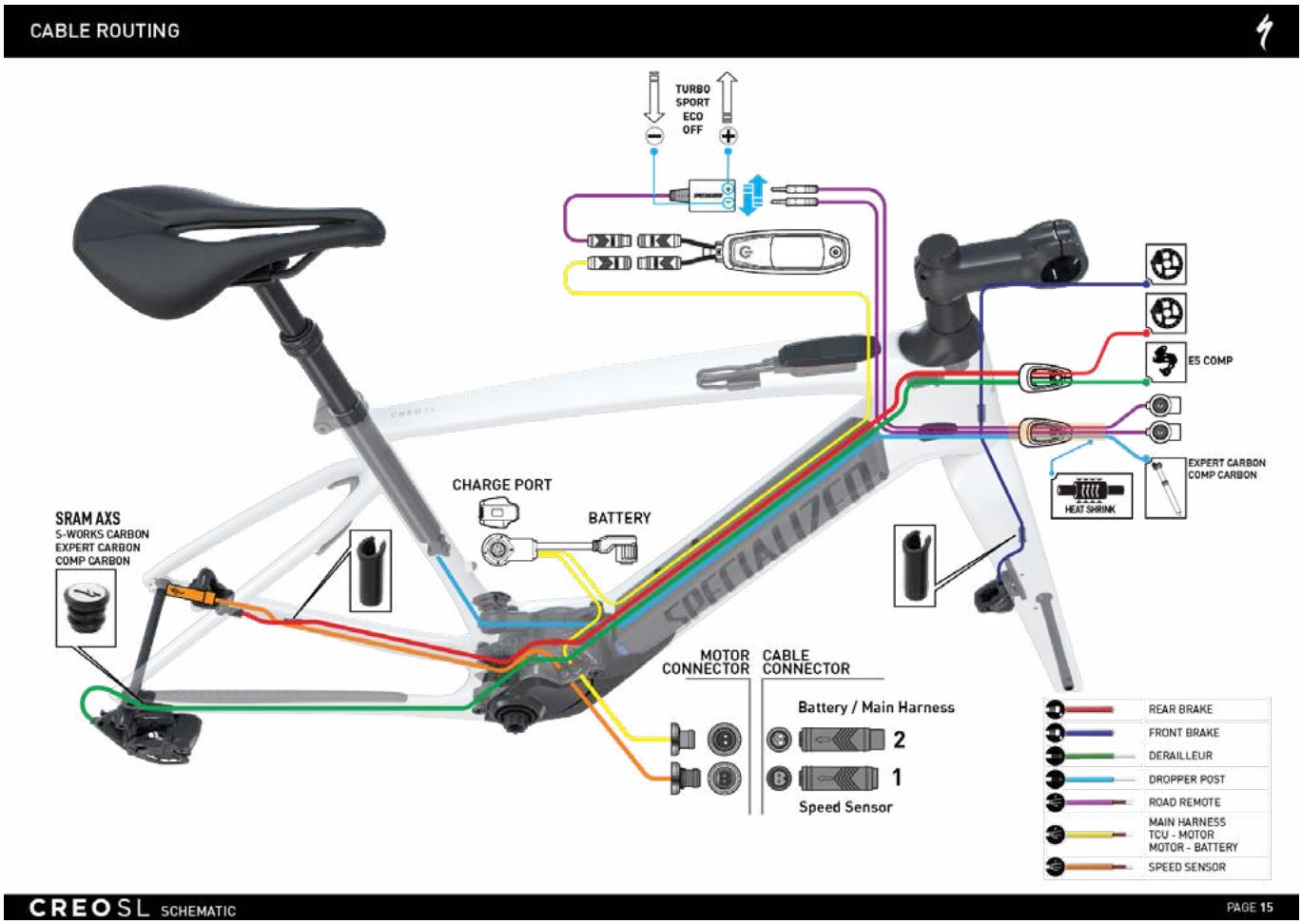
Wiring & Routing

FRAME CABLE ROUTING

Retailers please use the PDF schematics for Creo 2 for complete technical and visual guidance.

- All cables run "free" above the battery in the downtube
- No nylon tubes or other guides installed

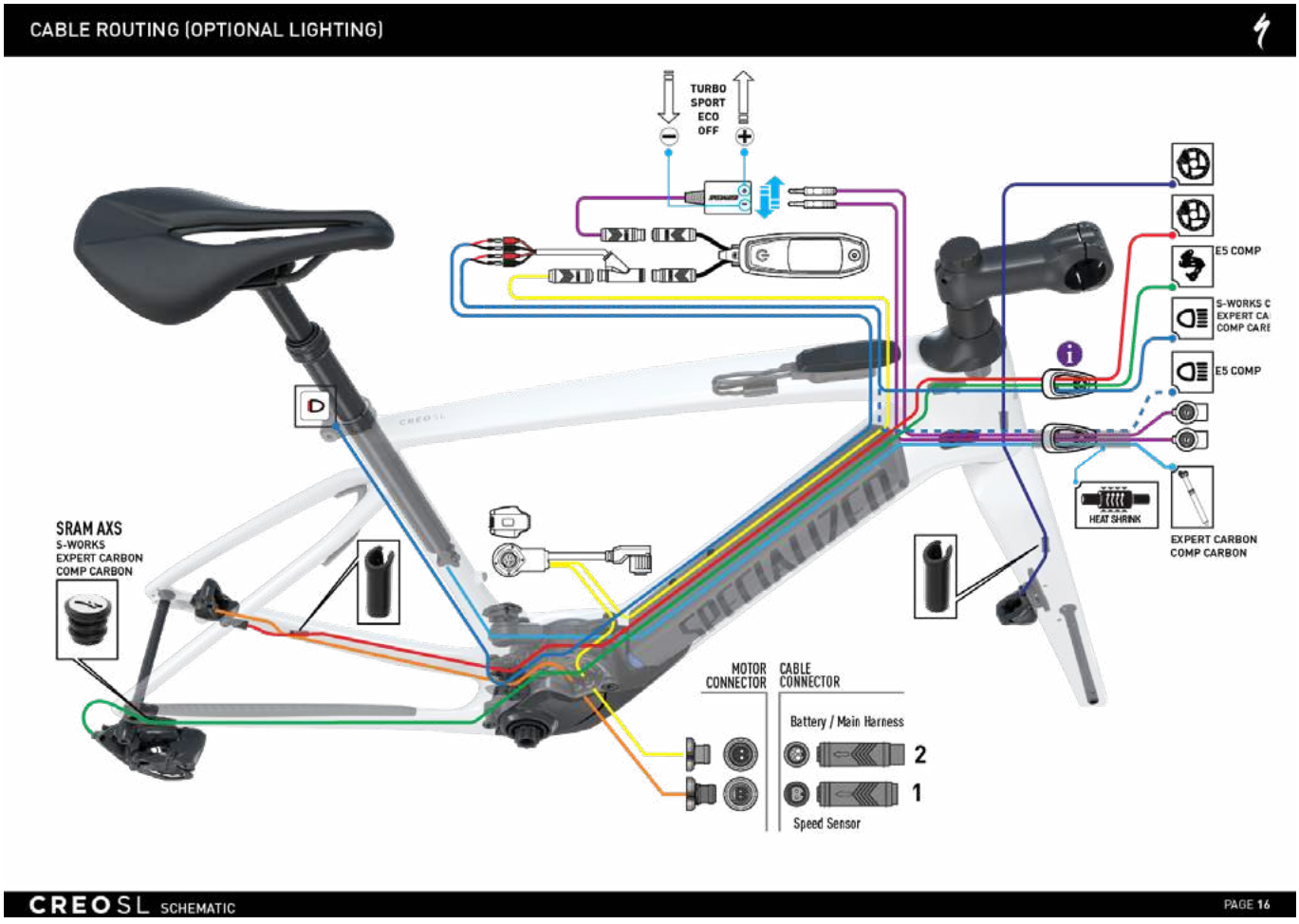
Cable routing without optional wired lights



Wiring & Routing

FRAME CABLE ROUTING (CONTINUED)

Cable routing with optional wired lights. See chapter wired lights for details.



08 fork.

Construction & Measurements

FACT 11R AND FACT 8R CONSTRUCTION

FACT 11r forks (carbon models)

The layup mainly uses high modulus fibers. Fork shape, blade dimensions, fiber orientation and wall thicknesses are strategically engineered to get a light, stiff and durable construction - for a precise handling and optional mount options such as front rack, fenders or additional bottle cages. Fork steerer tubes are specifically designed for Future Shock integration.

FACT 8r forks (alloy model)

Information will follow closer to the alloy launch in 2024.

FUTURE SHOCK NOTES

The fork steerer uses a specific design to accommodate Future Shock integration. Please refer to the Future Shock 3.0 manual for details.

