

GIANT SERVICE MANUAL

WHEELSYSTEM



HUB SERVICE INFORMATION

There are two key hub internal technologies in Giant WheelSystem to achieve the highest performance, the less maintenance required and durability of the products.



STAR RATCHET SYSTEM

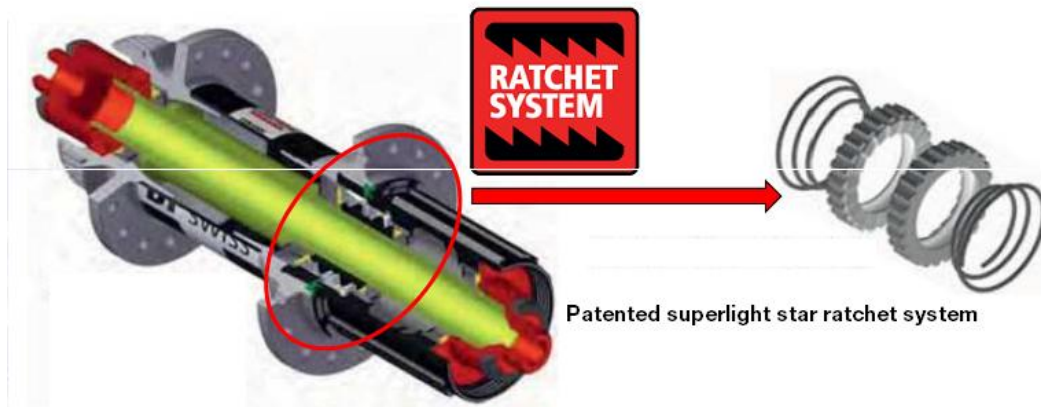


TWO PAWL SYSTEM



STAR RATCHET SYSTEM

How does the Star Ratchet System work?



Engagement



Disengagement

Advantages

- Quick engagement and high load capacity for severe riding condition
- Excellent durability & reliability
- No special tool needed for routine maintenance
- Easy change between different rotor standard
- Easy be converted to different axle standards

STAR RATCHET SYSTEM

How does the Two Pawl System work?



The two pawls will engage to the rotor when the rotor turns forward.

Advantages

- Quick engagement
- Safe & reliable
- Minor hub maintenance needed
- Economical design for budget rider

Note:

- Two Pawl System can not be converted to different axle standard

GIANT WHEELSYSTEMS OVERVIEW

MODEL YEAR	WHEELSYSTEM	HUB MODEL	HUB TECH	STYLE	ROTOR
MY14 -	P-SLR1 Aero	350	Star ratchet	Dicut	11S
MY13	P-SLR1 Aero	240s	Star ratchet	Dicut	11S
MY12	P-SLR1 Aero	240s	Star ratchet	Dicut	10S
MY13 -	P-SLR1	240	Star ratchet	Tricon	11S
MY12	P-SLR1	240	Star ratchet	Tricon	10S
MY14 -	P-SL0	350	Star ratchet	Tricon	11S
MY12 -13	P-SL0	350	Star ratchet	Tricon	10S
MY14 -	P-SL1	370	Two pawl	Spline	11S
MY12 -13	P-SL1	370	Two pawl	Spline	10S
MY14 -	P-CXR0 700C	240s	Star ratchet	Spline	10S
MY14 -	P-CXR1 700C	350	Star ratchet	Spline	10S
MY14 -	P-XCRO 27.5	240s	Star ratchet	Spline	10S
MY13 -	P-XCRO 29	240s	Star ratchet	Spline	10S
MY14 -	P-XCR1 27.5	350	Star ratchet	Spline	10S
MY13 -	P-XCR1 29	350	Star ratchet	Spline	10S
MY14 -	P-TRX0 27.5	240s	Star ratchet	Spline	10S
MY14 -	P-TRX1 27.5	240s	Star ratchet	Spline	10S
MY13 -	P-TRX1 29	240s	Star ratchet	Spline	10S
MY13 -	P-TR1 26	350	Star ratchet	Spline	10S

HUB SERVICE INFORMATION

240 :

- Hub technology is equal to DT Swiss 240s standard hub.
- Rear hub 11 speed, 9/10 speed compatible with spacer. (2013 P-SLR1 Aero and P-SLR1 and afterward.



350:

- Hub technology is equal to DT Swiss 350 hub.
- Rear hub internals are the same as 240s.
- Spring, star ratchets have to be checked & replaced in annual service.
- Seal has to be replaced in annual service.
- 11 speed compatible within spacer as of MY13



370:

- Hub technology is equal to DT Swiss 370 hubs.
- Two pawl in the hub internal.
- Pawls, spring of pawl carrier & needles have to be replaced in hub annual service.



