



## Maintenance, Service and Repair of WTB Proterra and Speedterra Hubs

### 1. Before you start

#### **⚠ WARNING**

All WTB products should be installed and serviced by a qualified bicycle mechanic using appropriate professional tools. *WTB assumes no liability for products which are improperly installed, removed, assembled, disassembled or configured. Improper installation, adjustment or service may result in damage to the component or component failure.*

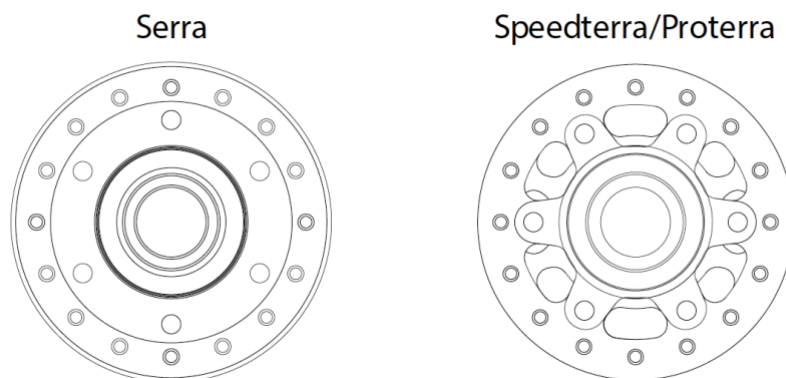
Use only genuine WTB replacement parts.

#### **⚠ DANGER**

After any installation, adjustment or repair, test your work by taking a test ride in a controlled environment, away from cars, fellow cyclists, obstacles or other hazards.

Failure to follow these instructions can result in component failure. Component failure can cause the rider to lose control of the bicycle and fall, leading to serious injury or death.

(a) Identify your hub. Graphics on the hub shell for Speedterra and Proterra hub models include a topographic pattern. Proterra/Speedterra hubs are also machined out in between the threaded holes of the disc mount area while Serra hubs are not. *If your hubs do not have a topographic pattern on the hub shell or do not have the machined disc mount area seen below, find the correct service manual for your WTB hub model on the following webpage, [www.wtb.com/pages/resources](http://www.wtb.com/pages/resources). Proterra hubs are identified by a black freehub body, while Speedterra hubs are identified by a silver freehub body. Both Proterra and Speedterra hubs are assembled and disassembled using the same steps, however, some internal components do differ. All replacement parts are compatible with both hub models and serve as a direct replacement in Proterra hubs whereas they are a compatible upgrade in Speedterra hubs.*



(b) Make sure you have read the WTB hub instructions which are available in this document as well as the WTB website at [www.wtb.com/pages/resources](http://www.wtb.com/pages/resources).

(c) Follow each step of these service instructions.

### 2. Tools and Equipment

To disassemble and reassemble your hubs, you will need the following tools:

- Two 17mm cone/hub wrenches
- 2mm hex key (not required in all instances)
- 11mm hex key (not required in all instances)

