TRP TR12

STORY BOOK TRP DRIVETRAIN // 2020











THE STORY

SHIFTING FOCUS TR12

The new TRP TR12 drivetrain system brings World Cup downhill shifting technology to the trails. After introducing the new drivetrain category in 2019 with the DH 7, TRP is expanding its product line with a new 12 speed trail version. The TR12 series drivetrain is the logical extension of the DH7 system as it will employ the same technologies.

The TR12 and DH7 drivetrain systems are the result of an intimate development relationship with $5 \times DH$ World Cup Overall Champion Aaron Gwin and his personal mechanic John Hall. From start to finish, this project has spanned more than two full years of conceptualizing this high-performance design.

In 2006, TEKTRO set out to develop a high-end, racing-focused product line that built on their values of quality control and precise engineering. These products developed under the name TRP have been engineered, tested, raced, and proven in the most extreme conditions. Since then, TRP has worked with world champions in cyclocross, BMX, and MTB to create new products. The courage of the three owners of TEKTRO, Gary Chen, Leo Chen and Aver Tsai, who founded the company in 1986, has paid off over time.

TEKTRO pulled together a special team to develop this new product category for TRP. Louis Tsai, son of founder Aver Tsai, head of TEKTRO/TRP Production and R&D - leads the TRP drivetrain development team and oversees the new production line, which is located in the main production facility in Changhua, Taiwan.

"There are a wide range of bikes, riding styles and riders today. TRP has focused on specific segments to launch its new product. After the first two years working successfully with Aaron and John on brakes, we showed them our ideas for a new TRP shifter and derailleur. When we asked them if they wanted to become part of the development team, they immediately were open to shift their focus to drivetrain. Since then, they have been pushing and challenging us - which is why we like working with Aaron and John." Lance Larrabee, TRP Managing Director

Because there is already a well-established range of chains and cassettes available, TRP will offer only shifters and derailleurs for 12 speed systems. This gives individual riders the chance to build and customize their own winning package.





FEATURES AND BENEFITS

DERAILLEURS

The new TR12 rear derailleur is able to provide a quiet and accurate ride over the roughest trails. The key feature to this pursuit is the Hall Lock. During the Race season, lead mechanic for Intense Factory Racing, John Hall, noticed excessive movement around the b-knuckle when riding over rough rock gardens and in tracked out corners. This was leading to more chain skipping and slapping creating possible variances in shifting. This inspired John's idea to lock the B-knuckle to the bike's derailleur hanger. TRP engineers worked closely with Hall to create this feature, The Hall Lock.

The function is integrated into the derailleur. When working on the derailleur or changing the wheel, the Hall Lock is opened. Closed while riding, the derailleur is locked to the frame and thus stabilized in the roughest conditions. This feature maintains accuracy in shifting and superb chain retention by not allowing the derailleur to rotate excessively away from the cassette. Its clamping force can be adjusted to balance stability and security while the derailleur deflects impact.

A second "ride-control" feature is an adjustable Ratchet Style Clutch, keeping tension on the chain through the movement of a bikes travel. With many different frame and suspension options, there has never been a greater need for a component's adaptability. The clutch has integrated adjustability, effectively providing the

individual balance between pedal feedback and chain retention for your bikes chain growth.

FEATURES AND BENEFITS

- Hall Lock
- G-Spec Ratchet Clutch
- G-Spec finishing touches:
 - Carbon fiber cage & Upper link
 - Extra wide parallelogram pivot
 - Sealed cartridge bearings pulleys





FEATURES AND BENEFITS

SHIFTER

Ergonomics are key to Aaron, which is why he wanted something a little different. As a result, TRP engineers looked at the cable release lever's ergonomics and devised a system to move it in a linear path to mimic the motion of a rider's thumb, rather than rotating it away. This unique positioning allows for a more consistent contact patch providing overall better grip and shifting performance when the trail gets rowdy.



FEATURES AND BENEFITS

- Shift levers designed and located for optimum performance by Aaron Gwin
- New linear actuation for improved ergonomics and consistent thumb contact
- Enhanced grip & tactile feel built into lever paddles: embossed grooves on advance and release lever
- Carbon fiber upper housing & advance lever
- · Ball bearing equipped
- 12 speed
- Tool-free straight lace cable changes
- Rider adjustable home position of lower lever with a 40-degree range





TECHNOLOGIES



HALL LOCK

Out of an internal challenge between the World Cup mechanics and Aaron's wish for less noise, John Hall sparked the idea and built a foundation for the Hall Lock, which he then worked to develop with TRP's engineers.