DEALER SHOP TOOLS REQUIRED



REAR HUB DIS-ASSEMBLY (STAR RATCHET SYSTEM)



1

With the cassette removed, place the non-drive side axle into the axle holder in the vice



2

Pull up on the wheel to remove the adapter



3

Use a 5mm allen key and a synthetic hammer to punch out opposing adapter

REAR HUB DIS-ASSEMBLY (STAR RATCHET SYSTEM)



4

Disengage and remove freehub body



5

Remove both ratchets and both springs



6

Remove axle sleeve



7

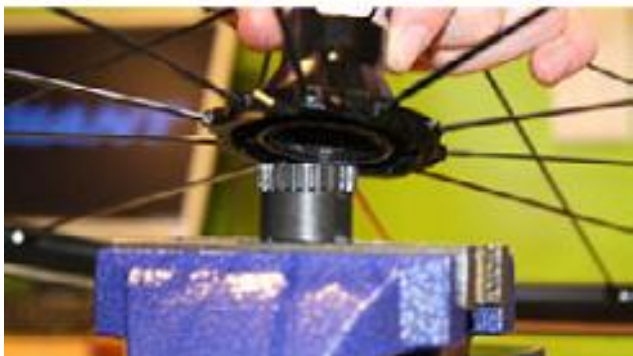
Using a synthetic hammer, punch out non-drive side bearing

REAR HUB DIS-ASSEMBLY (STAR RATCHET SYSTEM)



8

Remove axle and bearing



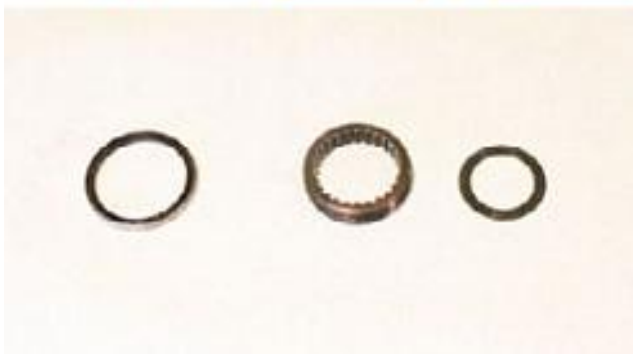
9

Using tool #5 and the vice, place the wheel drive side down onto tool



10

Rotate wheel counterclockwise to remove the ring nut and hub seal



11

Clean the individual parts with a dry cloth

REAR HUB DIS-ASSEMBLY (STAR RATCHET SYSTEM)



12

Position axle into hub non-drive side first and press into drive side bearing



13

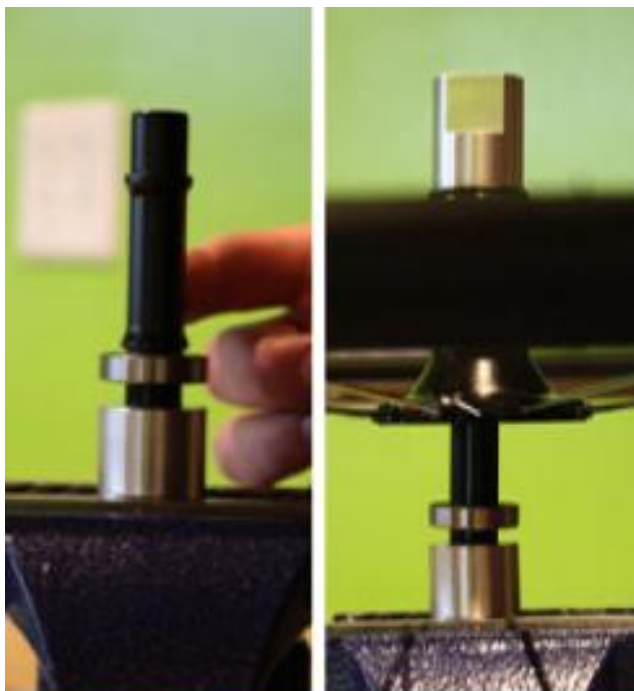
Using a synthetic hammer punch out drive-side bearing



14

Clean Hub shell fully

REAR HUB ASSEMBLY (STAR RATCHET SYSTEM)