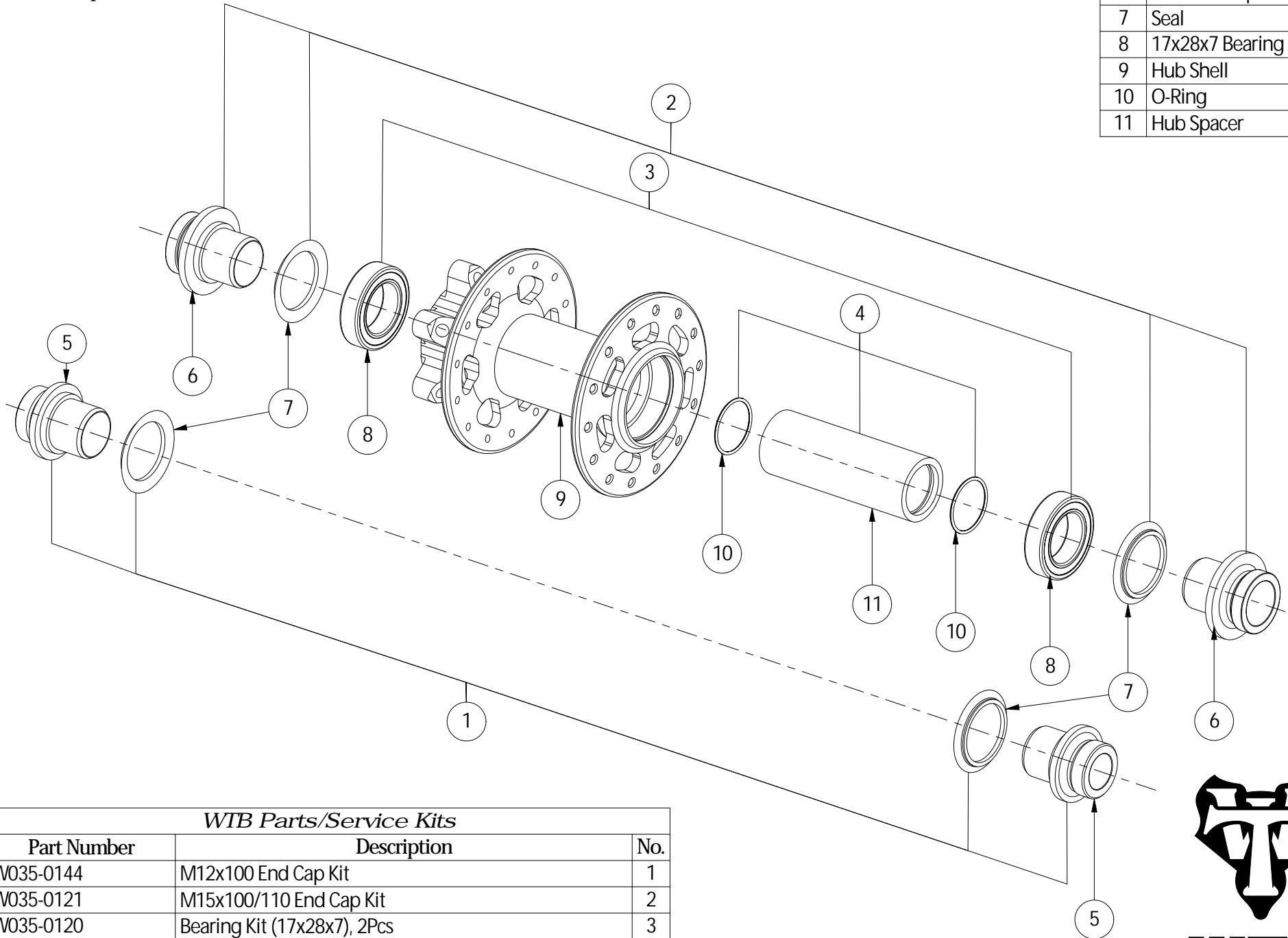
3. **Serviceable Parts:** High resolution schematics available at [www.wtb.com/pages/resources](http://www.wtb.com/pages/resources)

# WTB Speedterra and Proterra 100 x 12 Front Hub

W135-0656 Proterra 100x12 (28 hole)

W135-0660 Speedterra 100x12 (28 hole)

No.	Description	Pcs
5	M12 End Cap	2
6	M15 End Cap	2
7	Seal	4
8	17x28x7 Bearing	2
9	Hub Shell	1
10	O-Ring	2
11	Hub Spacer	1



WTB Parts/Service Kits		
Part Number	Description	No.
W035-0144	M12x100 End Cap Kit	1
W035-0121	M15x100/110 End Cap Kit	2
W035-0120	Bearing Kit (17x28x7), 2Pcs	3
W035-0119	100mm Axle and O-rings	4