STEERER TUBE

Future Shock specific dimensions and design. Please refer to the Future Shock 3.0 manual for details.

Construction & Measurements

BRAKE CALIPER STANDARD / MAX. ROTOR SIZE

- Brake calipers use the Flat Mount standard
- The standard and maximum rotor size is 180 mm

AXLE TYPE

- Spacing: 100 mm
- 12 mm thru axle
- Thru axle length: 127 mm (full length)
- Thru axle thread pitch 1.0

TRAIL & RAKE/OFFSET

- Trail: 67 mm
- Rake/Offset: 55 mm

CLEARANCE (TIRES / FENDER)

- Generally, tires up to 29x 2.2" (56 mm) wide fit into the fork without fenders
- The actual max. tire width will depend on the tread pattern and the actual tire dimensions on the rim
- Tires should provide a minimum clearance of 6 mm within the fork
- Fenders with a profile width of max. 60 mm are compatible, allowing for enough clearance between fender and fork crown (see "Fenders Compatibility" for details)

Construction & Measurements

MOUNTING POINTS		
MOUNTING POINT	**PURPOSE**	**NOTE**
Through-hole in fork arch	• Fender mounting • Rack mounting (e.g. Pizza Rack) • Light holder mounting	• Threadless • Accepts M6 screws / bolts • Max torque 6 Nm / 53 in-lbf • Max. 14 kg total (rack and cargo)
2x M4 threads, middle of each fork blade	• Bottle cages • Carrying accessories, e.g. stuff bag • Low-rider rack	• M4 threads, closed • Thread depth: 19 mm • Center-center distance: 64 mm (bottle cage standard) • Max torque 4.5 Nm / 40 in-lbf • Max. 14 kg total (rack and cargo)
1x M4 thread, each dropout	• Fender strut mounting	• M4 threads, open • Thread depth: 15 mm • Max torque 6 Nm / 53 in-lbf

thread to fix fender strut (non-drive-side)

thread to fix fender strut (drive-side)

bottle cage / low-rider rack mounts (both sides)

09 default component specifications.

MY24 Default Spec - Cockpit

This table lists all data for the most relevant default components per model and bike size.

COMPONENT	DEFAULT COMPONENT DATA	DETAILS
Handlebars	• Style: Gravel drop bars with 103 mm drop, 70 mm reach, 12º flare • Material: carbon for S-Works, alloy for all other models • Widths: dependent on frame size • Stem interface diameter: 31.8 mm (all models) • S-Works: Roval Terra, carbon, 103 mm drop x 70 mm reach x 12º flare • All non S-Works models: Specialized Adventure Gear Hover, 103 mm drop x 70 mm reach x 12º flare	Handlebar widths per frame size (measured center - center): 49: 380 mm 52: 400 mm 54: 420 mm 56: 420 mm 58: 440 mm 61: 440 mm
Stem	• All models use specific Future Shock stems • Computer mount interfaces in all stem face plates • Widths: dependent on frame size • Handlebar interface diameter: 31.8 mm (all models)	Stem length per frame size (measured center - center): 49: 60 mm 52: 70 mm 54: 80 mm 56: 90 mm 58: 100 mm 61: 100 mm
Future Shock	• S-Works / Expert: Future Shock 3.3 (damped, tunable, on-the-fly compression) • Comp Carbon: Future Shock 3.2 (damped, tunable, pre-set compression) • Comp E5: Future Shock 3.1 (undamped, tunable) All Creo 2 bikes ship with the medium/black spring and 0 preload spacers installed in the Future Shock cartridge.	Refer to the bike and Future Shock manual for information on set-up and service. You will also find a lot of resources on our Support Center by typing in “Future Shock”: https://support.specialized.com/

MY24 Default Spec - Cockpit

Example images (Expert model)

road remote buttons can be custom-placed

dropper post lever comes pre-installed in intended position

MY24 Default Spec - Seating Area

Table continued

COMPONENT	DEFAULT COMPONENT DATA	DETAILS
Saddle	• Type: Power saddles on all models with SWAT mounts (e.g. for Stix rear light) • Rails: S-Works features 7x9 mm carbon rails, all other models 7x7 mm rails (steel or titanium)	Saddle widths per frame size: 49 / 52: 155 mm 54 - 61: 143 mm Saddle model per bike model: S-Works: Power S-Works Expert: Power Expert Comp Carbon: Power Comp Comp E5: Power Sport
Seatpost & Clamp	Seatpost types • Diameter: 27.2 mm (all models) • S-Works: wireless SRAM AXS XPLR dropper post, actuated through AXS shifter (press and hold both shifter paddles simultaneously) • Expert/Comp Carbon: wired Tranz-X dropper, actuated by separate dropper lever, left side of bar • Comp E5: rigid carbon seatpost on alloy model (dropper retrofittable) Seatposts per bike model • S-Works: SRAM Reverb AXS (wireless) • Expert/Comp Carbon: Tranz-X, 0 mm offset, 2-bolt head, (wired) • Comp E5: Rigid carbon seatpost, 20 mm offset, single-bolt head Seatpost clamp • Single bolt on all models (4 mm hex) • Inner diameter: 31.8 mm (carbon frame) or 30.8 mm (alloy frame)	Seatpost lengths and dropper travel per model and frame size: S-Works 49/52: 350 mm - 50 mm drop 54-61: 400 mm - 75 mm drop Expert & Comp Carbon 49-54: 350 mm - 50 mm drop 56-61: 400 mm - 50 mm drop Comp E5 49-54: 350 mm - no dropper 56-61: 400 mm - no dropper Seatpost max. insertion depths per frame size: 49: 265 mm 52: 285 mm 54 - 61: 300 mm Seatpost min. insertion depth for frame: 75 mm (all frame sizes) Note that the individual seatpost may require more insertion.

T

MY24 Default Spec - Seating Area

Example images (Expert model)

MY24 Default Spec - Drivetrain & Brakes

Table continued

COMPONENT	DEFAULT COMPONENT DATA	DETAILS
Shifters / Rear Derailleur	See specification table for MY24	
Cranks	• All models use custom SRAM narrow cranks • Material: carbon for S-Works, alloy for all other models (carbon cranks: SRAM FC S996; alloy cranks: SRAM FC S699) • Lengths: dependent on frame size • Q-factor: approx. 169 mm (about 12 mm narrower than Creo SL Gen1)	Crank lengths per frame size: 49: 165 mm 52: 170 mm 54: 172.5 mm 56: 172.5 mm 58: 175 mm 61: 175 mm
Chainring & Spider	All models come with 1x12 SRAM X-Sync chainrings. • 44t chainrings (all models) • Spider: 107 BCD (required for SRAM chainrings)	A custom chain guide additionally supports chain retention. Note that the Creo 2 chainguide (S221200005) is not compatible with Creo SL Gen1 models.
Cassette	All models come with 12 spd SRAM cassettes. • 10-50 (S-Works only) • 11-50 (all non S-Works models)	Only S-Works uses an XD type cassette, all others are lock-ring cassettes
Brakes	• All SRAM 2-piston brakes, Flat Mount design • Reach adjust with 2.5 mm allen key • 180 mm front / 160 mm rear center lock rotors (all models) • Steel-backed organic brake pads	Caliper model by bike model: see specification table

to keep the chain safely in place, all Creo 2 bikes come with an adjustable chain guide; compatible with 42t-48t chainrings

MY24 Default Spec - Drivetrain

Example images (Expert model)

brake lever reach can be adjusted with a 2.5 mm allen key

chain guide is adjustable to 42t-48t chainrings

10-50 or 11-50 cassettes for wide gearing range

flat mount 2-piston calipers, paired with 160 mm rotors

MY24 Default Spec - Wheels

Table continued

COMPONENT	DEFAULT COMPONENT DATA	DETAILS
Wheels	All models come with 700c/29" wheels front and rear • 142 mm spacing rear • 100 mm spacing front • 12 mm thru axles front and rear • rear axle: 168 mm insertable axle length, w/o lever • front axle: 127.5 mm insertable axle length, w/o lever • all rims feature hooks and are tubeless compatible (tubeless ready rim strips installed, tubeless valves in small parts box)	**S-Works / Expert: Terra CLX II / Terra C** • Roval Terra C • Roval Terra CLX II • rims: 32 mm deep, 30 mm external, 25 mm internal width • Roval tubeless valves included in small parts box • Roval tubeless rim strips installed **Comp Carbon / Comp E5: Specialized hubs and alloy rims** DT Swiss G540 rims • custom decals • 24h front, 28h rear • 25 mm deep, 28 mm external, 24 mm internal • approx. 570g per rim • Roval tubeless valves included in small parts box • DT Swiss tubeless ready rim strip **Specialized hubs** • Sealed cartridge bearings • 3-pawl freewheel