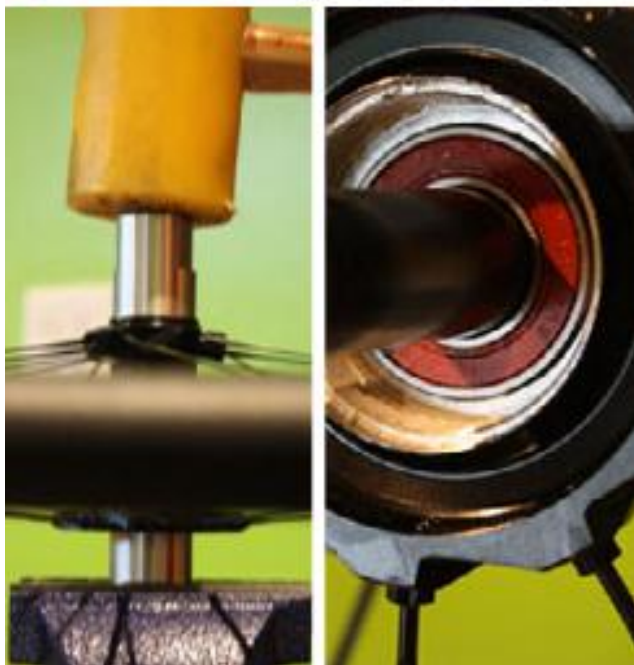


1

Clamp tool #2 into vice and insert axle long side down with drive side bearing (Red color down*)

2

Install other #2 tool onto the top



3

Using a synthetic hammer, press bearing into place

4

Bearing will normally rest 1mm above hub shell surface

* Red color side had better dust/water proof materials which should be always installed outward.

REAR HUB ASSEMBLY (STAR RATCHET SYSTEM)



5

Install Shim Ring evenly over bearing surface



6

Install ring nut with the recessed cut out on the bottom. Grease ring nut



7

Ensure Shim Ring is evenly positioned over bearing



8

Tighten ring nut with tool #5



9

Place hub seal over tool #3 making sure that recessed cut-out matches tool profile

REAR HUB ASSEMBLY (STAR RATCHET SYSTEM)



10

Using a synthetic hammer, press hub seal into place over ring nut using tool #3



11

Place non-drive side bearing (red side out) onto short portion of axle



12

Insert axle into hub shell



13

Position hub onto tool #5 with drive side down

REAR HUB ASSEMBLY (STAR RATCHET SYSTEM)



14

Using tool #1 and a synthetic hammer, press bearing into place

15

Install axle sleeve



16

Install first spring large size first

17

Install ratchets and final spring large size out*

REAR HUB ASSEMBLY (STAR RATCHET SYSTEM)



18

Grease and Install freehub body



19

Install adapters and press into place

FRONT HUB DIS-ASSEMBLY (240S)



1

Place axle into axle holder and pull up on wheel to remove adapter



2

Use tool #4 and insert inside axle opening



3

Using a synthetic hammer, remove entire axle, adapter and bearing



4

Remove all parts from hub shell

FRONT HUB DIS-ASSEMBLY (240S)



5

Using axle holder in vice, place axle end into vice

6

Pull up on axle to remove adapter



7

Re-install axle in empty end of hub shell and press into opposing bearing



8

Position tool #4 into end of axle



9

Using a synthetic hammer, remove bearing

FRONT HUB ASSEMBLY (240S)



1

Clamp tool #1 into vice and insert axle and bearing (red side down)

2

Position wheel over axle



3

Using second tool #1 and a synthetic hammer, press bearing into place

4

Place second bearing (red side out) into hub shell



5

Position wheel over vice and use a synthetic hammer to press bearing into place

6

Re-install adapters

REAR HUB DIS-ASSEMBLY (TWO PAWL SYSTEM)

DEALER SHOP TOOLS
REQUIRED



1
Clamp non-drive side axle into axle holder situated in vice



2
Use a 17mm wrench to unscrew the outer axle nut and adapter



3
Remove the freehub body exterior by pulling outwards



4
Use a screwdriver to remove the spring and pawls

****If the spring is removed, it has to be replaced by a new one****

REAR HUB DIS-ASSEMBLY (TWO PAWL SYSTEM)



5

Pull the needle cage bearing off the hub shell



6

Use a synthetic head hammer to tap out the axle from the housing



7

Use the axle holder and a 17mm wrench to remove the non-drive side axle nut, adapter and bearing



8

From the non-drive side, re-insert the axle and use a synthetic hammer to tap out the drive side bearing

REAR HUB ASSEMBLY (TWO PAWL SYSTEM)



1

Clamp tool #1 into the vice and insert the axle with the short end at the top (33mm from race)

2

Place the wheel over the axle drive side up and insert a bearing (red side out)



3

Install tool #2 onto the top and use a synthetic hammer to press the bearing into the hub

4

Turn the wheel around and insert the axle short end first into the hub shell and through the already pressed in bearing

REAR HUB ASSEMBLY (TWO PAWL SYSTEM)



5

Install the non-drive side bearing and place tool #2 onto the top and use a synthetic hammer to press the bearing into the hub



6

Grease the drive side hub shell and axle bearing and re-install the cage bearing.