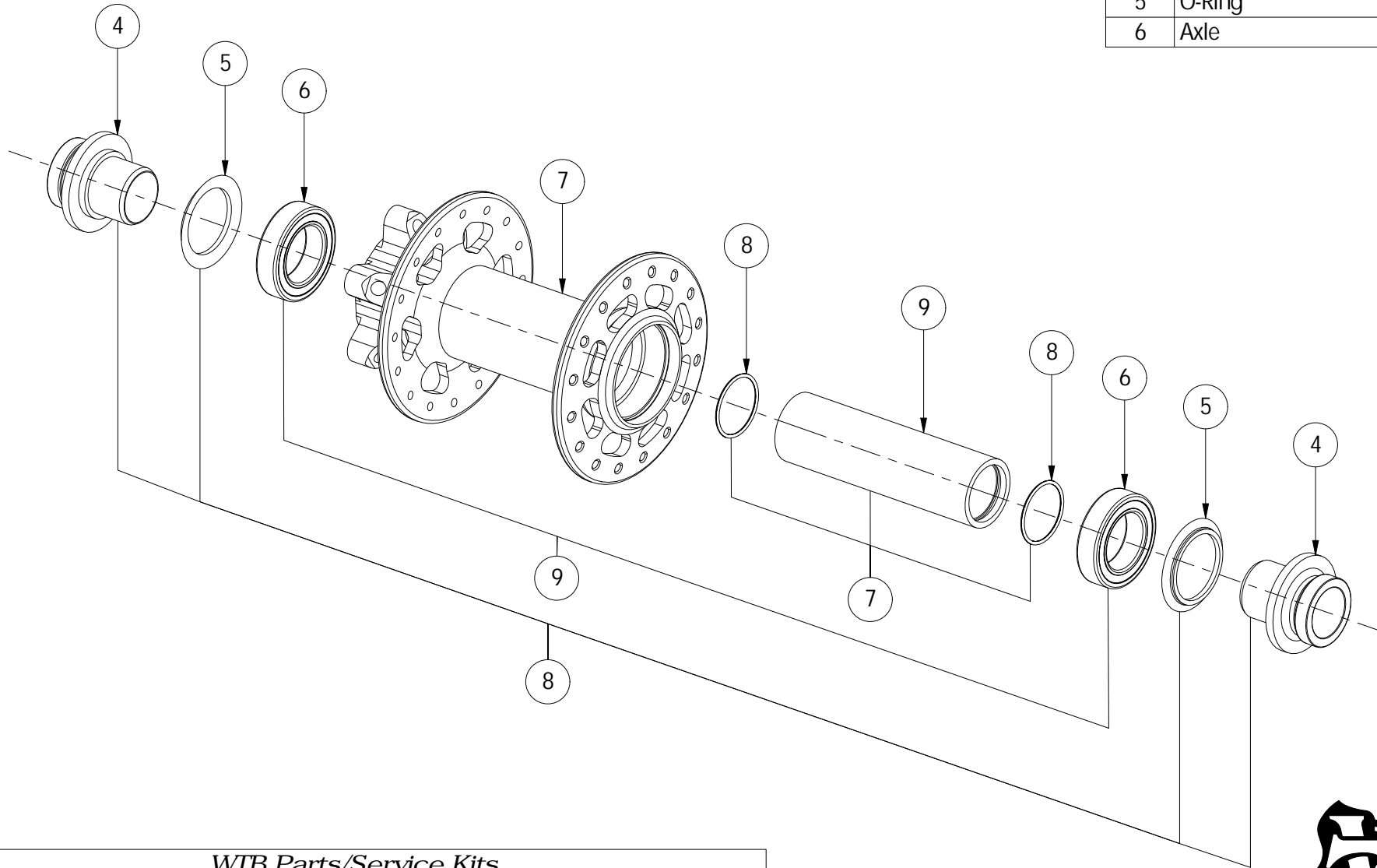
# WTB Speedterra and Proterra

## 110 x 15mm Front Hub

W135-0657 Proterra (32 hole)

W135-0661 Speedterra (32 hole)

No.	Description	Pcs
1	M15 End Cap	2
2	Seal	2
3	17x28x7 Bearing	2
4	Hub Shell	1
5	O-Ring	2
6	Axle	1