MY24 Default Specs - Tires & Tubes

Table continued

COMPONENT	DEFAULT COMPONENT DATA	DETAILS
Tires	All carbon models feature Tracer Pro tires: • 47 mm wide • folding bead • tubeless ready (2BR) • 60 TPI casing • Gripton compound Alloy model features Pathfinder Pro tires: • 38 mm wide • folding bead • tubeless ready (2BR) • 120 TPI casing • Gripton compound	Tire widths and weights carbon vs. alloy models: • Carbon models: Specialized Tracer Pro 700x47c (approx. 595g per tire) • Alloy model: Specialized Pathfinder Pro 700x38c (approx. 480g per tire) • For tire pressure guidelines, please refer to our Gravel and Cyclocross Tire Pressure Guide
Tubes	All models come with standard Specialized butyl tubes installed, covering 32-50 mm wide tires.	Valve stem lengths and tube weights: • S-Works/Expert: 60 mm presta valve stem (Terra wheels/rims); approx. 190g (1 std. tube) • All other models: 40 mm presta valve stem; approx. 185g (1 std. tube)

MY24 Default Specs - Tires & Tubes

Example images (Expert model)

Tracer Pro tires are tubeless ready

install the supplied sticker to prevent the valve stem from rattling / vibrating

Terra rims give pressure recommendations

Tracer Pro tires are grippy on hardpack and roll fast

Small Parts Box Content

This table references most of the small parts that ship with the bike in a separate box. Only some of them are needed for bike building, others are optional. Note that all bikes ship with a charger and manuals. Numbers in brackets indicate the supplied amount if more than one.

MODEL	SMALL PARTS BOX CONTENT

Comp Carbon
 	
Comp E5
	• Reflector kit (dependent on market)
	• Bar tape
	• Tubeless valves
	• Extended length eyelets for plug´n play fenders (4)
	• Set screws for Plug&Play fender stays (4)
	• Fender bracket for rear triangle with mount screws (3) and fender spacer
	• Piece of shrink tube for optional cable arrangement at cockpit
	• Future Shock parts
	  • Blue/soft and yellow/hard booster spring (black/medium spring installed)
	  • Future Shock Stem Shim (to install a standard 1 1/8 stem)
	  • 0 mm headset top cover to reduce stack (15 mm headset cap installed)
	  • 5 mm spacers to increase stack (3)

Expert	All the above parts plus: • SRAM AXS battery charger • Roval stickers to prevent valve cores from moving and rattling (4)

S-Works	All the above parts plus:
	
	• S-Works Zee Cages (2)
	• 220 mm Range Extender cable
	• Range Extender retention band
	• Y-Charger cable
	• Barfly mount for stem, dual, alloy, with hardware
	  • computer mount plates: Garmin, Wahoo, Polar, Bryton, Mio, Omata, Cateye
	  • GoPro mount (can be used for some front lights)

Small Parts Box Content

Example images (Expert model)

Specialized and third party manuals

1 - brake parts
2 - wheel parts
3 - Future Shock parts
4 - fender parts

left - optional Future Shock stem shim to mount a std. 1 1/8 stem
note: FS 3.0 cartridges do not require a shim when mounting a Future Stem

All AXS equipped bikes ship with a battery charger

09 components compatibility

Compatibility - General

This section provides essential information on component compatibility. Examples are using a second wheel set, alternative tires or different handlebars. Using this compatibility information will help retailers and riders consider all relevant aspects for bike customization to then select the suitable components.

Compatibility - Cockpit

HANDLEBAR

Creo 2 is designed for drop bars. Alternative drop bars can be installed, for instance, if you prefer wider bars or a different shape. Things to consider before choosing an alternative handlebar:

- must feature 31.8 mm stem clamp diameter (to work with standard stem)
- should feature cable grooves, especially if you have a bike with mechanical shifting
- installing wider bars may require replacing cables (brake hoses, shift cables, dropper cable)
- new bar tape is required as the standard tape uses a self-adhesive tape
- if a wider bar is installed, the new bar tape must be long enough to be wrapped with sufficient overlap

STEM

All Creo 2 models come with Future Shock systems and the matching Future stems. However, if you want to install a standard 1 1/8 stem, you can do so using the supplied stem shim (service part number S234800001). Things to consider before choosing an alternative stem:

- alternative stem must work with 31.8 mm handlebar clamp diameter (to work with standard bar)
- using a different length/angle may require the cables/hoses to be replaced

BAR TAPE

Bar tape is pretty universal. Especially if you install a wider bar, ensure that the bar tape is long enough. There are extra long bar tapes for wide gravel bars.

Compatibility - Cockpit

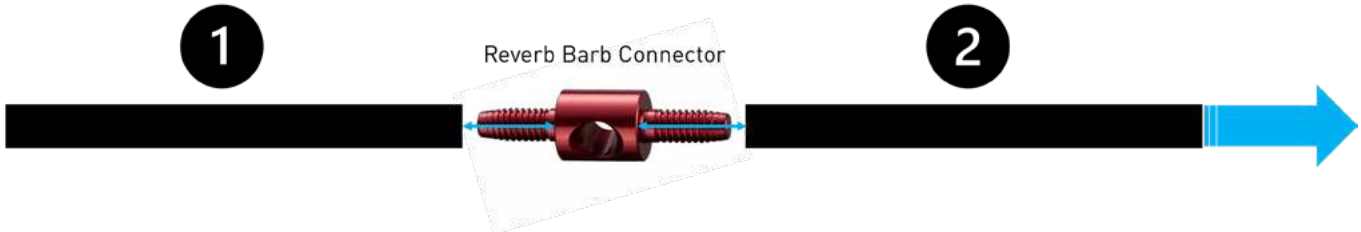
Example images

The below images show a modified Creo 2 cockpit, using a 52 cm (center-center) wide PNW "The Coast" gravel Drop Bar, combined with a 70 mm / 7° PNW "The Coast" stem.

Note that bar width comes down to personal preference and fit. Generally speaking, a wider bar with shallow drop adds comfort in your neck and wrists while making your bike more stable.

Note that increasing bar width and changing stem dimensions may require replacing one or more cables/hoses as well. In the give example, the rear brake hose was too short and needed to be replaced with a new one. All the other cables were long enough as shipped.

Installing a new rear brake hose can usually be done without removing motor and battery from the frame. See details below.



A new brake hose (1) can usually be routed into the frame without removing any additional components, such as motor or battery. At the chainstay hose exit port, connect the new hose to the installed brake hose (2), using a "Reverb Barb Connector" or other suitable connector. Once tightly connected, the new hose can be fed into the frame by pulling the installed hose out at the steerer tube. Do not pull harder when feeling some resistance, instead pull the hose back a bit and try again.

Compatibility - Seating Area

DROPPER SEATPOST & DROPPER LEVER

- Alternative dropper seatposts are compatible, provided they feature the required dimensions (diameter, length, insertion depth, saddle rail compatibility)
- Expert and Comp Carbon feature wireless SRAM AXS shift systems and can be upgraded to a wireless SRAM Reverb AXS dropper seatpost, actuated by a simultaneous double press of both shift paddles
- Comp E5 model can be upgraded with a compatible dropper post and lever as the frame allows routing an additional housing into the drive side head tube cable port.

a Kind Shock LEV Integra 27.2 dropper post with 100 mm of travel, installed in a size 56 frame

Compatibility - Tires

Within in a certain range, Creo 2 bikes can be run with different tire widths and profiles. This way you can customize your Creo 2 experience for gravel or road use.

GENERAL

- Max. tire width front/rear:
  - carbon frames: 29x2.2"; generally, tires up to 56 mm wide fit into frame/fork without fenders and still provide enough clearance
  - alloy frame: 700x47c; generally, tires up to 47 mm wide fit into frame/fork without fenders and still provide enough clearance
- Max. tire width will also depend on the tread pattern and the actual tire dimensions on the rim
- Tires should provide a minimum clearance of 6 mm within frame and fork
- Min tire width front/rear: The narrowest tire we recommend being used is 700x38c; this is the smallest tire that the bike was designed for, anything smaller than that will bring the bottom bracket too low and can negatively affect the handling.
- Mounting tires of different width will require adjusting the wheel circumference in Turbo Studio (retailers only) so that the system calculates speed correctly. The default wheel circumference with Tracer 47c tires is 2150 mm
- For tire pressure guidelines, please refer to our Gravel and Cyclocross Tire Pressure Guide

Expert model with Ground Control 29x2.2 tire

Compatibility - Tires

TIRE SUGGESTIONS

Here are some suggestions for alternative tires in case you want to fine-tune the bike for the terrain you are riding in most of the time.

