

Wilier TRIESTINA

ADLHAR

HYBRID

TECHNICAL INTRODUCTION
REV.01

ADLAR
HYBRID

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WILIERPEDIA 2025

E-GRAVEL COLLECTION

Cycling long distances, alone or with company, away from traffic and the hustle and bustle of modern life. Taking everything you need with you. Listening to your body's rhythm: eating when you need to, sleeping and savouring every instant. No matter where.

The Adlar Hybrid is the natural development of our gravel platform dedicated to adventure. The DNA is the same as the Adlar with the addition of the central TQ HPR50 motor. The complete power unit weighs just 3.9 kg. The 50 Nm of torque and peak power of 300 W make for a smooth pedal action without jerking. It doesn't matter if you are simply cycling to the next village or heading towards your first major milestone a few kilometres away from home. To each their own goal.

Adlar Hybrid: setting off and moving the destination a little further.

ADLAR
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ADLAR SOUL

Aside from the assisted pedalling, the Adlar Hybrid shares the Adlar's intended use, carbon fibre frame, geometries and five frame sizes. Only the angle of the head tube has changed from 70° to 69.5°.



BEST IN CLASS

We entrusted the pedal assistance system to the 1,850 gr of the TQ HPR50 motor. The quietest of off-road riding central motors which also impresses with its compact size and clean-cut design and a much lighter weight than the competition. Not to mention the biomechanical benefits. The Q factor, in other words the distance between the rotation planes of the crank arms, is comparable to that of a Shimano GRX crank set on a conventional bicycle.



EVERYTHING AT YOUR FINGERTIPS

A purpose-designed compartment on the top tube accommodates the 2-inch O-Led display with all the system information and active connections. The three levels of pedal assistance together with the walk mode can be activated using the remote button located on the top of the handlebar.



YOUR NEXT LIMITLESS ADVENTURE

The capacity of the TQ HPR50 power unit increases with the 160 Wh bicycle water bottle-shaped range extender with a minimalist connection port. When charging, the power unit automatically detects the presence of the range extender and tops up the battery first followed by the range extender in one operation. Depending on environmental conditions, it takes between 2 to 3 hours to charge fully.



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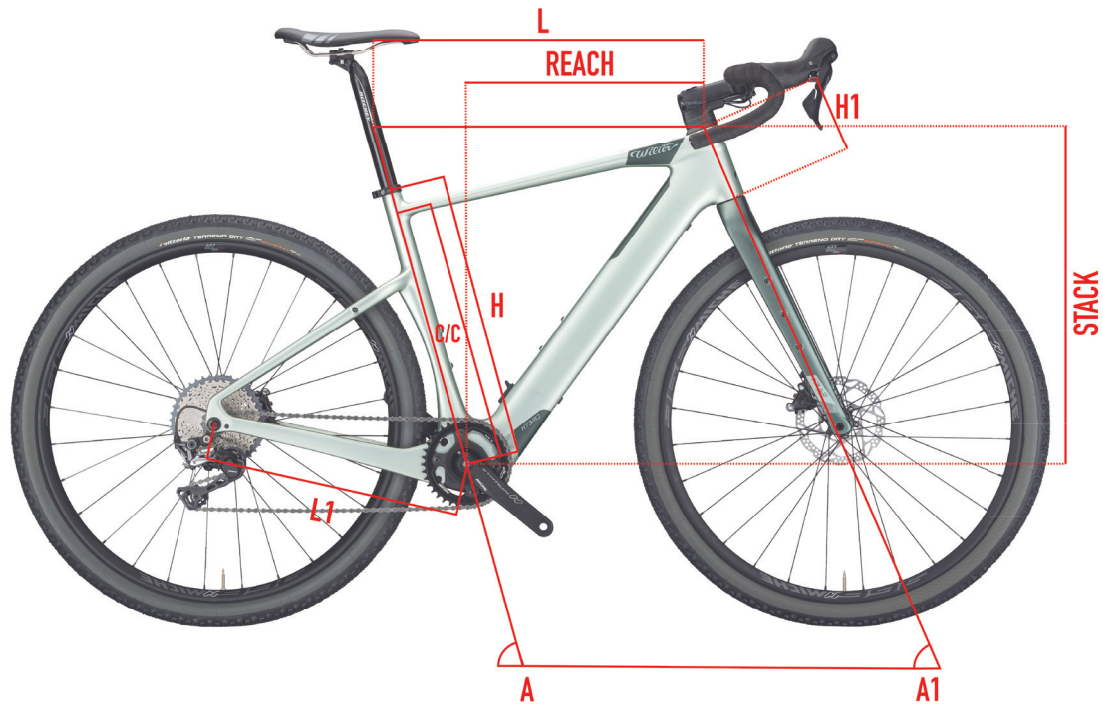
COLOR	MINT GREEN
FINISH	MATT
COLOR CODE	Y24