WTB Parts/Service Kits		
Part Number	Description	No.
W035-0122	110mm Axle and O-rings	7
W035-0120	Bearing Kit (17x28x7), 2Pcs	9
W035-0121	M15x100/110 End Cap Kit	8



# WTB Speedterra and Proterra

## 12 x 142 Rear Hub

W135-0658 Proterra 12x142, 28 hole, XD Driver

W135-0662 Speedterra 12x142, 28 hole, XD Driver

W135-0664 Proterra 12x142, 28 hole, Shimano Driver

W135-0666 Speedterra 12x142, 28 hole, Shimano Driver

### Shimano Freehub (#20)

No.	Description	Qty
6	Freehub Spacer	1
7	Pawl	4/6
8	Spring	4/6
9	15x24x5 Bearing	1
11	Freehub Body	1
13	Bearing Spacer	1
2	15x28x7 Bearing	1
15	Freehub Seal	1
16	Cassette Spacer	1

### Sram Freehub (#21)

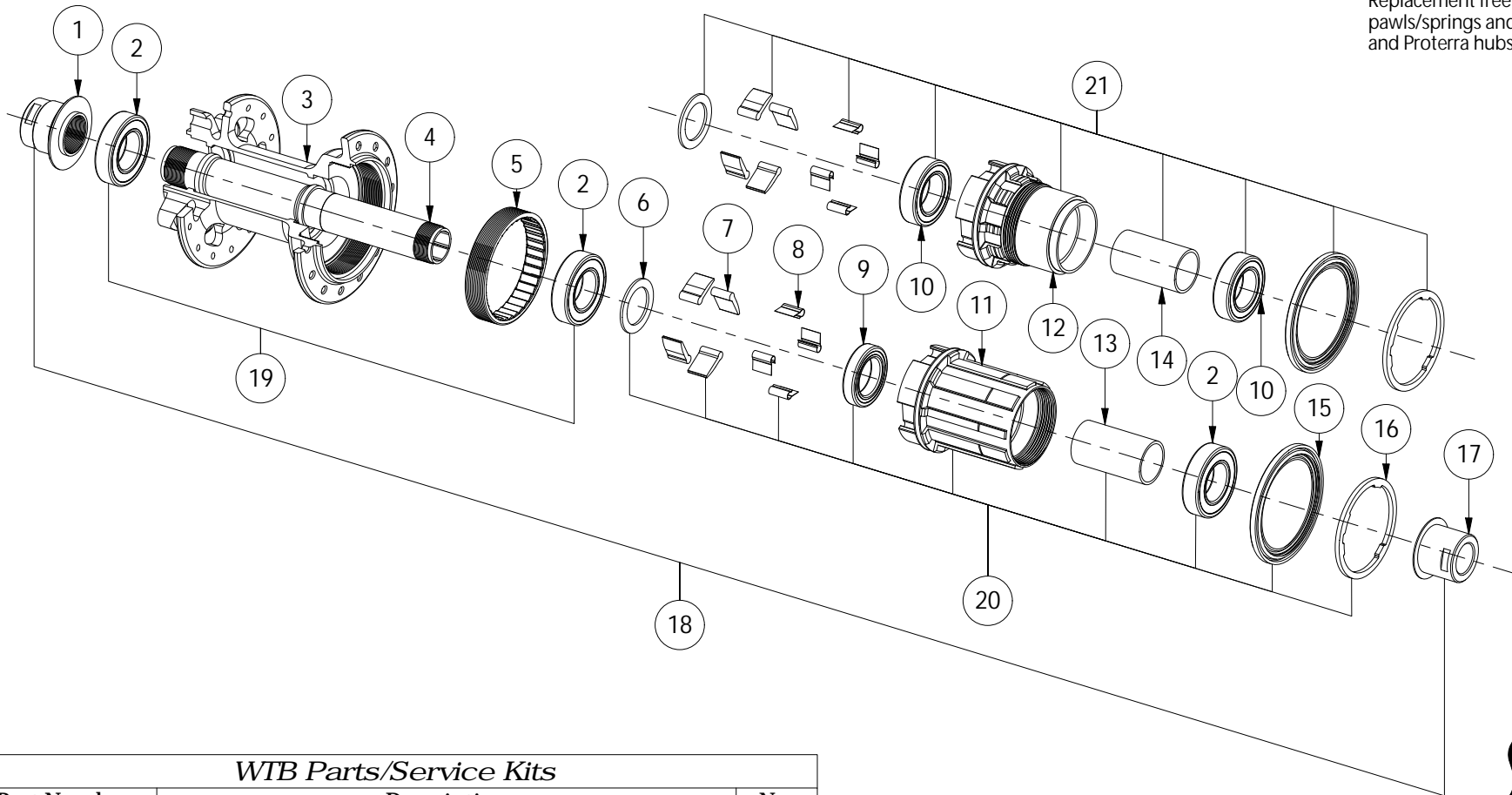
No.	Description	Qty
6	Cassette Spacer	1
7	Pawl	4/6
8	Spring	4/6
10	15x26x7 Bearing	2
12	Freehub Body	1
14	Bearing Spacer	1
15	Freehub Seal	1
16	Freehub Spacer	1