TIRE MODEL	IDEAL TERRAIN / CONDITIONS	TESTER NOTES / TIPS
TRACER PRO 47C (default)	• dry • hardpack gravel • tarmac	Great allround tire and with impressive grip for its fast tread, even when gravel is more loose and wet. Adapt tire pressure for terrain your are riding in.
RHOMBUS PRO 47C	• dry and wet • loose gravel • mud	Ideal for rougher gravel, both dry and wet; increases off-road traction compared to Tracer, especially when cornering. Still rolls smooth and fast on hardpack or road thanks to the narrow center tread. If you have both hard and loose conditions over one ride, it is worth carrying a pump to adjust the tire pressure for longer sections.
RENEGADE 29X2.2 FAST TRAK 29X2.2	• dry and wet • loose gravel • mud • flow trails	N/A
SAWTOOTH 38C OR 42C	• dry and wet • tarmac • hardpack/fine gravel	Outstanding tire for roads and hardpack gravel. Gives you road-bike feel with lots of speed, supreme traction on tarmac, allowing fast cornering. Still suitable for hardpack gravel, especially if you dial in the pressure right.

Compatibility - Tires

Example images

Sawtooth 42c tire on Roval Terra C rim, with tubes

Rhombus Pro 47c tire on Roval Control Carbon rim, tubeless

Compatibility - Tubeless

A tubeless setup allows running lower tire pressures, reduces rolling resistance and wheel weight, creates a more supple ride and adds some flat protection as small punctures (e.g. thorn) will be sealed. Be aware that tubeless sealant needs to be renewed at least once a season for optimal performance. Tubeless systems lose air quicker than tires with tubes, so ensure to check your tire pressure before every ride.

Tubeless compatibility and tips (based on original components)

- All models can be set up tubeless with the original tires and rims
- All models come with tubeless valves in the Small Parts box
- All installed rim tapes are tubeless ready
- Tubeless weight savings per tire (calculated with 60g sealant per tire): approx. 125g

Rhombus Pro 47c tire on Roval Control Carbon rim, tubeless

Compatibility - Second Wheelset

Additional or optional wheelsets can be run with Creo 2 bikes.

Compatibility requirements

- 700c / 28" rims (650B / 27.5 wheels are not recommended as Creo 2 is designed for 700c / 28" wheels - the bottom bracket would be too low with 27.5 wheels)
- Rim width must be compatible with the tire width
- Hub spacing rear: 142 mm
- Hub spacing front: 100 mm
- Hubs for 12 mm axles and matching end caps
- Freewheel body that accepts compatible cassette (see tip below)
- Speed sensor magnet must be installed on rear hub (Centerlock or 6-bolt design)

Tips for using two wheelsets

- Use identical wheels if tire choice and intended use allow it
  - Example: On Terra wheels you can technically run tire widths ranging from 28 mm to 47 mm, allowing them to be used with different tires - note that with Creo 2 tires should not be narrower than 38 mm (smaller tires would bring the bottom bracket too low and can negatively affect the handling)
- Use identical cassettes for chain length compatibility and best shift performance (switching between wheels/ cassettes may require fine-adjusting the gears before every ride, but with identical cassettes you will get the best results)
- Use identical rotor models (switching between wheels may require fine-adjusting the brakes before each ride as the position of the rotor will vary slightly between wheels)
- Use rotor shims (typically 0.1 or 0.2 mm thick) to fine adjust rotor position so that no caliper adjustment is needed after installing the second wheelset
  - Example for 6-bolt disc shim: Syntace shims
  - Example for Centerlock shim: Tune shims

Compatibility - Second Wheelset

Example images

6-bolt magnets work with the system

a six-bolt rotor on a second wheelset, using 2x 0.2 mm disc shims for alignment

Compatibility - Drivetrain

SHIFTERS, RD, CASSETTE

Shifters

- Alternative shifters can be installed, provided they are compatible with the rest of the drivetrain
- All default RDs can be run with SRAM 10-52 cassettes, in case a smaller gearing is desired

Rear Derailleur (RD)

- Alternative RDs can be installed, provided they are compatible with the shift system
- All default RDs can be run with SRAM 10-52 cassettes, in case a smaller gearing is desired

Cassette

- Alternative cassettes can be installed, provided they are compatible with the hub driver body and shift system
- It is recommended to use SRAM cassettes only
- All default RDs can be run with compatible SRAM 10-52 cassettes, in case a smaller gearing ratio is desired

Hub driver body type overview by model

MODEL	DEFAULT DRIVER BODY	OPTIONS
S-Works	SRAM XD	N/A (drivetrain should be run with SRAM cassettes)
Expert	Splined body	The used DT 370 hub can be upgraded to a SRAM XD driver body DT Part numbers: • HWYABM00S3766S (XD body) • HWYABX00S7711S (XD-R body)
Comp Carbon / Comp E5	Splined body	Use service part S222100005 to upgrade the rear hub to an XD(R) compatible driver body. Note: since this is an XD-R body, if you install a "standard" XD cassette on it, you need to use a 1.85 mm spacer behind the cassette. See this SRAM article on XD versus XDR.

10-52 cassettes work with the rear derailleur and default chain length (always check adjustments); if used on a second wheelset, remember to shim the brake rotor and that you probably need to fine-tune the rear derailleur after swapping wheels

Compatibility - Drivetrain

CHAINRING & CRANK

Chainring

- Alternative SRAM X-sync 12 spd chainrings with 107 BCD can be installed, provided they are within a range of 42-48 teeth to work with the chain guide
- The chain guide needs to be adjusted if a different tooth count is installed (see manual)
- It is not recommended to use other chainrings than SRAM, to remove the chain guide or to go outside the compatible size range (42t-48t)

Crank

- Installing alternative cranks is not recommended, as the default cranks are custom made for the motor and frame requirements
- If another crank length is desired, original cranks can be ordered as a service part through authorized Specialized retailers
- When choosing third-party cranks, ensure they are compatible with the SRAM DUB interface and have identical offset for correct clearance and Q-factor

Chainguide

- Custom chain guide, integrated with motor hardware
- Adjustable for 42t - 48t chainrings
- Outer plate can be flipped open by hand
- The Creo 2 chainguide (S221200005) is not compatible with Creo SL Gen1 models

the spider accepts 107 BCD chainrings; matching SRAM X-sync chainrings are reocommended

the chainguide has markers to height-adjust it for 42-48t chainrings

09 accessories compatibility.

Compatibility Overview

This is a general overview for on-bike accessory compatibility. Accessories include the most common additions to the bike riders may ask for. Please refer to specifics as available in the dedicated sections of the workbook. Component compatibility (e.g. handlebars or wheels) is covered in a separatem chapter.

ACCESSORY	COMPATIBLE	LINK TO DETAILS
RANGE EXTENDER	YES	CLICK HERE
WATER BOTTLE CAGES / STUFF BAGS	YES	CLICK HERE
WIRED LIGHTS	YES	CLICK HERE
FENDERS	YES	CLICK HERE
REAR RACK	YES	CLICK HERE
FRONT RACK	YES	CLICK HERE
SWAT, SADDLE	YES	CLICK HERE
KICKSTAND	NO	N/A No mounting points
TRAILER & CHILDSEATS	NO	CLICK HERE
REAR VIEW MIRROR	YES	CLICK HERE

Compatibility

RANGE EXTENDER (RE)

General

All Creo 2 models can be used with RE batteries to increase range by about 50%. Here are some requirements and tips. Please also refer to your bike manual.

Installation

- Bike is turned off
- Range Extenders need to be installed at the seat tube of Creo 2 bikes, using a Zee Cage bottle cage (comes with RE) - other cages are not recommended
- Use the supplied bottle cage screws to mount the Zee Cage (washers do not need to be used) and position the cage in a low position so that the RE cable connector can be inserted easily and straight
- All models and sizes require the 220 mm Road cable (part 98920-5655) to connect the RE to the charge port

Removal

- Bike is turned off
- Remove/pull up retention band
- Unlock and unplug cable connector at charge port
- Close charge port (unless it needs to air-dry)
- Remove RE from bottle cage

Suitable ways to carry RE(s)

You can carry additional Range Extender batteries to extend range. Here are two

- In a pannier (if rack is installed)

In a Zee Cage at the fork blade (w/o cable connected, secured with the retention band)

when connecting a Range Extender battery, always use the supplied Zee Cage and always secure it with the retention band.

when carrying a Range Extender battery like this, always use the supplied Zee Cage and always secure it with the retention band.