A standard derailleur can rotate around the B-knucke, the point where it is connected to the frame and hanger, but this interaction can create noise and instability in the shifting system. The Hall Lock serves to quiet the derailleur and add stability to the platform.

- Hall Lock is an on/off feature with adjustable force that brings TRP's derailleurs the utmost stability, accuracy, chain retention and quietness in operation for mountain biking's roughest conditions
- . It can lock-out the main pivot bolt to prevent your derailleur from lifting, slapping and making noise
- You can set it up however you like if you want maximum stability you can lock it; if you like it
 to move like a standard derailleur you can adjust it to do so



RATCHET CLUTCH

The second derailleur feature is a ratchet style clutch, which is adjustable.

Depending on a bike's suspension design, there can be enough chain growth to feel resistance from the clutch. If a rider wants to free up the system up, he or she can back off the clutch to balance pedal feedback with the clutch's chain retaining properties.

- Large diameter clutch surfaces for wear resistance and predictable force generation
- Oversized friction surface for consistent force output
- · Adjustable clutch force provides a wide range of customizable ride tuning and compensation for wear
- Quick and easy on/off switch removes all clutch force when needed for wheel changes
- · Robust pawl engagement

SET-UP AIDS

Shop mechanics and non-mechanics alike appreciate both will appreciate when components can be set up quickly and smartly. To this end, TRP derailleurs have two specific graphic indicators printed on the derailleur's architecture. Together they serve to save time for set-up and provide an easy check for assurance.

- . B-Adjustment Small guideline printed on the back side of the derailleur's cage above the top pulley
- Marking aids help mechanics and riders in setting up the B-Adjustment gap and ensures that an
 accurate adjustment can be made guickly and without special tools



CHAIN LENGTH INDICATOR

- Guideline printed on the front of the derailleur's knuckle.
- Marking helps ensure a quick and accurate measure of the system's required chain length







OUT OF THE BOX ADJUSTMENT

JOHN HALL'S HACKS

For the last five years John Hall has been responsible for every screw on Aaron's bike. He grew up working on his family's ranch in South Dakota, where hard work is the norm. That said, he's the first one to work smarter rather than harder. "You don't want to be jacking around with all of the little things all the time, there are enough things on a race weekend," says Hall. "You just want to be able to do a quick once over and ride." With this in mind, here's John Hall's TRP derailleur hacks.

Ratchet Clutch - You shouldn't need to adjust the TRP ratchet clutch when it's new. "More times than not, I will wait until the clutch is worn before I make an adjustment to tighten it up. The factory setting is perfectly fine."

Hall Lock - Alert - Always have the Hall Lock lever open when installing the derailleur; working on it or changing the wheel - thank you.

Out of the box the Hall Lock is loose and should be adjusted. "After I have installed the derailleur and get everything adjusted. I tighten the set screw to the point where it stops itself. I want it to be as tight as it can be, while still being able to operate the Hall Lock lever with my fingers. "That seems to be a really good spot. It keeps everything good and tight and the noise down, but when it takes a hit from a rock it doesn't have so much tension that it can't move out of the way."

Proper chain length - When sizing the chain, John suggests that you, "Run the chain around the smallest cog on the cassette through the derailleur and then use the closest link that adds a little bit of pressure onto the clutch."

When using the Clutch and Hall Lock adjustments, less is more - "The smaller you make your adjustments the better," says Hall. "If you think you need to do a 30 degree turn, do a 15 degree of a turn, especially on the clutch because there are two screws that you adjust, so when you do a 15 degree of a turn on each, that essentially turns into an 30 degree of a turn on the whole system, which is a lot. Out of the box you shouldn't have to adjust it. The only time you want to touch it is as it wears—you can bring it back to life by adding a little bit of tension, which just extends the longevity of your whole clutch system."

