Part # 00-028

Important!	***Installation of this product requires special tools.***

Congratulations on your purchase of the "HPL" Hydraulic Preload Adjuster

These instructions are intended to provide the competent mechanic with the information necessary to understand the various functional aspects of the shock preload system and to correctly install and adjust this Merge product.

Product Background

A modern four stroke off-road motorcycle has the capability of adjusting the preload or pretension on the rear spring. Preload is the amount of tension applied to the spring when the shock absorber is at rest and fully extended. Rear Spring preload affects how high the rear of the bike rides when in motion.

- When the rear of the bike is too high it makes the bike feel unstable and "nervous"; it can also make the suspension react poorly on small bumps, especially entering corners.
- When the rear of the bike is too low it can make the bike steer poorly and feel "lazy", and reduce the amount of available rear wheel travel so the suspension is less able to absorb big jumps and holes, etc.

Adjusting the preload makes the full amount of rear wheel travel available, and is a key part of maintaining correct and important geometry, especially steering angles. With the HPL, setting up your bike for dry, wet or sandy conditions has never been so easy.

Installation

Important - If you are not a competent mechanic, do not attempt to install this product yourself; have your local dealer or suspension specialist install it for you. If you are not carrying out the work yourself, we recommend discussing the installation with the person who will perform the work, and make sure you preset the maximum race sag. - *See section* 1.

Precautions:

- **Always wear Safety Glasses when working on a motorcycle.**
- **Read all safety instructions in your manual.**
- **Always clean the area around the rear shock before disassembly.**

Before you install the HPL onto the shock we suggest you determine the base setting, as this reduces the possibility that you will need to readjust the threaded preload rings at a later stage.

1. Set the rear suspension race sag at the maximum that's recommended for your motorcycle. If your motorcycle only recommends a STD setting, then add 4 to 5mm – see examples below.

a. *Range Example: The owner's manual recommends 100 to 105 mm - set your race sag to 105mm.*

b. *Standard Setting Example: The owner's manual recommends 100 mm as a std setting. In this case adjust your race sag at 104 to 105mm.*

Important - Before you begin installation verify you have 30mm of exposed thread above the locking ring; if not, the HPL will not fit your model of motorcycle.

2. Remove rear shock per the owner's manual.
3. Remove the spring using suitable spring compressor.

4. Loosen the adjuster ring clamp bolt.
5. To prevent the adjuster ring seizing to the shock body thoroughly lubricate the threads on the body and the adjuster ring.
6. Measure the distance from the upper shock housing to the top of the adjuster ring, then unscrew the ring 30mm.

The WP-PDS HPL version will not fit over the lower spring retainer so there are 2 ways to install the HPL:

a. *If you are planning on changing the oil or servicing the shock you can install the HPL on to the shock body while the shaft assembly is removed for the service work.*

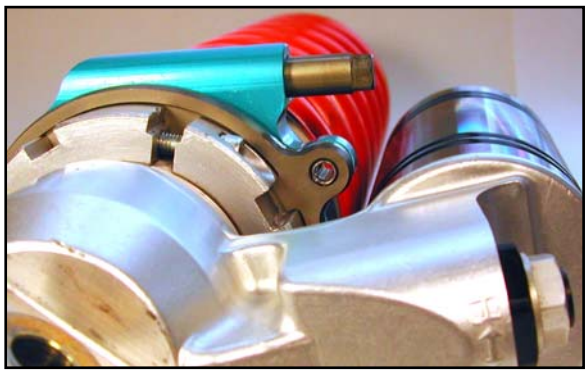
b. *If you are not planning any service work, the easiest way to install the HPL is by unscrewing and removing the fork (Clevis) from the shock shaft.*

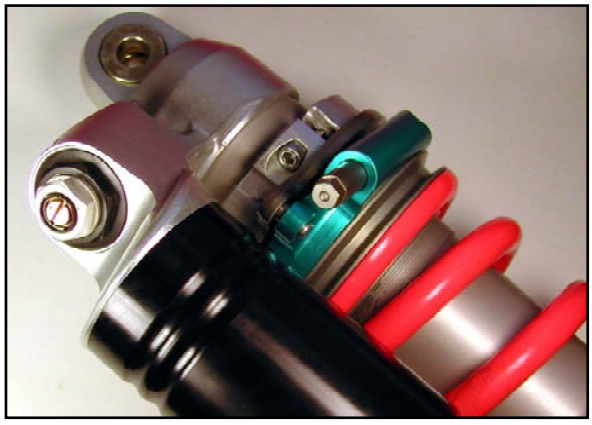
Installing During a Service:

7. (a) Install the HPL over the body and on to the spring adjusting ring, being sure to locate the HPL in one of the spring adjuster's notches.
8. (a) Rotate the HPL and spring adjust ring until the HPL adjuster shaft is aligned with the body and reservoir as shown.
9. (a) Tighten the adjuster ring clamp bolt with a 4mm Allen wrench.
10. (a) Complete your service work as planned. Jump to section *16.*