Compatibility

RANGE EXTENDER (RE) (CONTINUED)

Usage tips

- Always power the system off before connecting/disconnecting a Range Extender battery
- Run the Range Extender in parallel discharge mode (default)
- Do not ride with a disconnected RE cable - transport the cable as gear whenever the RE is not in use but needs to sit in the bottle cage
- Do not leave the RE cable disconnected and dangling at the frame when moving bike around
- Never leave the RE cable unplugged and spin the bike backwards - a backwards-moving crank arm will likely jam the RE connector between crank and frame, causing damage to the connector or even the frame

Charging tips

- Use the Y-charging cable (part 98920-5660) to simultaneously charge the internal battery and Range Extender
- To avoid physical damage, do not move the bike or crank arms when a charger is connected

Cleaning tips

- Remove the RE battery before washing the bike and ensure the charge port is closed
- Clean the RE and cable with a soft, damp cloth
- Blow out the connector port by mouth if contaminated with dirt or water
- Leave the RE/charge port open to dry over night

Compatibility

USE CASE SCENARIOS FOR BOTTLE CAGES

Here is an overview on how you can utilize the water bottle cages.

LOCATION	PRIMARY / POSSIBLE USE	NOTE / TIP
Down tube	Hydration / water bottle	Most convenient location for water bottle.
Seat tube	1. Range Extender (connected) 2. Specialized Keg for essentials (tool, tire lever, CO2 cartridge, snack) 3. Hydration / water bottle	If you want to connect a Range Extender to the system, the cage at the seat tube must be used.
Fork blades	1. Hydration / water bottle 2. Keg / store vessel for essentials (tool, tire lever, CO2 cartridge, etc.) 3. Range Extenders 4. Stuff cage	Mount one cage each side and distribute the weight evenly.

Specialized Zee cages, one at each fork blade

22oz Specialized Purist water bottle in Zee cage

Specialized Keg in Zee in Zee cage

SL Range Extender Battery in Zee cage

Compatibility

WATER BOTTLE CAGES

All Creo 2 models feature 4 water bottle cage mounts with the standard tab distance of 64 mm (center-center).

1. Downtube
2. Seattube
3. Drive-side fork blade
4. Non-drive side fork blade

Water bottle compatibility per frame size

- All Creo 2 frame sizes accept a 26 oz / 0.7 liter water bottle at the down tube
- Frame sizes 54 and upwards accept a 26 oz / 0.7 liter water bottle at the seat tube
- Frame sizes 49 and 52 only accept a smaller water bottle (e.g. 21 or 22 oz, around 0.6 liter)

Compatibility

WIRED LIGHTS

General

Compatible wired lights can be powered by the e-bike system, using the Y-Splitter cable for lights, connecting at the MasterMind TCU.

This is a short summary only. Retailers please use the Turbo Studio Knowledge Base article `Guideline to wired lights` for more details. It is important to adhere to some technical requirements when choosing an integrated wired light in conjunction with a Turbo SL bicycle.

Legal framework

Always ensure the chosen light is not only technically compliant, but in harmony with the country laws for running bicycle lights. If in doubt, check back with the manufacturer and include the applicable legal statements to make a legally safe choice for your region. Installation of wired lights should be carried out be authorized Specialized retailers.

Required hardware to connect lights

- S216800001: ELE MY20 SL WIRING, Y-SPLITTER FOR LIGHT, NO FUSE
- A rated front/rear light with compatible mount: 12 V only, 8 W/650 mA max.
- A rated rear light (if installed, make sure power consumption of both lights does not exceed 8 W/650 mA)
- All hardware for installation

Only installed rated lights

Running unrated lights can cause permanent damage to the e-bike system

Examples of rates lights

The following lights are rated and can be safely installed. Please refer to the technical specifications and instructions as provided by light manufacturers. Matching mounts must often be bought separately. Most lights are permanently on when the system is powered. Wired lights should be installed by authorized retailers only.

- LEZYNE EBIKE HECTO STVZO E65
- LEZYNE EBIKE POWER STVZO PRO E115 SWITCH
- LEZYNE EBIKE MICRO DRIVE 500
- LEZYNE E-BIKE CLASSIC STVZO E500
- LUPINE SL NANO (only rated if set to Eco mode)
- SUPERNOVA M99 MINI PURE-25
- SUPERNOVA MINI 3

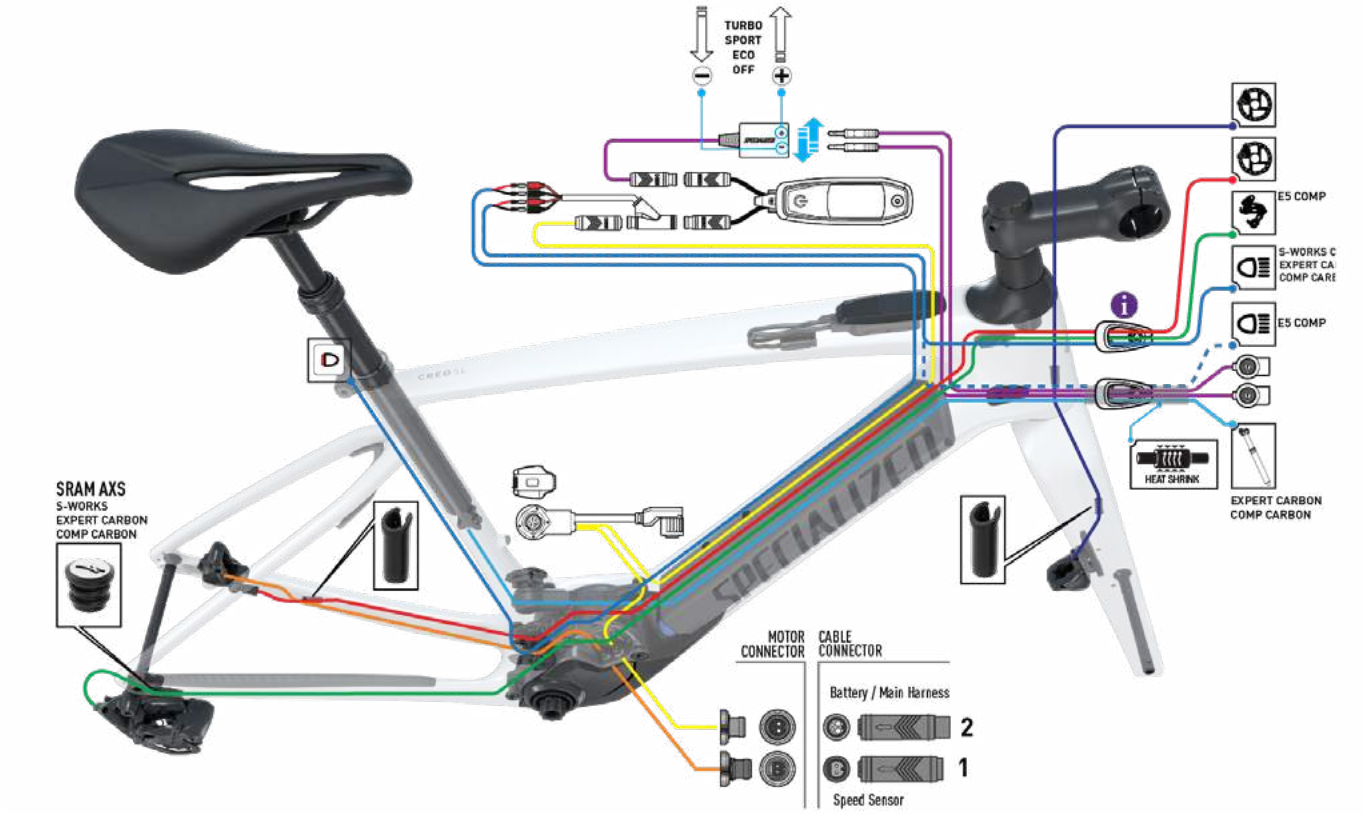
Compatibility

WIRED LIGHTS (CONTINUED)

Front light wiring/routing

- S-Works/Expert/Comp Carbon
  - The non drive side head tube cable port is designed to accommodate an additional front light cable with a max. diameter of 4 mm, so that it can enter the head tube area for connection to the Y-splitter at the display.
- Comp E5 (aluminum)
  - This model uses mechanical shifting, so that an additional light cable needs to be routed into the drive-side cable port. This port either accepts the additional light cable or dropper post housing
- Many front lights do not feature an ON/OFF switch, which means the lights are on when the e-bike system is on; this is regarded as a safety feature. Permanent lights will impact e-bike range only marginally (depending on mode/consumption between 3 and 8 watts per ride hour).

CABLE ROUTING (OPTIONAL LIGHTING)



CREO SL SCHEMATIC PAGE 16

this version of the cable schematics show the possible light cable routing paths.