What can go wrong? Reset the Hall Lock after an impact - If you crash or you hit your TRP derailleur on a rock when riding the Hall Lock is meant to move, even if it's engaged, in order to prevent catastrophic damage to the derailleur. If this happens, it's important to take an extra step before you jump back on and ride. "Always be sure to release the Hall Lock and allow that derailleur B-screw to drop back down to the B-plate before you turn your Hall Lock back on," says Hall. "In this rare scenario, if you just push your derailleur back into place with the Hall Lock on, you can actually loosen that derailleur mounting bolt. We may talk about this a lot, but I've actually never hit this derailleur hard enough to push it off the B-plate. It's just one of those things to know, in the rare case it does happen, that you don't want to just shove your derailleur back down without turning the Hall Lock off."





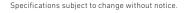
SPECIFICATIONS





TR12 Rear Derailleur

Speeds	12	
Weight	282g	
Materials	Forged Aluminum and Carbon Fiber	
Colors	Black, Gold, Silver	
Outer Cage	Carbon Fiber	
Chain Compatibility	12 speed	
Inner Cage	Forged Aluminum	
Spring	Stainless	
Bearings	Sealed Stainless Steel	
Cage Sizes	12 speed	
Mount Options	Hall Lock™	
Max Tooth	50T Max	
Pulleys	11T Upper, 15T Lower	
B Knuckle	Hall Lock™	
Clutch	Ratchet Clutch Technology	
Set-Up Aids	Chain Length Icon	





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Cage Sizes	12 speed	
Mount Options	Hall Lock™	
Max Tooth	50T Max	
Pulleys	11T Upper, 15T Lower	
B Knuckle	Hall Lock™	
Clutch	Ratchet Clutch Technology	
Set-Up Aids	Chain Length Icon	
Retail Availability	2020	

TR12 Shifter

Speeds	12	
Weight	120g	
Materials	Aluminum and Carbon Fiber	
Colors	Black, Gold, Silver	
Advance Lever	Carbon Fiber	
Compatibility	TRP TR12	
Release Lever	Forged Aluminum	
Bearings	Sealed Stainless Steel	
Cable	Tool-free Straight Lace	
Technology	Linear Release Action	
Other	5 cog sweep Adjustable advance lever	
Retail Availability	2020	





TRP TEAMS & PARTNERS

DEVELOPMENT TEAMS









TRP TAKES THE "R" IN TRP SERIOUS. OUR PARTNERSHIP WITH PROFESSIONAL ATHLETES AND TEAMS BRINGS US AN IMPORTANT USER EXPERIENCE FROM THE REAL WORLD - AT THE HIGHEST LEVEL.

The following teams, athletes and their mechanics have been instrumental and closely involved into the TRP product development process. We like to thank everybody for the time and efforts invested.

Intense Factory Racing | Scott DH Factory | Commencal / 100% | YT Mob













THE COMPANY

SINCE 1986.....

TEKTRO IS A 33-YEAR-OLD FAMILY BUSINESS BASED IN TAIWAN.

Today, all major bicycle brands use TEKTRO brakes on their entry-level bikes. They value Tektros reliability and quality production know-how. Things changed in 2006, when Tektro launched the high end brand TRP.

In 1986, three friends Gary Chen, Leo Chen and Aver Tsai founded TEKTRO with 20 employees in Changhua, Taiwan. The first factory was about the size of a basketball court. The monthly production capacity was at 50,000 sets of cantilever brakes. Their business values drove their success: work dependably, design creatively, manage efficiently and keep production at the highest quality. 1999 TEKTRO launched it's first hydraulic disc brake, which still is the company's most successful and important product. Today, TEKTRO has production facilities in Taiwan and China with over 1,600 employees and provides sales and service in Taiwan, China, Europe and USA.

TRP stands for TEKTRO Racing Product. TRP stepped into smaller categories, has created multiple product success stories and numerous race wins, including time trial, cyclo-cross, downhill.