COLOR	BLACK, GREY
FINISH	GLOSSY
COLOR CODE	Y23



GEOMETRIES AND SIZES

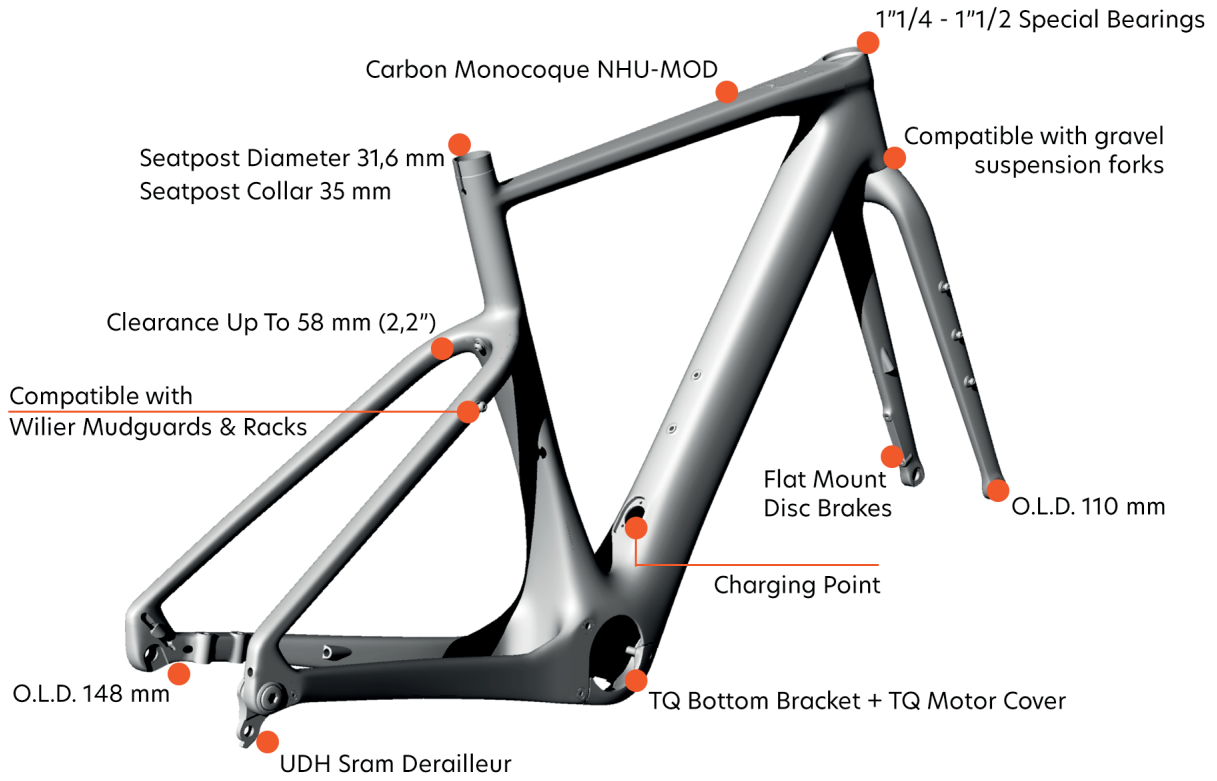


	REACH	STACK	H	C/C	L	A	H1	L1	A1	WHEEL-BASE
SIZE	[mm]	[mm]	[cm]	[cm]	[cm]	[°]	[cm]	[cm]	[°]	[mm]
XS	395	538	44	38	54.7	75	10	44.1	69.5	1060
S	404	562	47	41	56.3	74.5	10.6	44.1	69.5	1071
M	413	586	50	44	58.3	74	13.2	44.1	69.5	1089
L	422	610	53	47	59.9	74	15.8	44.1	69.5	1107
XL	431	634	57	51	62.1	73.5	18.3	44.1	69.5	1125





KEYPOINTS



FRAME AND TECHNICAL SPECS DETAILS	
HEADTUBE	1"1/4 - 1"1/4
UPPER BEARING	WTP - BEARING-SSLIM 39 X 46.9 + WTP-2SCOMPRING
LOWER BEARING	MR137
FRONT FORK O.L.D.	110 mm - THRU AXLE 15x135
REAR STAYS O.L.D.	148mm - THRU AXLE 12X178,5
BB SHELL	TQ MOTOR HOUSING
SEAT POST	ROUND 31,6mm

FAQ

How powerful is the HPR50?