Compatibility

WIRED LIGHTS (CONTINUED)

Rear light wiring/routing

- Rear lights need to be connected at the Y-splitter, just as the front light.
- With dropper post installed: The rear light cable needs to exit at the back of the motor area/cover, to be routed to the rear light itself, mounted at the seat collar, seat tube, rack or fender.
- To exit a rear light cable between the chainstays, you can either use the fender rack mount thread or file a little round opening into the back of the motor cover
- Routing a rear light cable from the motor area to the light splitter at the display is possible without removing motor or battery:
  - remove the rear wheel and motor cover
  - remove the display from the top tube cutout
  - run a guiding cable into the downtube, under the battery, to exit at the motor
  - connect the light cable to the guiding cable
  - pull the light cable up to the display cutout in the top tube; the light cable should run under the internal battery - do not pull hard if it tends to get stuck, retry with an offset routing path
- With standard/rigid seatpost: with a compatible seatpost, the wire can run through the seat tube and the seat post to exit under the saddle; there are rear lights that can be mounted at the SWAT threads of Specialized saddles or at the saddle rails with specific holders.

Lights during charging the bike battery

Wired lights will turn on when connecting a powered charger to he bike`s charge port. However, the lights can be switched off during charging by powering off the bicycle via the display. The lights will turn off and the bike battery will continue to charge. Switching off the lights during charging is recommended to extend the lifetime of the lights.

to create a clean exit for the rear light cable out of the motor area, you can use a round file to create a half-circular opening in the motor cover

Compatibility

WIRED LIGHTS (CONTINUED)

To give a practical example, we used the listed Lupine lights on a Creo 2.

Front Light

- Lupine SL Nano 31.8 with Bluetooth remote control, allowing the light to be switched off (the rear light will remain on)
- Check this compatibility table

The light needs to be run in "Eco" mode to be rated for the system

Rear light

- Lupine C14; integrated into the seat post rack clamp; great solution if no rack installed
- Lupine C14 SP (seatpost-version); good solution if rack is installed; note that you need to adapt the bracket to the 27.2 mm seatpost diameter with a suitable rubber strip (not supplied by Lupine at point of documentation)

the Lupine SL Nano F is available as Bluetooth version to control the lamp with a remote

the Lupine C14 is bright and nicely integrated into the seatpost collar

the Lupine C14 SP is a good solution if a seatpost clamp with integrated rack mounts is installed

the rear light cable is routed along the back of the seat tube, using supplied cable clips with self-adhesive patches

Compatibility

FENDERS

All Creo 2 models can be equipped with compatible fenders front and rear. These are key considerations for fender selection and important technical requirements:

General considerations

- Fenders need to be be designed for 28" / 700c tires and wheels
- Both front and rear fender need to feature a bracket to be mounted at the fork crown and the rear triangle
- Both front and rear fender require long enough struts to be mounted at the dropouts
- The rear fender requires a lower mounting point to be attached between the chainstays
- Fenders not only need to work with frame and fork, but also with the tires; ensure that there is at least 6 mm of clearance between tires and fenders, all around
- Fender clearance in frame/fork
  - Carbon frames: clearance for fenders up to 60 mm external width, allowing for enough clearance between fenders and frame/fork
  - Alloy frame: Information will follow closer to the alloy launch in 2024.
- Example Expert Carbon model uses a Specialized DryTech 52c fender set (approx. 750g/set, incl. hardware). The designation "52c" refers to the maximum tire width that can typically be run in the fenders with sufficient clearance - here 52 mm; the profile of this fender measures 58 mm in external width; the standard Tracer 47c tires can remain installed and have enough clearance in wet and muddy conditions; be aware that the tire tread design and actual tire width on the rim will influence tire compatibility with fenders; the clearance between tires and fenders should be at least 6 mm all around.

the rear triangle uses the supplied bracket to install the fender

the fork crown features a central mounting hole to install the fender - hardware is not included

Compatibility

FENDERS (CONTINUED)

Frame mounting points

- 1x fender mount thread between chainstays, at motor
  - M5 thread; use washer/sleeve between fender and frame if you need to adapt the distance between fender and tire
  - max torque 4.5 Nm / 40 in-lbf
- 2x seatstay fender mount threads to attach the supplied fender bracket
  - use the supplied M4 screws to attach the bracket to the seatstays - max torque 2 Nm / 18 in-lbf
  - use a matching M6 screw to attach the fender to the bracket (length will vary, depending on washers, etc.)
- 2x fender strut mount threads, one at each dropout
  - use the lower of the two threads
  - M4 threads; depth: 11 mm
  - max torque 6 Nm / 53 in-lbf

Fork mounting points

- 1x fork crown mount through hole
  - use a recessed nut for front brake calipers (M6 x 20 mm) and a M6 x 60 mm screw to attach the front fender bracket to the hole in the fork crown
  - max torque 6 Nm / 53 in-lbf
- 2x fender strut mount threads at the dropout
  - M4 threads; depth: 15 mm
  - max torque 6 Nm / 53 in-lbf
- Note: the 2 side mounts in each fork blade are for bottle cages or stuff bags, but could be used for fender struts, if required for angled struts
  - max torque 4.5 Nm / 40 in-lbf

Compatibility

FENDERS (CONTINUED)

These images represent the fender mounting points. Please refer to technical details (bolts, torque specs, etc.) in this document and/or the digital version of the Creo 2 user manual.

note that the length/thickness of the spacer between fender and frame will depend on the tire you are running.

Compatibility

Example Images (DryTech 52c fenders on Expert Carbon)

for needed hardware (bolts, etc.) see above

for needed hardware (bolts, etc.) see above

Compatibility

REAR RACK

All Creo 2 models can be retrofitted with a rear rack. The structural weight limit for the frame is 25 kg. A rack may limit the weight to a lower number. Here is what is needed to install a rear rack:

Required parts

1. 700c/29" rear rack with these features (use manufacturer drawings and installation guides to check compatibility)
   - compatible spacing of vertical rack struts; distance between frame mounting points is 170 mm (see drawing)
   - sufficient clearance for the used tires; standard is 700x47c (Tracer Pro)
   - sufficient clearance for fenders, if mounted or planned as later upgrade
   - at least one forward-facing strut, to be mounted at the seatpost rack collar mounts - note that the forward-facing strut(s) must be adjustable enough so that they can reach the fixation point(s) of the seatpost rack collar - generally, larger frames (58 and up) require greater adjustability
2. Seatpost collar with integrated rack mount (31.8 mm inner diameter for carbon frame, 30.8 mm for alloy frame)
   - Specialized Rear Rack Seat Collar, black, 31.8mm for carbon frames (28217-9052)
   - Tranz X Clamp & Rack (no direct web link, research product online)
   - Problem Solvers Seatpost Clamp with Rack Mounts
3. Mounting hardware
   - 2x M4 screws to fix rack legs in the upper dropout threads (torque to 6 Nm / 53 in-lbf); required screw length will vary by rack; ensure that the whole thread length is covered; thread depth: 13 mm
   - screw(s) to connect forward strut to rack mount points at seatpost collar

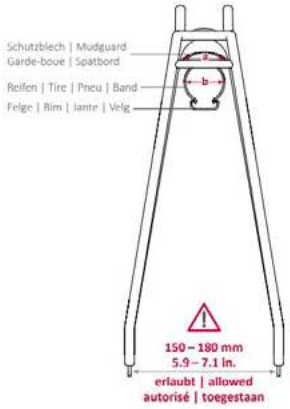
rack example (here tubus Vega Classic)

Compatibility

REAR RACK (CONTINUED)

Horizontal distance of frame rack mount points

the horizontal distance of the rack mount points is an important measurement



technical rack drawings usually state the compatible width (here tubus)

Rear rack seatpost clamp (example)

example of seatpost clamp with integrated rack mounts

this clamp allows attaching one or two rack struts

Compatibility

REAR RACK (CONTINUED)

List of tested rear rack(s), including riding.

RACK MODEL	CLEARANCE*	TESTING NOTES
tubus Fly Classic 28" minimalistic rail rack for panniers	Tires: 45 mm Fenders: 50 mm	• ideal in combination with low profile tires or smaller tires than 47c • used one 3 mm spacer at each dropout so that vertical rack stays clear seatstays • forward-facing strut needs to be bent to align with seat post rack collar (see rack manual) • tested with standard Tracer Pro 47c and Rhombus Pro 47c tires, w/o fenders: clearance still sufficient • tested with Ortlieb Bike-Packer Classic pannier
tubus Vega Classic 29" classic rail rack for panniers with extra clearance	Tires: 60 mm Fenders: 65 mm	• the 29" version is about 2 cm higher than the 28" version and therefore preferred if you want to use wide tires, an addtional fender and/or long panniers • Used standard Tracer 47c tires, with 52c Drytech fenders (profile width 58 mm) • tested with Ortlieb Bike-Packer Classic pannier

*official manufacturer specification

Compatibility

REAR RACK (CONTINUED)

Rack examples images for tubus Fly Classic 28”

Compatibility

REAR RACK (CONTINUED)

Rack examples images for tubus Vega Classic 29"

the 29" version of the Vega Classic is 2 cm higher than the 28" version, providing more clearance for wide tires, fenders and long panniers.

the two forward-facing struts ensure good stiffness when loading the rear rack to the maximum.

a Specialized Tailwind pannier on the tubus Vega Classic 29 - the pannier is pretty long, but would also clear nicely on the drive side.

at the dropouts, two 3 mm spacers were used so that the rack legs clear the seatstays

Compatibility

REAR RACK (CONTINUED)

Rack examples images for tubus Vega Classic 29", combined with Drytech 52c fenders

the tubus Vega Classic offers ample of clearance for the DryTech 52c fenders

rear rack and fenders share the lower mounting points

Compatibility

FRONT RACK COMPATIBILITY

Creo 2 models are compatible with certain low rider front racks and also the Specialized Pizza Rack. The structural weight limit for cargo at the front is 14 kg / 30 lb. A rack or other accessory may limit the weight to a lower number.
Note on front rack reference in bike manual: early printed manuals wrongly declare front racks are incompatible. The digital version got corrected.