### Main Hub

No.	Description	Qty
1	M12 Left End Cap	1
2	15x28x7 Bearing	2
3	Hub Shell	1
4	142mm axle	1
5	Ratchet Ring	1
17	M12 Right End Cap	1

Notes:  
Speedterra hubs have freehubs with 4 pawls/springs.  
Proterra hubs have freehubs with 6 pawls/springs.

Replacement freehubs will have 6 pawls/springs and fit in both Speedterra and Proterra hubs



### WTB Parts/Service Kits

Part Number	Description	No.
W035-0123	M12x142/148/157 End Cap Kit	18
W035-0133	Bearing Kit (15x28x7), 2Pcs	19
W035-0124	142mm axle	4
W035-0125	Shimano Freehub Kit	20
W035-0127	Sram Freehub Kit	21



# WTB Speedterra and Proterra

## 12 x 148 Rear Hub

W135-0659 Proterra 12x148, 32 hole, XD Driver

W135-0663 Speedterra 12x148, 32 hole, XD Driver

W135-0665 Proterra 12x148, 32 hole, Shimano Driver

W135-0667 Speedterra 12x148, 32 hole, Shimano Driver

### Shimano Freehub (#20)

No.	Description	Qty
6	Freehub Spacer	1
7	Pawl	4/6
8	Spring	4/6
9	15x24x5 Bearing	1
11	Freehub Body	1
13	Bearing Spacer	1
2	15x28x7 Bearing	1
15	Freehub Seal	1
16	Cassette Spacer	1