1986 Gary Chen, Leo Chen and Aver Tsai founded Tektro in Changhua, Taiwan

1999 TEKTRO launches their first hydraulic disc brake "Gemini"

2000 TEKTRO opens factory in Shenzhen, China

2002 TEKTRO opens factory in Wuxi, China

2006 TEKTRO launches TRP

2009 TEKTRO opens the new factory in Changhua

2009 TEKTRO management completes a cycling trip around the island of Taiwan

2015 TEKTRO opens R&D office downtown Taichung

2016 TEKTRO 30th anniversary

2019 TRP starts drivetrain systems with TRP DH7

2020 TRP introduces TRP TR12 drivetrain system











INSTALLATION INSTRUCTIONS - REAR DERAILLEUR

- 1. With the bike in a work stand, ensure the derailleur hanger is straight using a hanger alignment tool. (Hanger straightness is critical to the performance of the rear derailleur. As such, proper care must be taken to ensure it is within the tolerance specified by the frame manufacturer.)
- 2. Mount the derailleur to the hanger using a 5mm allen key. Ensure that the clutch is switched to the off position and that the Hall Lock lever is in the off/upright position. (Failure to do so may prevent installation of the rear derailleur.) While tightening the main bolt to the hanger, ensure that the b plate is placed firmly up against the hanger. There should be no gap between the b plate and the hanger. Torque the derailleur to $10 12 \, \text{Nm}$.
- 3. Install the chain onto the chainring and the smallest cog of the cassette. Route the chain through the derailleur. Pull the end of the chain that is routed through the derailleur to slightly tension the derailleur. Find the two inner links that will be used with the master link and shorten the chain using a chain breaking tool (Using the chain length decal as a reference can help quickly determine chain length.) Connect the two ends of the chain using the included mater link Confirm the chain length is not too short by bottoming out or temporarily removing the rear shock.
- 4. With the chain on the smallest cog, pedal the bike and turn the H Limit screw clockwise. This will push the chain onto the second smallest cog. After the chain has settled onto the second smallest cog, turn the H Limit screw counterclockwise to allow the chain to fall onto the smallest cog. Ensure there is no noise from the chain rubbing the frame or second smallest cog of the cassette.
- 5. Route the shift cable through the shift housing. Thread the cable through the cable pulley to the cable pinch plate on the arm of the derailleur. Tighten the bolt using 5mm allen wrench to 4 6 Nm. Trim any excess cable to 30 40mm and install a cable crimp end.
- 6. Slowly shift the derailleur into the largest cog, being careful to not over shift. Using a 3mm allen wrench, tighten the L Limit screw until the bolt contacts the derailleur. (This will prevent the derailleur from pushing the chain into the spokes.)
- 7. Adjust the b tension using a 3mm allen wrench. Thread the b tension screw clockwise to increase the gap between the upper pulley and the cassette. Thread the b tension screw counterclockwise to decrease the gap between the upper pulley and the cassette. Measure the gap between the upper pulley and the largest cog of the cassette while the bike is in sag position. Stop when the teeth of the largest cog of the cassette are 6.5 7.5mm away from the teeth of the upper pulley. (Do not make any adjustments to b-tension with the Hall Lock engaged.)



INSTALLATION INSTRUCTIONS - SHIFTER

- 1. Install shift housing from the handlebars to the rear derailleur following your frame manufacturers routing. (Ensure there is enough housing to allow full rotation of the handlebars without restricting its movement.)

 Cut housing to the appropriate length and install a shift housing ferrule at each end of the housing.
- 2. Install the shifter on the bar using the supplied clamp and hardware (or the appropriate shifter integration clamp). Using a 4mm allen wrench, tighten the clamp bolt to 3 Nm. (If using carbon handlebars, lightly apply carbon paste to prevent rotation without over-tightening.)
- 3. Thread the barrel adjuster all the way in and then rotate back two full turns to ensure proper indexing can be achieved.
- 4. Ensure the cable head is properly seated in the shifter mechanism and that the shifter is in the lowest gearing possible by pressing the release lever several times. Run the cable through the shifter housing and out to the rear derailleur. (If installing a new cable, remove the cable entry plug from the shifter and thread the cable through the shifter. Re-install the cable entry plug.)
- 5. With the high and low limits set and the b tension properly adjusted, index the shifter to ensure the derail-leur functions properly. If the derailleur hesitates when shifting from the large cogs to the small cogs of the cassette, thread the barrel adjuster clockwise to decrease cable tension. If the derailleur hesitates when shifting from the small cogs to the large cogs of the cassette, thread the barrel adjuster counterclockwise to increase cable tension. Adjust as needed.
- 6. Adjust the position of the advance lever (if desired) by loosening the two T10 Torx bolts holding the advance lever to the shifter. Once the lever is in the desired position, tighten the two T10 Torx fasteners to 1 Nm. (Note: With the advance lever rotated further back toward the rider, thumb clearance between the advance lever and the handlebar increases.)