We use energy as efficiently as possible, so we don't need an excessive amount of Newton meters. The TQ-HPR50 drive system supports exactly as much as necessary and where you need it and it is virtually invisible. With its minimum weight and integration space, you will enjoy an exceptional riding experience as you decide how you to ride it. With its 50 Nm, you can ride your e-bike just like a regular bike but more, further, higher.

How efficient is the TQ-HPR50 drive unit?

The electric motor in the TQ drive unit has been designed specifically for its intended application and achieves an efficiency of over 90%. The optimized coordination of drive unit, battery management system and power sensor technology allows for maximum yield of the battery capacity. However, the efficiency of the drive unit is only one link in the efficiency chain. The efficiency of the overall system - the motor, battery and their software - is the defining feature in terms of battery life. The software and hardware of the HPR50 system have been entirely developed and manufactured by TQ, so that all components are optimally matched, thereby ensuring very high system efficiency.

Does the e-bike motor deliver power even when I don't pedal?

No. When riding without motor assistance, the HPR50-equipped e-bike behaves like a regular bike. This is due to the specially developed freewheels which completely disengage from the motor and transmission.

How do we create the natural riding experience?

Instead of using a common torque sensor, TQ has redesigned and patented its own which measures the following variables: crank speed, crank acceleration and the forces of both pedal cranks measured individually. A specially developed algorithm uses these data to control the motor and, in addition to seamless response, it also enables the natural riding experience. Besides, the new force sensor is now smaller and lighter.

Are chargers from other brands safe to use?

The active charger communicates with the battery throughout the charging process, while also monitoring several factors such as cell parameters, external temperature and many more. This allows to optimise charging times without damaging the battery. However, it also means that no chargers of other brands can be used, but TQ's only.





What is the capacity of the battery?

The TQ-HPR50 e-bike system is equipped with a 360 Wh battery.

Can the battery capacity of the TQ e-bike system be extended?

Weighing only 950 gr., the TQ range extender adds 160 Wh to the battery. Small and light as a water bottle, it fits perfectly in the specially designed bottle cage [MB6]. This way, your e-bike rides will be even longer.

How does the charging process work when the range extender is installed?

It is extremely simple. Just connect the charger to the range extender, which has to be connected to the bike's charging port. Our software detects the range extender and starts the charging process. However, the main battery will always be charged first, followed by the range extender. This way you can always start your ride with a full main battery and leave the empty range extender at home, in case you did not have enough time to charge both.

How long does it take to charge the main battery?

It takes about 2-3 hours to charge the internal battery of the TQ-HPR50 e-bike system and be ready for your next adventure.

What is the range of the TQ-HPR50 e-bike system?

The range mainly depends on the following factors: the kind of terrain you are riding on, the level of assistance you are using, the total weight you are carrying and some external factors, including temperature.

Our software takes these and many other factors into account and calculates the remaining battery range based on the rider profile. These data are then shown on the fully integrated display and are constantly updated.

For example:

Our 75 kg test rider who has already ridden 50 km with a 1200 meters elevation gain by using the highest support level on the steepest terrains, and a medium support level on flat terrains, will still be able to cover over 100 km.

Can I connect my smartphone to the TQ-HPR50 equipped bike?

Yes, via ANT+. Like any other sensor, you can connect your smartphone or ANT+ compatible watches to the bike compute. In addition, you can connect your bike via Bluetooth using the TQ E-Bike App and thus customise motor tuning, for instance.

What should I do if I see an error on the display?

An error may be shown on the display for different reasons. You can click on the following link to find out the cause and its solution: <https://www.tq-ebike.com/en/support/manuals/error-codes/>



What do I have to do before riding my new e-bike with TQ-HPR50 for the first time?

It is very important that you fully charge the battery before your first ride. Only then will the battery and all the functions be ready for use.

Which components are standard in setups that feature the bikepacking kit?

Setups that feature the bikepacking kit include the front carrier, the rear carrier, the fixing pins and a set of 4 bags.

How are carriers, mounted on the bike?