Installing Without a Service:

7. (b) Remove the rubber plug from the reservoir and unscrew the 4mm Allen bolt to depressurize the nitrogen.
8. (b) Hold the lower fork firmly in vise using soft jaws to protect the surface.
9. (b) Lift the bumper and lower spring cup to expose the lower fork locking nut. Loosen the locking nut with 24mm wrench and then unscrew the shaft from the lower fork.
10. Install the HPL over the body and on to the spring adjuster ring being sure to locate the HPL in one of the spring adjusting ring notches.
11. (b) Rotate the HPL and spring adjust ring until the HPL adjuster shaft is aligned with the body and reservoir as shown.
12. (b) Tighten the adjuster ring clamp bolt with a 4mm Allen wrench.
13. (b) Thoroughly clean the threads on the shaft and fork with solvent.
14. (b) Apply a small amount of grease to the rebound adjuster inside the lower fork, being careful not to put grease on the threads.
15. (b) Apply some medium strength (stud lock) locking compound to the threads on the shaft. Install the fork on to the shock shaft and retighten with the 24mm wrench.
16. (a/b) Recharge the shock with nitrogen and replace the rubber plug; 150 PSI is the standard setting.
17. (a/b) Reinstall the spring and HPL spacer with a suitable spring compressor.
18. (a/b) Reinstall the shock on to the motorcycle per your owner's manual.
19. (a/b) Verify the HPL is not rubbing on any part of the chassis including the air boot; if so, loosen the spring adjusting ring and rotate the HPL until you have clearance, then retighten the adjuster ring clamp bolt.





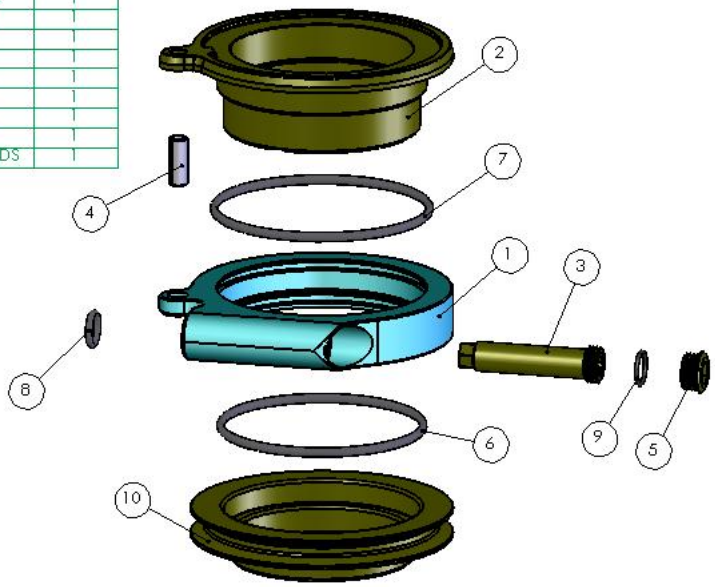
Adjustment and Setup

Refer to your owner's manual to adjust your recommended race sag using an 8mm "T" handle. Rotating the HPL adjuster shaft clockwise will decrease race sag, rotating it counterclockwise will increase race sag.

Service and Maintenance

Service intervals depend upon many factors including spring rate and riding conditions. Merge recommends adjusting the race sag before you ride while your HPL is relatively clean. *Note: The HPL does not need to be removed from the shock for normal service like seal replacement. Service kits which include full instructions for each model of HPL are available from your importer and/or mergeracing.com.*

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	00-023-1	HPL, Outer Ring	1
2	00-028-2	HPL, Inner, WP PDS	1
3	00-023-3	HPL, Adj, Shaft	1
4	00-023-5	HPL, Guide Pin	1
5	00-023-4	HPL, Cap	1
6	00-023-7	HPL, O-ring, Lwr	1
7	00-023-6	HPL, O-ring, Upr	1
8	00-023-8	HPL, O-ring, Adj.	1
9	00-023-9	HPL, O-ring, Cap	1
10	00-028-10	Spacer, Spring, WP PDS	1



Additional items required

- **Caliper**
- **Nitrogen recharging equipment**
- **Tape Measure**
- **24mm wrench**
- **Spring Adjuster "C" Wrench**
- **Owners manual for your motorcycle**
- **Spring compressor tool**
- **8mm T handle**

Safety Notices –

- **Offroad motorcycles should never be ridden when they are not functioning correctly.**
- **Always check nuts and bolts before riding**

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Other recommended Merge Racing Technologies products

00-023K Rebuild Kit – HPL
00-008 "ALJ" Adjustable leak Jet
00-019 "FMS" Fuel Mixture Screw
00-018 "APS" Accelerator Pump Spring
00-032/033 "RRS" Rising Rate Springs

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