Grease the cage bearing.



7

Install the pawls and pawl spring



8

Install the freehub body making sure to properly seat the pawls

REAR HUB ASSEMBLY (TWO PAWL SYSTEM)



9

Grease the freehub bearing



10

Install the adapters



11

Tighten axle nuts

FRONT HUB DIS-ASSEMBLY (350/370)



1

Tap either end of axle with a synthetic hammer until other end is released



2

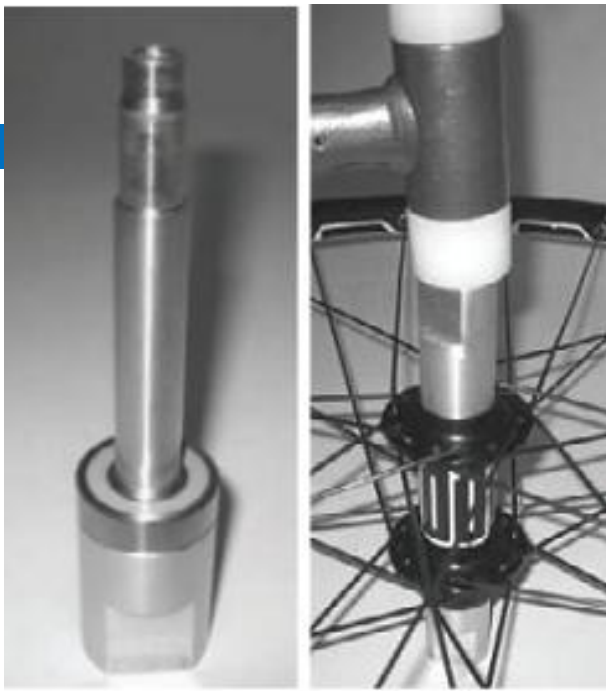
Remove opposing adapter and bearing



3

Reinsert axle into empty hub shell and use a synthetic hammer to punch out other bearing

FRONT HUB ASSEMBLY (350/370)



1

Clamp tool #1 or #2 into the vice and insert the wheel axle and bearing (red side out)

2

Slide the wheel onto the axle and use tool #1 or #2 and a synthetic hammer to press in the bearing.



3

Turn the wheel over and install the second bearing

4

Using either tool #1 or #2 and a synthetic hammer press in the bearing



5

Grease both bearings and press on the adapters

WHEEL SERVICE INFORMATION

P-SLR1 AERO (MY12/13)

- Dicut style, T-head spokes and hidden nipples.
- End caps/rotor have to be took off when replacing spokes.
- Standard 240s hub internal & rotor.
- Cassette compatibility:
 - MY12 10 speed
 - MY13 11 speed.
- Lacing Pattern at drive side:
 - MY12 Radial.
 - MY13 2 cross.



P-SLR1 AERO (MY14)

- Dicut style, T-head spokes.
- End caps/rotor have to be took off when replacing spokes.
- Standard 350 hub internal & rotor.
- 2 cross spoke pattern on drive side.

WHEEL SERVICE INFORMATION

P-SLR1 (MY12 -)

- Tricon style, double treads spokes.
- Hub nipple must be replaced when replacing spoke. Hub nipple recommended torque: 2.5Nm.
- Rim insert should be checked when reuse.
- Spoke on hub side should be installed with correct depth.
- Standard 240s hub internal & rotor.
- As of MY13 migrate spoke pattern to 2 cross at drive side.
- As of MY14 upgrade to 11 speed compatible.



P-SLO (MY12 -)

- Tricon style, double treads spokes.
- Hub nipples are used, no rim insert is used.
- Must replace hub nipple when replacing spoke. Hub nipple recommended torque: 2.5Nm.
- Spoke on hub side should be installed with correct depth.
- Standard 350 hub internal & rotor.
- As of MY14 upgrade to 11 speed compatible.

P-SL1 (MY12 -)

- Spline style, Straight pull spokes.
- The spokes need to be held to avoid spoke twisted at the beginning of truing wheel.
- Standard 370 hub internals & rotor.
- As of MY14 upgrade to 11 speed compatible.

WHEEL SERVICE INFORMATION

SERVICE TIPS FOR STRAIGHT PULL (SP) SPOKES OF ROUND HEAD

- Hold the spoke with the clamp or your fingers when tightening the nipples to prevent the spoke head from turning.
- The wheel can be trued without clamp when the spoke reaches a certain tension.