Required parts

1. Compatible low rider rack (use manufacturer drawings and installation guides to check compatibility)
   - ensure that the rack is compatible with the horizontal distance between the mounting points in the fork blades (see drawing)
2. Mounting hardware
   - typicall supplied with front rack (M4 screws, washers, spacers, etc.)
   - note that you may need additional/different spacers or screws

List of tested front rack(s)

RACK MODEL	TESTING NOTES
tubus tara Classic lowrider front rack for compact panniers	• used Rhombus 47c tires, with and without Drytech 52c fenders • used supplied 8 mm spacer at top mount points and 3 mm spacers (not supplied) at lower mount points • tested with Ortlieb Bike-Packer Classic pannier • ensure to distribute weight evenly to both sides for better control; fill front panniers with lighter gear and rear rack with heavier items

the horizontal distance between the mounting points is a critical measurement to choose a compatible front rack

compact panniers are ideal for use at the front; tip: use 2 panniers for even weight distribution

Compatibility

FRONT RACK (CONTINUED)

Rack examples images for tubus tara

the tubus tara is a functional and clean solution; here, the pannier rail is not perfectly horizontal for clearance reasons of the thru axle (see below).

the pannier rail should be horizontal as shown in this image, but a slight angle (left image) is not a problem.

note that in this mounting position the pannier rail is not perfectly horizontal (see above), but the thru axle can be inserted/removed without unscrewing the lower mount and losening other bolts.

note that in this mounting position the pannier rail is perfectly horizontal (see above), but the thru axle cannot be inserted/removed without unscrewing the lower mount and losening other bolts.

to adapt to the fork width, the supplied 8 mm washers are used at both top mount points

to adapt to the fork width, 3 mm washers (not supplied) are used at both lower mount points

Compatibility

FRONT RACK (CONTINUED)

Rack examples images for tubus tara

front racks can be combined with fenders - mounting the struts at the fork dropout may require special attention/solutions

here, the drive side fender strut clamp is combined with the lower rack mount screw

on the non-drive-side, fender strut and rack use a shared mounting point, which means the strut clamp needs to be removed before inserting/removing the thru axle; further, the fender strut touches the rack rail

spacers are used to add the needed clearance

Compatibility

SADDLE SWAT

All saddles feature mounts, e.g. for a Stix light saddle mount or Bandit. This allows you to integrate a safety light or carry some essentials to repair a flat.

the Stix rear light integrates nicely into the saddle and adds the needed safety

the Road Bandit allows you to carry a tube, tire lever and a CO2 cartridge (not used here) with valve

Compatibility

REAR VIEW MIRROR

Rear view mirrors may not be the sexiest accessory, but they are a simple and great way to enhance your safety and convenience, especially when riding in traffic. Combine it with an ANT radar to round off your "safety package" - this way you can look into the mirror whenever your radar alerts you about approaching vehicles.

This example uses a Cateye BM-45 mirror, which works fine with the default handlebar. Note that functionality will depend on your handlebar and its adjustment angle.

12 bike building & service.

Essential Resources (Retailers)

SERVICE WEBSITE / B2B

All bike building and servicing resources are archived on the Service Website and/or the new B2B.

Visit a Turbo Creo 2 model to access the needed information, such as service parts, manuals, technical bulletins, videos and other technical information.

SCHEMATICS

The PDF with schematics and small parts for the Creo 2 is an important technical resource as it contains detailed assembly instructions, exploded views, cabling diagrams, torque specifications, service part numbers and more. These are the main chapters:

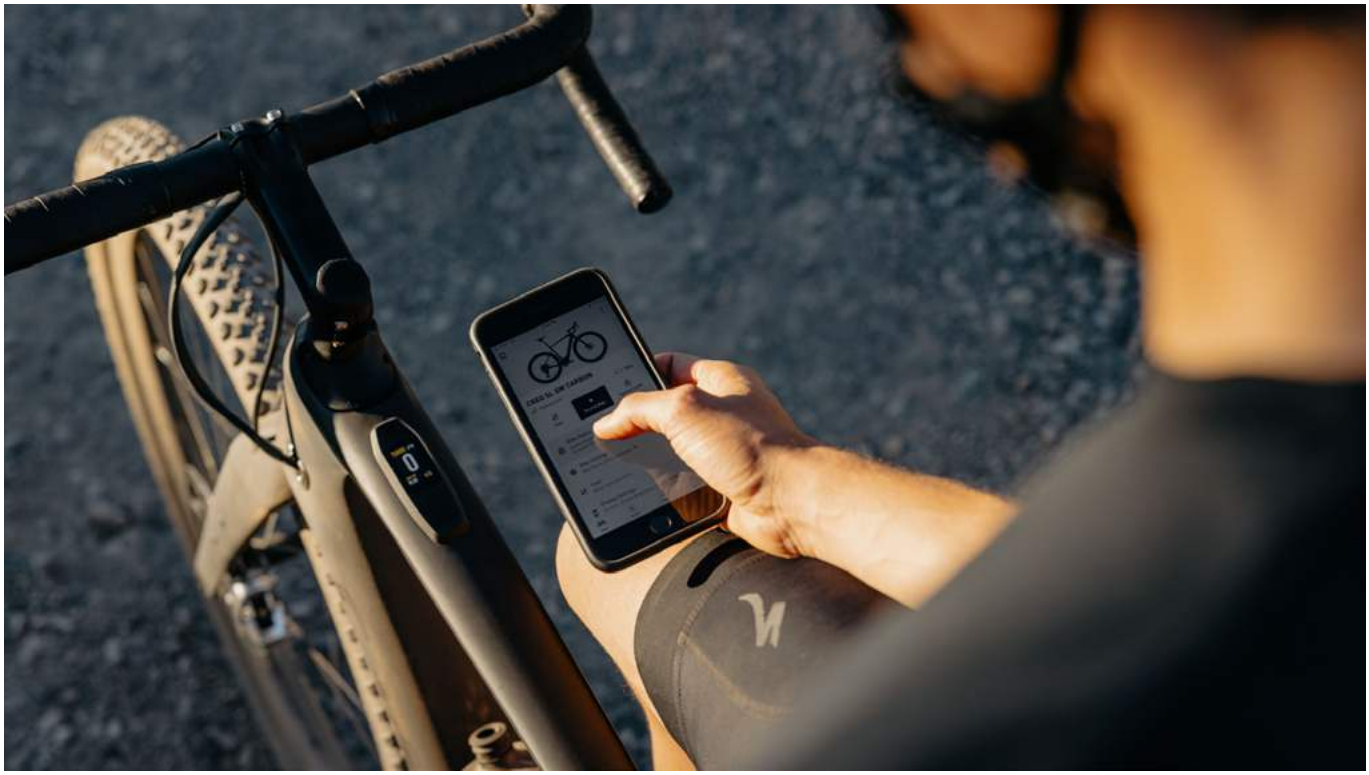
- SCHEMATICS - SMALL PARTS
- ASSEMBLY PROCESS ORDER
- ASSEMBLY DIRECTION
- TORQUE SPECS
- MOTOR MOUNTS
- MOTOR BOLTS
- CHAINRING / SPIDER / CRANK
- MOTOR COVER
- FUTURE SHOCK - HEADSET AND COLLAR
- FUTURE SHOCK - COLLAR
- FUTURE SHOCK - SHOCK AND STEM
- ICR PORT / CHARGE PORT
- MASTERMIND TCU
- SPEED SENSOR
- DERAILLEUER HANGER / SEATPOST CLAMP
- CABLE ROUTING - ALL
- CABLE ROUTING - SYSTEM SETUP

Rider Handover (Retailers)

Service Manager within Turbo Studio guides retailers through bike handover scenarios to ensure riders are set up appropriately and have all important information right from the beginning.