Carriers can be mounted on the bike using the fixing pins provided. The front pin measures 15x167 - M15x1.5, while the rear pin measures 12x197 - M12x1

Can I mount a front derailleur on the bike?

No, the Adlar Hybrid is not designed for mounting a front derailleur and therefore, it is impossible to fit a double crank set.

Can I fit 27.5" wheels?

The TQ-HPR50 system measures speed by multiplying the rear wheel circumference by the number of revolutions. Therefore, by changing the wheel size, the actual speed could turn out to be illegal. The relevant regulations are very strict and to ensure that TQ-powered bikes comply with the allowed maximum speed, the software is set for each bike's standard wheels and cannot be changed.

Can I fit mudguards?

Yes, the Adlar Hybrid can be fitted with Wilier Triestina mudguards that are compatible with the design of the bike and carriers. The mudguards can be purchased from Wilier Triestina's Official Dealers.

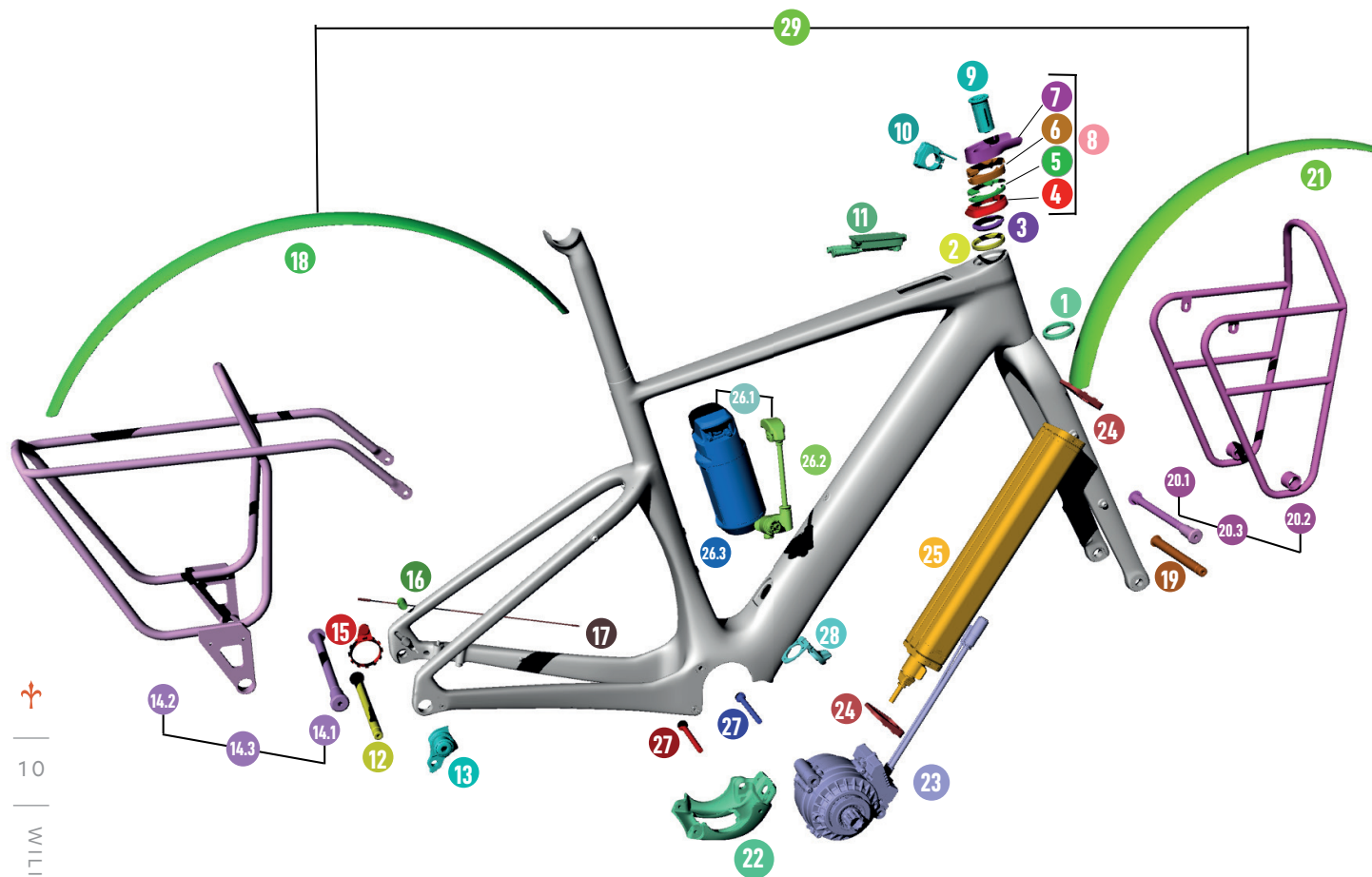
Can I install suspension forks on the Adlar Hybrid?