### Sram Freehub (#21)

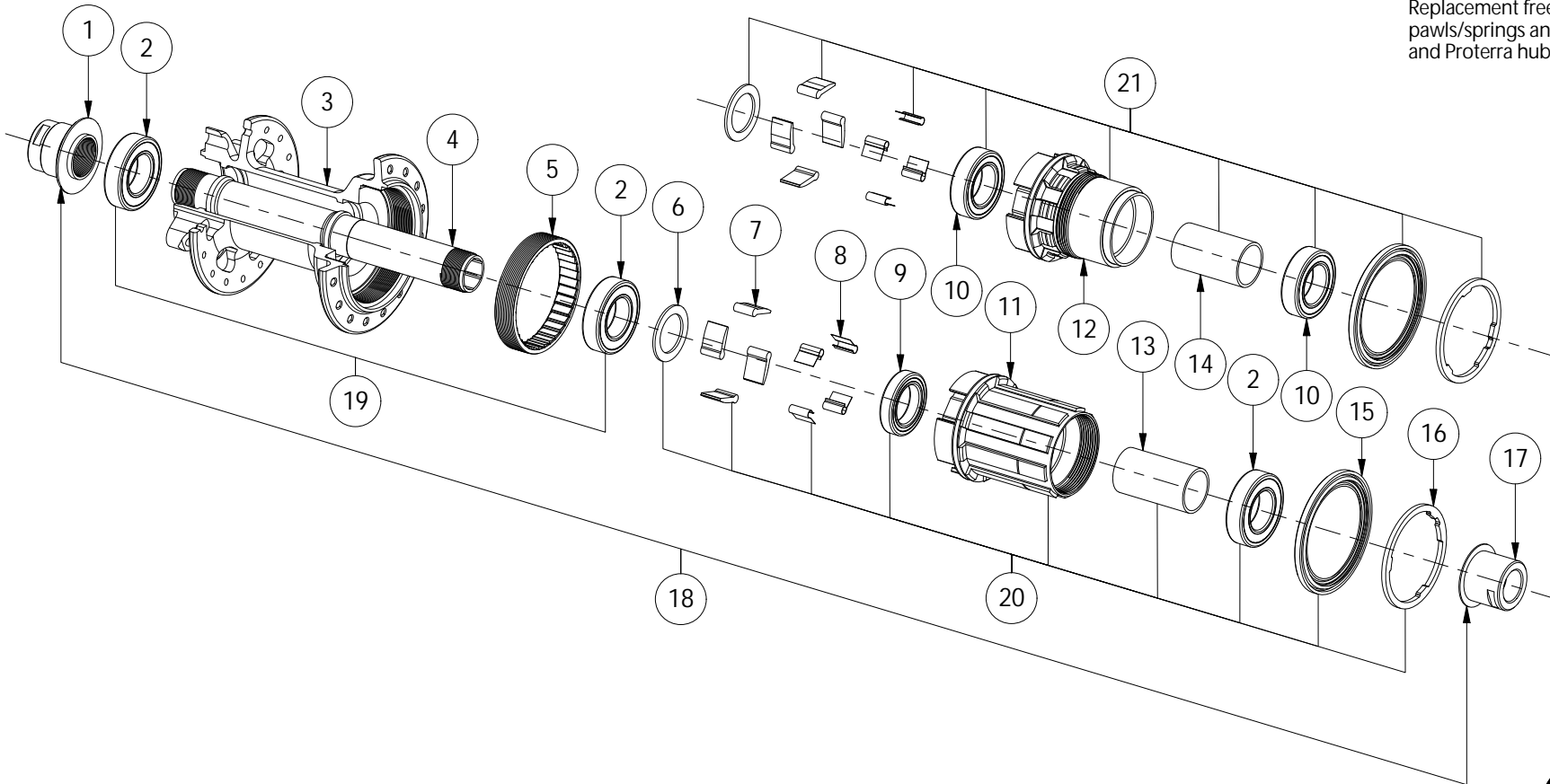
No.	Description	Qty
6	Cassette Spacer	1
7	Pawl	4/6
8	Spring	4/6
10	15x26x7 Bearing	2
12	Freehub Body	1
14	Bearing Spacer	1
15	Freehub Seal	1
16	Freehub Spacer	1

### Main Hub

No.	Description	Qty
1	M12 Left End Cap	1
2	15x28x7 Bearing	3
3	Hub Shell	1
4	148mm Axle	1
5	Ratchet Ring	1
17	M12 Right End Cap	1

Notes:  
Speedterra hubs have freehubs with 4 pawls/springs.  
Proterra hubs have freehubs with 6 pawls/springs.

Replacement freehubs will have 6 pawls/springs and fit in both Speedterra and Proterra hubs



WTB Parts/Service Kits		
PART NUMBER	DESCRIPTION	ITEM
W035-0123	M12x142/148/157 End Cap Kit	18
W035-0133	Bearing Kit (15x28x7), 2Pcs	19
W035-0128	148mm Axle	4
W035-0125	Shimano Freehub Kit	20
W035-0127	Sram Freehub Kit	21