The handover process uses phases with several steps which can be marked done using checkboxes. At the end, important upcoming service activities can be scheduled and future recommendations can be noted. Further, the rider`s email address can be entered so that riders receive an e-mail with information on how to register their bike.

All service activities, including the “Handover”, are available as PDFs and will show in the Service Log of Mission Control so that riders have a record for past and upcoming events.



Diagnostics (Retailers)

This section outlines the diagnostics and trouble-shooting resources we provide.

GENERAL (RETAILERS)

- Differentiate between normal system behavior and functional issues
- Make sure firmware is up-to-date before diagnostics process
- Go about logically and systematically
- Run digital diagnostics with all MasterMind TCD/TCU/TCD-w bikes - use the Event Log and Service Actions in Turbo Studio
- Make use of remote diagnostics with riders. Ask them to upload their 'Advanced Diagnostic' through the app
- Have relevant Service Parts at hand

DIAGNOSTICS GUIDE IN TURBO STUDIO (RETAILERS)

- Within Turbo Studio, you will find a Diagnostics Guide that allows you to run step-by-step diagnostics in case of functional issue with the Turbo e-bike system of any Turbo bike
- The additional Knowledge Base inside Turbo Studio allows you to access contextual information, such as definitions for error messages

in case of live errors, many Turbo displays show messages and it is worth checking the app for further advice (esp. riders)

Turbo Studio (retailers) allows looking up bike information by serial number entry (1) and offers a step-by-step diagnostics guide (2)

Spoke Lengths

These spoke lengths refer to the default wheel configuration.

MODEL	SPOKES/ NIPPLES	SPOKE LENGTHS FRONT		SPOKE LENGTHS REAR	
		DRIVE SIDE	NON-DRIVE-SIDE	DRIVE SIDE	NON-DRIVE-SIDE
S-WORKS	DT Swiss Aerolite T-head DT Swiss Hex Prolock Al 2.0x14 mm nipples	278 mm	290 mm	290 mm	288 mm
EXPERT	DT Swiss Competition Race J-bend DT Swiss Hex Prolock Al 2.0x14 mm nipples	268 mm	279 mm	277 mm	278 mm
COMP CARBON COMP E5	DT Champion, 2.0 mm DT brass nipples, 2.0x12 mm	285 mm	284 mm	282 mm	284 mm

13 guidelines & tips.

User Manual & Yellow Sticker

IMPORTANCE

Please read, use and follow the Creo 2 User Manual. It contains important general information about your bicycle and specific information about assembly, components, riding and maintenance.

Please periodically check www.specialized.com or contact Rider Care to make sure you have the latest information.

CALL TO ACTION (RETAILER)

Show the bike manual and reference important sections such as “General notes about riding”.
Peel the yellow “Peel Me Sticker” and place it on the last page of Creo 2 User Manual.

the yellow sticker needs to be applied to the last page of the bike manual

each Turbo bike comes with important documentation

Riding With Kids

GENERAL

All Turbo Creo 2 models are only designed and tested for use by one person at a time.

See Owner`s Manual Addendum "Riding with Kids" for detailed information.

Cargo trailers, child trailers and any other child carrying devices are neither tested nor approved.

ALTERNATIVE COMPATIBLE BIKES

Some Specialized Turbo Active bikes are compatible with trailers and child seats.

Please visit our Support Center section "Riding with Trailers, Child Seats, and Cargo" for an overview and contact your local Specialized retailer for further recommendations

Practical Tips - General

This section supports riders with some essential tips for using their Creo 2 bicycle. Please refer to the bike user manual in addition and have your bike regularly serviced by your local Specialized retailer.

GETTING STARTED

- Have your bike set up and personalized at your local Specialized retailer
- Familiarize yourself with the user manual and all other documents that come with your bike
- Follow the guidance in the user manual
- Register your bike through the app or on www.specialized.com

Practical Tips - E-Bike System

E-BIKE SYSTEM

General

- Always power the bike off before running maintenance, connecting/disconnecting a Range Extender battery or charging the bike
- Keep the bike firmware up-to-date (app / local retailer)
- Be familiar with Normal System Behaviour

Charging

- If you have wired lights connected, turn them off during charging by powering the bike off after charging initiated - the lights will turn off and the bike will keep charging
- Use the Y-charging cable (part 98920-5660) if you want to charge the internal battery and one Range Extender simultaneously
- Do not move the crank arms or bike when charging
- If you charged the Range Extender battery while installed in the bottle cage, reconnect the RE cable at both ends after charging

Batteries

- Be aware that batteries age over time and through usage (reduced range)
- Batteries have undercharge and overcharge protection, so that they can be charged/discharged as needed
- Avoid exposing your batteries to extreme temperatures, e.g. do not let them/the bike sit in direct sunlight for long, or in a car that heats up.
- In the cold season, keep your Turbo batteries at room temperature before riding in cold conditions – if the battery is not removable, keep your bike inside till you ride
- When not using batteries for a long period, leave them at a charge level of about 60%. Store them/the bike in a dry place at moderate temperatures. Recharge to 60% every three months

Practical Tips - Riding

RIDING

- Run a quick safety check before every ride and adjust the tire pressure
- Know how to fix a flat and carry all the essentials to keep you going
- Use the Specialized App to tune motor parameters, diagnose the system, record rides, and much more
- Pedal in a smooth cadence spectrum (75 rpm and higher) for best efficiency/range - use the cadence screen on MasterMind TCU to monitor your cadence
- Briefly reduce pedaling power during shifting for smoother gear changes and extended drivetrain life

Practical Tips - Maintenance & Service

GENERAL MAINTENANCE

- Regularly clean and lubricate the drivetrain, ideally before or after each ride
- Regularly clean the magnet on the rear wheel with a cloth. Brake dust with metal parts can collect and cause issues
- For instructions on how to clean third party components, refer to the respective manufacturer's instructions

SERVICING

- Have your bike regularly serviced at your local Specialized retailer - your retailer will make recommendations for your personal service scheme
- We recommend regular check-ups and at least one complete service per year

Practical Tips - Cleaning

WASHING VIDEO

This video will guide you through some key principles when washing Turbo bikes.

CHECK-STEPS BEFORE CLEANING

- Always turn the bicycle off before cleaning
- Remove the Range Extender battery and all other accessories
- Ensure the charge port cover is closed

WASHING & CLEANING RULES

- Never use a high-pressure cleaner or high-pressure hose when cleaning your Turbo bike
- Best practice is to use a bucket of water with a wet cloth or a sponge
- Never point water directly at sensitive areas such as the drivetrain, suspension parts, the dropper post, all bearings and seals, the motor area, batteries, displays and all electronic connectors
- Regularly clean the magnet on the rear wheel with a cloth. Brake dust with metal parts can collect and cause issues
- Clean the Range Extender battery and cable with a soft, damp cloth
- For instructions on how to clean third party components, refer to the respective manufacturer's instructions

AFTER WASHING / BEFORE BIKE USE

- Allow more sensitive areas to dry out (e.g. leave the charge port door open over night)
- Make sure the charge port is free from water and/or dirt - if contaminated, remove contamination with low air pressure or a soft brush
- Clean and relube the drive train system, using a lint-free rag and high-quality chain oil. Ideally, you do this before/after each ride
- For instructions on how to maintain third party components, refer to the respective manufacturer's instructions

Practical Tips - Transportation

BY CAR

- Only use car racks suitable for e-bikes and follow the manufacturer's manual
- Remove any removable batteries and accessories from the frame and transport the items inside
- Do not drive at high speeds, especially when wet
- Do not place bike parts close to the exhaust pipes, especially rims/wheels - the heat from the exhaust(s) can damage parts

BY AIRPLANE

- On passenger airplanes all batteries with a capacity greater than 100 Wh are usually not allowed
- Before planning your trip, contact your airline for details

Structural Weight Limits

DEFINITIONS

- STRUCTURAL WEIGHT LIMIT: The maximum total weight (rider and cargo) a bicycle is designed and tested to support structurally.
- CARGO WEIGHT LIMIT: The maximum cargo weight a bicycle has been designed and tested to support. Note that a accessories may limit the max. weight to a lower number (e.g. a rear rack that is only approved to max. 15 kg)

LIMITS LB / KG

MODEL	STRUCTURAL WEIGHT LIMIT*	MAX. CARGO WEIGHT
ALL MODELS	275 lb / 125 kg*	Rear: 55 lb / 25 kg Front: 30 lb / 14 kg

*the Terra carbon components on S-Works and Expert models do not limit the max. structural weight to 240 lb / 109 kg as with many other carbon components; Terra wheels and handlebars accept 275 lb / 125 kg.

Turbo bikes come with the CE lable (varies by market)