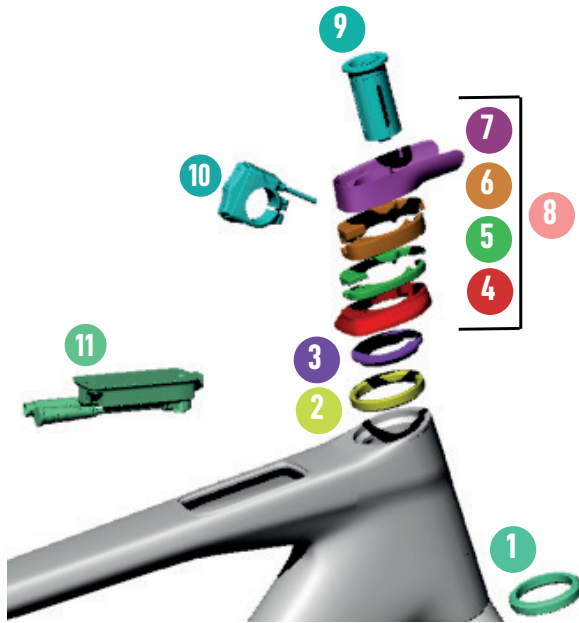
The Adlar Hybrid has been designed to be compatible with some of the most modern suspension forks the market has to offer. The head tube measures 1-1/4" at the top, 1-1/2" at the bottom. The installation of a suspension fork does not compromise the final geometry of the bike.





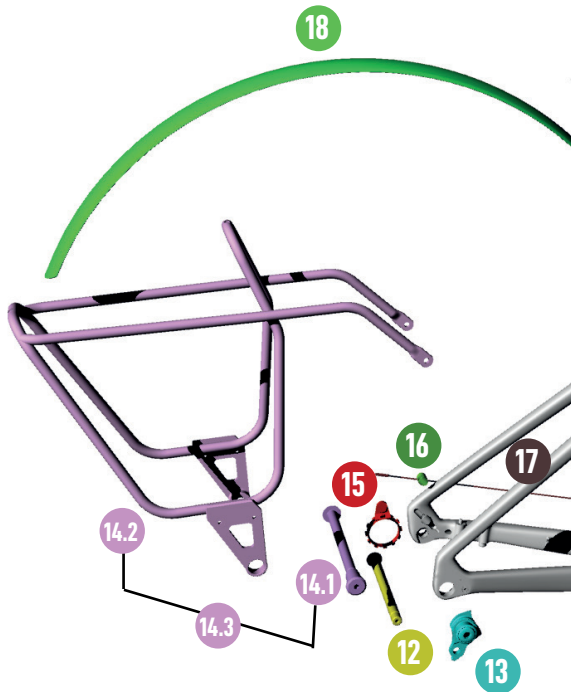
SPARE PARTS





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- 9
- 10
- 11

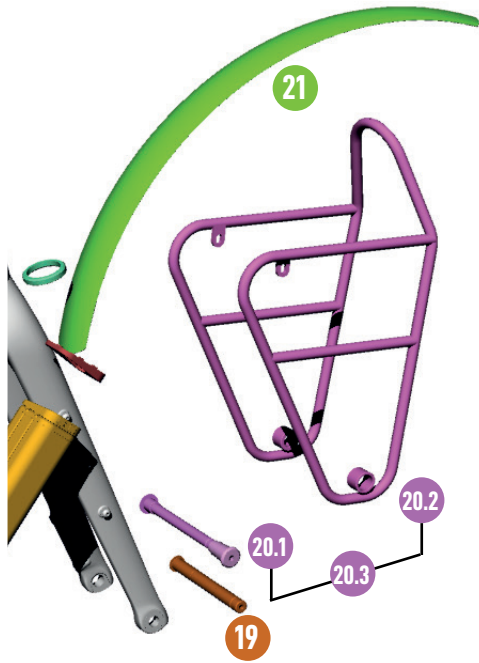
SPARE PARTS		
1	33035336013	RITCHEY HEADSET SEAL CARTRIDGE HT52-56MM
2	WTP-BEARING-SSLIM	BEARING SUPERSLIM 39 X 46.9 X 7 SSLIM
3	WTP-2SCOMPRING	COMPOSITE COMPRESSION RING
4	WOTC	TOP COVER
5	WTP-ZSPACERS5	SPACER 5MM (DX+SX)
6	WTP-ZSPACER10	SPACER 10MM (DX+SX)
7	WTP-STEMCC	RITCHEY STEM CABLE GUIDE FOR BARRA SL
8	WKITCCOL	KIT SPACERS ADLAR
9	EXROUFK	ROUND FORK EXPANDER
10	349625	TQ HPR REMOTE RK
11	329589	TQ HPR DISPLAY