# WTB Speedterra 12 x 157 Rear Hub

W135-0636 Speedterra 12x157, 32 hole, Shimano Driver

W135-0637 Speedterra 12x157, 32 hole, XDR Driver

## Shimano Freehub (#20)

No.	Description	Qty
6	Freehub Spacer	1
7	Pawl	4/6
8	Spring	4/6
9	15x24x5 Bearing	1
11	Freehub Body	1
13	Bearing Spacer	1
2	15x28x7 Bearing	1
15	Freehub Seal	1
16	Cassette Spacer	1

## Sram Freehub (#21)

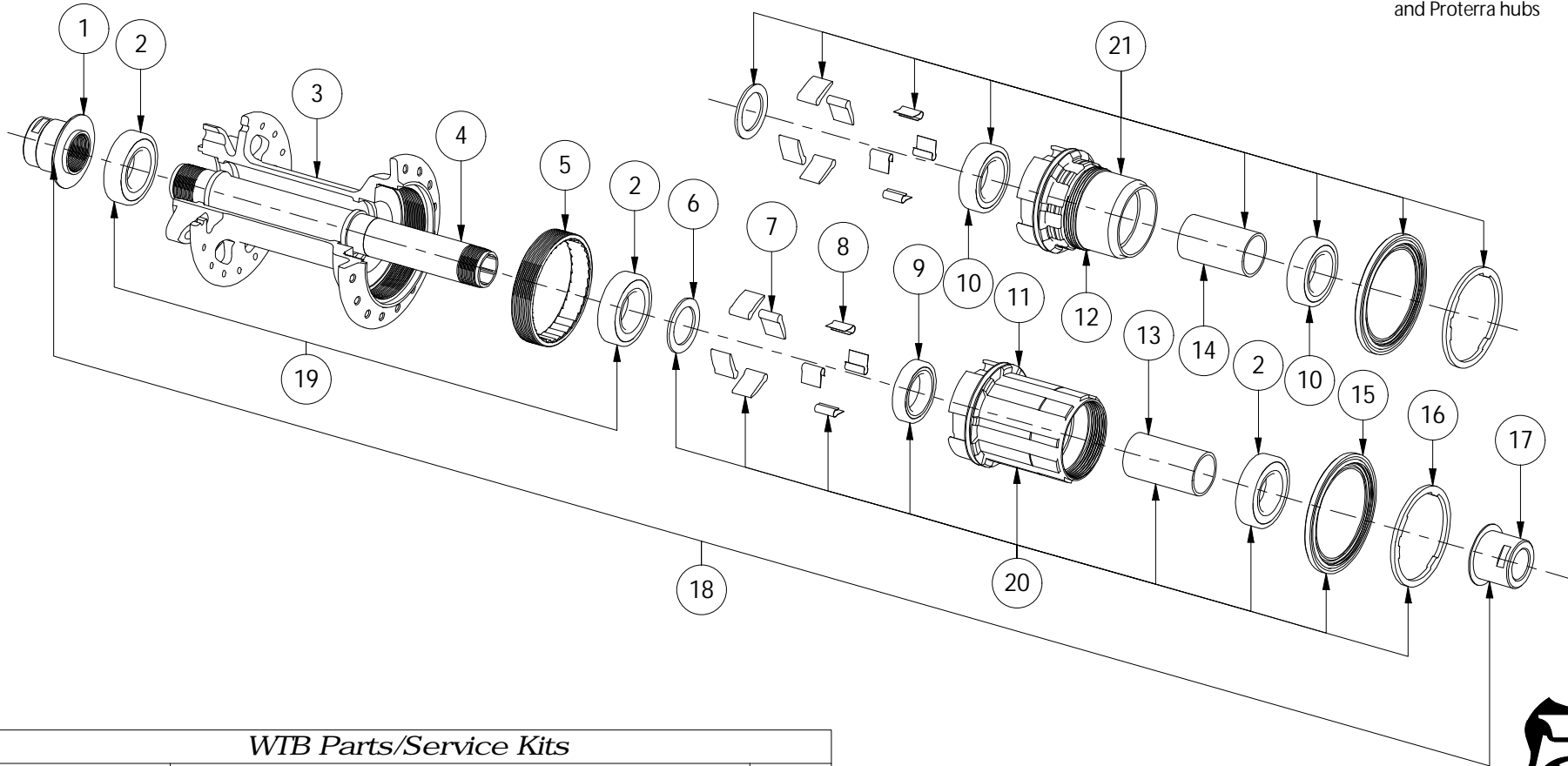
No.	Description	Qty
6	Freehub Spacer	1
7	Pawl	4/6
8	Spring	4/6
10	15x26x7 Bearing	2
12	Freehub Body	1
14	Bearing Spacer	1
15	Freehub Seal	1
16	Cassette Spacer	1