REAR DERAILLEUR - SPARE PARTS KITS INSTALLATION

Replacing the Inner Cage and Pulleys (K-D7-1):

Remove the M4 fasteners from the inner cage and the outer cage using a 3mm allen. Remove the inner cage. Remove the upper and lower pulley and the accompanying bearing spacers. Install the new upper and lower pulley and the accompanying bearing spacers. Install the lower pulley with the TRP logo facing outward. Install the new inner cage. Install the two M4 fasteners using a 3mm allen wrench. Tighten to 2-3Nm.

Replacing the Upper and Lower Pulley (K-D7-2):

Remove the M4 fasteners from the inner cage and the outer cage using a 3mm allen. Remove the inner cage. Remove the upper and lower pulley and the accompanying bearing spacers. Install the new upper and lower pulley and the accompanying bearing spacers. Install the lower pulley with the TRP logo facing outward. Replace the inner cage. Install the two M4 fasteners using a 3mm allen wrench. Tighten to 2-3Nm.

Derailleur Hardware (K-D7-3):

B Tension Bolt – M4X22 Anti-vibration Plastic Block H Limit Screw – M4X10 L Limit Screw – M4X14 Anti-vibration Plastic Block

Replacing the B Bolt (K-D-1):

With the derailleur removed from the bike, remove the E clip using snap ring pliers. Remove the B plate. Remove the B bolt and wave spring. Lightly grease the new wave spring and install into the head piece. Install the new B bolt. Install the B plate and E clip.

Replacing the Cable Pulley (K-D-2):

Remove the cable pulley bolt using a 2.5mm allen. Remove the cable pulley cover plate. Remove the cable pulley and replace with a new one. Reinstall the cable cover plate and the cable pulley bolt using the 2.5mm allen. Tighten until snug. (Do not over-tighten; doing so may prevent rotation of pulley.)

Cable Anchor Kit (K-D-3):

Cable Anchor Bolt – M6X11.5 Cable Anchor Pinch Plate



SHIFTER - SPARE PARTS KITS INSTALLATION

Replacing the Advance (Pull) Lever (K-S-1):

Remove the two T10 Torx fasteners holding the advance lever to the shifter. Remove the advance lever plate and the advance lever. Install the new advance lever and advance lever plate to the shifter. Install the T10 Torx fasteners into the advance lever and tighten when set to your preference.

Replacing the Barrel Adjuster (K-S-2):

Remove the cable from the derailleur and shifter. Remove the shift cable housing from the barrel adjuster. Unthread the barrel adjuster out of the upper housing. Install the new barrel adjuster into the housing. (Note: the spring and bolt go into the collar.) Reinstall the cable and housing. Adjust as needed to set optimal cable tension.

Replacing the Shifter Clamp (K-S-3):

Remove the upper housing from the shifter using a 4mm allen wrench. Remove the bar clamp from the handlebars. Install the new clamp by sliding it onto the handlebar. Install the shifter to the clamp with the M5 bolt using a 4mm allen.

Replacing the Shifter Housing (K-S-4):

Remove the cable entry plug and the shift cable. Remove the upper housing from the bar clamp using a 4mm allen. Remove the barrel adjuster from the upper housing. Remove the advance lever screws using a T10 Torx. Remove the advance lever plate and the advance lever. Remove the three T10 Torx fasteners from the lower housing. Remove the lower housing. Remove the shifter mechanism from the upper housing. Install the shifter mechanism into the new upper housing. Install the new lower housing onto the upper housing. Install the shifter housing screws. Install the barrel adjuster in the new upper housing. Install the advance lever and the accompanying advance lever plate. Reinstall the two T10 Torx fasteners into the advance lever. Mount the shifter to the bar and tighten the clamp bolt to 3 Nm. Install the cable and cable entry plug. Adjust as needed.



DERAILLEUR CLUTCH ADJUSTMENT

If you notice excessive chain noise, consider increasing the clutch force. To do so, locate the two 2 mm set screws and turn them clockwise.