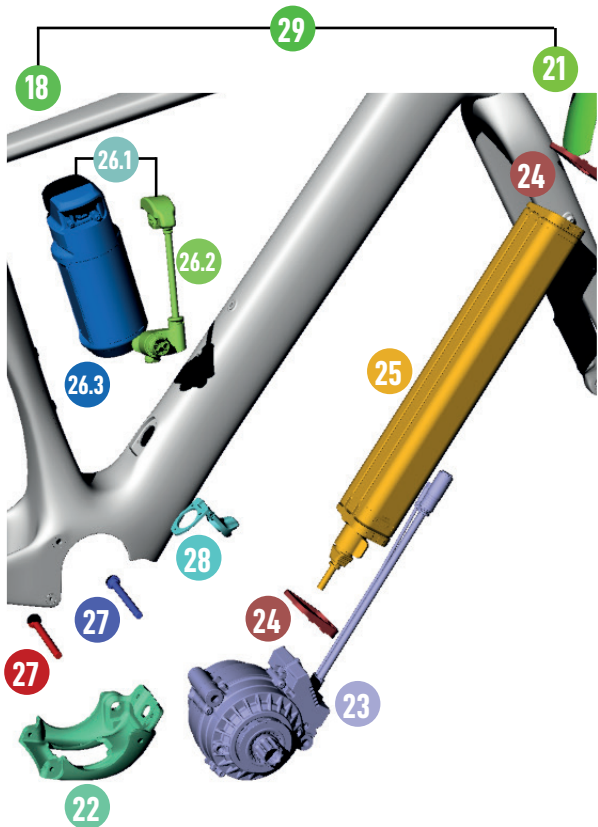
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- 13
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- 14.2
- 14.3
- 15
- 16
- 17
- 18

SPARE PARTS		
12	WTPTA12178.5	REAR AXLE LEVER 12X178.5 ADLAR HY
13	007918089000	SRAM AC UDH DERAILLEUR HANGER
14.1	AFT-WTPTA12200BST	THRU AXLE REAR 12X200 ADLAR HY
14.2	AFT-WT-RACKSR	ADLAR REAR RACK
14.3	WT-REARKBPO2	REAR KIT BIKE PACKING ADLAR HY
15	334675	TQ MAGNET CENTERLOCK EXT. SERRATION
16	WTP-CFIXSS	SPEED SENSOR MOUNTING BRACKET
17	334672	TQ SPEEDSENSOR CABLE ASSEMBLY
18	WT-MUDGR	ADLAR REAR MUDGUARD





SPARE PARTS	
19	WTPTA15135 FRONT AXLE LEVER 15X135 ADLAR HY
20.1	AFT-WTPTA15170BST THRU AXLE FRONT 15X170 ADLAR HY
20.2	AFT-WT-RACKSF ADLAR FRONT RACK
20.3	WT-FRONTKBPO2 FRONT KIT BIKE PACKING ADLAR HY
21	WT-MUDGF ADLAR FRONT MUDGUARD



SPARE PARTS	
WT-MUDGF	ADLAR FRONT MUDGUARD
329587	TQ DRIVE UNIT (DU) W/CABLES
334680	TQ HPR-BAT01 BRACKET VERTICAL CONNECTOR
334681	TQ HPR-BATTERY BRACKET VERTIKAL
KIT-329592	TQ HPR RANGE EXTENDER +CABLE +FIX SCREW
340956	TQ RANGE EXTENDER CABLE (260MM)
329592	TQ HPR RANGE EXTENDER V01 160WH
344743	TQ DU FIXING BOLT ALTERNATIVE FRONT 80MM
344743	TQ DU FIXING BOLT ALTERNATIVE FRONT 80MM
334414	TQ CHARGERPORT COVER
WT-MUD01KIT	KIT MUDGUARD ADLAR