Manual clamp



Pneumatic clamp



Special strap + pliers

WHEEL SERVICE INFORMATION

P-XCRO 29 (MY13 -) &

P-CXRO 700 (MY14 -)

- Spline style, straight pull bladed spokes.
- Aero comp spokes at Drive side, and new aero at ND side.
- Standard 240s hub internals & rotor.



P-XCR1 29 (MY13 -) &

P-CXR1 700 (MY14 -)

- Spline style, straight pull spokes.
- Standard 350 hub internals & rotor.

P-TRX1 29 (MY13 -)

- Spline style, straight pull spokes. Tubeless rim.
- Check rim inserts when reused.
- MY13 Standard 240s hub internals & rotor.
- As of MY14 migrate to standard 350 hub internals & rotor.

P-TR1 26 (MY13 -)

- Spline style, straight pull spokes.
- Standard 350 hub internals & rotor.

WHEEL SERVICE INFORMATION

P-XCRO 27.5 (MY14 -)

- Spline style, straight pull bladed spokes.
- Aero comp spokes at Drive side, and new aero at ND side.
- Standard 240s hub internal parts and rotor.



P-XCR1 27.5 (MY14 -)

- Spline style, straight pull spokes.
- Standard 350 hub internal parts and rotor.

P-TRX0 27.5 (MY14 -)

- Spline style, straight pull spokes. Tubeless rim.
- Check rim inserts when reuse it.
- Standard 240s hub internals & rotor.

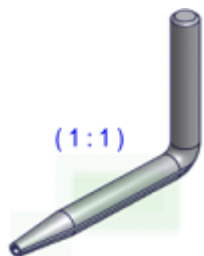
P-TRX1 27.5 (MY14 -)

- Spline style, straight pull spokes.
- Check rim inserts when reuse it.
- Standard 350 hub internals & rotor.

WHEEL SERVICE TIPS:

- Spoke tension can be measured correctly by DT Swiss Tensio meter.
- General tension standard: (Refer to WheelSystem spoke tension table for specific tension value of each wheel)
- Front: 850N ~ 1000N
- Rear: 1100N ~ 1250N
- Wheel should be distressing 2-4 times during building wheel

SERVICE INFO – WHEEL SERVICE TOOLS

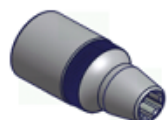


PN#: TTSXXXXN05608S
Des.: Spoke guide - Aerolite

PN#: TTSXXXXN05609S
Des.: Spoke guide - new Aero



PN#: TTSXXXXW05587S
Des.: Plastic nipple guide



PN#: TTSXXXXN05612S
Des.: Tool for hub nipple

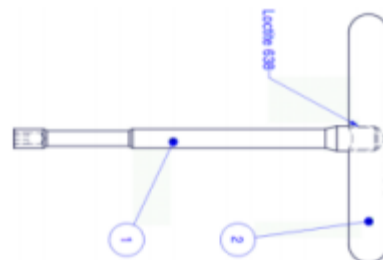


PN#: TTSXXXXSSPKEYS
Des.: Blace spokey TROX

PN#: TTSXXXXRSPKEYS
Des.: Red spokey 2005



PN#: TZSXXXXNNIDRIS
Des.: Nipple driver



PN#: TZSXXXXN11647S
Des.: Nipple wrench 4-kant



PN#: TZSXXXXNNIWRXS
Des.: Nipple wrench 6-kant



PN#: TTSXXXXNSPUNIS
Des.: Universal spoke guide

SERVICE INFO – HUB TOOLS BOX



Hub tool box

- One box includes all necessary tools for maintaining the hubs of GIANT WheelSystems.

DESCRIPTION	PART #	QTY
Tool kit case	—	1
Long installation cylinder Ø15 24x60MM		1
Short installation cylinder Ø15 28x35MM		2
Installation tool – Hub seal		1
Disassembly tool – Axle with Ø15MM		1
Axle holder park tool		1
Toolkit set front wheel radial 240s/190		1
Toolkit set front wheel FR/440		1
Special textile fabric strap		1
Long installation cylinder 60MM		1
Short installation cylinder 35MM		1
FW installation cylinder 98		2
Toolkit set front wheel SA15 240s		1
Toolkit 240s straight pull		1
FW installation cylinder ONYX		2
Wrench – ONYX bearing bush		1
Wrench – DT HÜGI 17MM		1
NYLON hammer FUTURO 30		1
DT Swiss special grease 20GR		1
Multi-purpose grease 20GR		1