If you feel the clutch force is set too high and limiting suspension performance, consider decreasing the clutch force. To do so, locate the two 2 mm set screws and turn counterclockwise. Fig. 7

NOTE: The clutch force adjustment is precise; begin adjusting your clutch in 1/8 turn increments. Another quick way to determine if decreasing the clutch force will yield an improvement on suspension is to simply turn the clutch off.



HALL LOCK INSTALLATION

Before installing your rear derailleur, ensure the Hall Lock lever is in the off/open/upright position.

Install the rear derailleur using a 5mm allen, tightening to 10-12 Nm.

After adjusting the B gap to 5-6mm, turn the Hall Lock lever in to on/closed/down position.

Do not make any adjustments to B gap with the Hall Lock on.

In the event of rock strike, do not force the derailleur forward as doing so may loosen the mounting bolt. Simply open the hall lock lever to release to derailleur back to its original position.







TR12 COMPATABILITY CHART

MAX. 50 T CASSETTES

Cassette	Tooth Count	Freehub Driver	Ranking
Sram PG-1230 NX Eagle	11-50	HG	***
Sram XG-1275 GX Eagle Sram XG-1295 X01 Eagle Sram XG-1299 XX1 Eagle	10-50	XD	***
Shimano XTR CS-M9100 Shimano XT CS-M8100 Shimano SLX CS-M7100	10-45	MicroSpline	**
SunRace MZ90 SunRace MZX0	11-50	HG	*
SunRace MZ91X	10-50	XD	*
e*thirteen TRS+	9-46	XD	*
e*thirteen TRS+	9-50	XD	*

Chain	Ranking
All Sram 12 Speed ***	
All Shimano 12 Speed	**
All KMC 12 Speed	*



^{***} Best

^{**} Better

^{*} Good

TROUBLESHOOTING GUIDE

Problem	Possible Cause	Correction
Derailleur won't Install/Uninstall	Hall Lock is engaged	Turn Hall Lock off
	B Plate is not parallel with Hanger	Check the B Plate and correct as needed
Shifter doesn't move Derailleur	Cable is not routed through shifter properly	Route the cable through the cable carrier in the shifter
	Cable pinch bolt is not sufficiently tight	Torque the cable pinch bolt to 4-6 Nm
	Advance lever is not sufficiently tight	Tighten the advance lever retaining screws
Chain jumps from smallest cog to frame dropout	High gear limit screw is not adjusted properly	Turn in limit screw "H" until the guide pulley is aligned with the outboard edge of the smallest cog
Difficult or impossible to shift chain onto smallest cog	High gear limit screw is not adjusted properly	Unscrew limit screw 'H' until the guide pulley is aligned with the outboard edge of the smallest cog
Chain jumps over largest cog and falls between the spokes and the largest cog, or inner cage plate contacts spokes	Low Gear Limit Screw is not adjusted properly	Turn in limit screw 'L' until the center of the guide pulley is aligned with the center of the largest cog
	Rear derailleur or derailleur hanger is bent	Straighten using a derailleur hanger alignment guide or replace
Delayed shifting	Clearance between guide pulley/ sprocket is too large	Adjust b-adjust screw by turning it counter- clockwise
Rough Shifting behavior	Clearance between guide pulley/ sprocket is too small	Adjust b-adjust screw by turning it clockwise
Shifts more gears onto smaller sprockets than intended	Shift cable insufficiently tensioned	Turn barrel adjuster on the shifter counter- clockwise
Delayed shifting onto larger sprocket	Shift cable insufficiently tensioned	Turn barrel adjuster on the shifter counter- clockwise
Delayed shifting onto smaller sprocket	Shift cable is too tight	Turn barrel adjuster on the shifter clockwise
	Excessive cable friction, pinched or poorly routed cable	Lubricate or replace cable and housing. Check for excessive bending of cable housing and ensure cable is seated in pinch groove
Chain gap (clearance from largest cog to upper pulley wheel) is too large or too small	Chain is sized too small or too large	Size the rear chain according to the user manual
	Rear suspension chainstay growth	Check the chain gap clearance when the rear suspension is both fully extended and compressed 30%
Chain falls off of pulleys	Worn or damaged pulleys	Replace pulleys

















HALL LOCK



RATCHET CLUTCH



CHAIN LENGTH INDICATOR