## Main Hub

No	Description	Qty
1	M12 Left End Cap	1
2	15x28x7 Bearing	3
3	Hub Shell	1
4	157mm Axle	1
5	Ratchet Ring	1
17	M12 Right End Cap	1

Notes:  
Speedterra hubs have freehubs with 4 pawls/springs.  
Proterra hubs have freehubs with 6 pawls/springs.

Replacement freehubs will have 6 pawls/springs and fit in both Speedterra and Proterra hubs



WTB Parts/Service Kits		
Part Number	Description	No
W035-0123	M12x142/148/157 End Cap Kit	18
W035-0133	Bearing Kit (15x28x7), 2Pcs	19
W035-0129	157mm Axle	4
W035-0125	Shimano Freehub Kit	20
W035-0127	Sram Freehub Kit	21



#### **4. Adjusting the bearings**

Protterra and Speedterra hubs do not require bearing adjustment. There will be a small amount of play in each hub when it is not tightened down in a frame or fork, which is normal. When an axle tightens down on the hub, the components will compress slightly and eliminate any play.

#### **5. Disassembling the hubs**

##### **Front hub:**

To simplify their removal and installation, end caps are held on the hub shell using a slip fit and an O-ring inside the axle. To remove the end caps, securely hold the hub shell with one hand (do not clamp in a vise) and pull them from the hub using your other hand. An alternating side-to-side motion often aids in end cap removal. If you are having difficulty removing the end caps using solely your hands, a 17mm cone wrench can be used to leverage on the outer lip of the end cap and assist in removal. Once the end caps have been removed, the dust seals can also be removed, thereby exposing the bearings in the hub shell and allowing you to thoroughly clean the area. The bearings are not serviceable and therefore must be replaced if they exhibit signs of wear. Removal and installation of the bearings requires specific/expensive tools in order to prevent damage to the hub shell or bearings themselves. WTB strongly suggests taking your hub(s) to a local bike shop to have the bearings replaced if they are worn or creaking.

##### **Rear hub:**

The axle is retained within the hub shell using a single end cap on each end of the axle; the end caps are the outermost components on the hub. To remove the end caps, place a 17mm cone wrench on the non-drive side end cap and another on the drive side end cap. The goal is to remove the drive side end cap so the freehub body can be removed. If the non-drive side end cap is accidentally removed, insert an 11mm hex key into the axle and hold it in place while you remove the drive side end cap. If you do not have an 11mm hex key, you can also tighten two M15 x 1.0 machine nuts together on the non-drive side of the axle and then hold those nuts in place with a wrench while loosening the drive side end cap. The driver body can be removed from the hub once the end cap is removed from the drive side by simply pulling it away from the hub shell. To reinstall the freehub and end caps, follow the above steps, but in reverse order. When installing a freehub, the pawls may interfere with inserting the freehub into the hub shell. To aid in reinstallation of the freehub, spin it around the axle while using a small hex key (~2mm) to push the pawls in as the freehub is rotated and pressed onto the hub shell.

#### **6. Contact Information**

If you have any questions or problems with any WTB product, please contact WTB through [wtb.com](http://wtb.com) or [info@wtb.com](mailto:info@wtb.com).

#### **7. Disclaimer**

The original English language version/meaning of these instructions supersedes all translations. WTB is not responsible for any errors in translation of these or any other product instructions.