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Mtn. Tamer Back Suspension Fit Kit: P-1800-53 (P-65-A)

Installation Instructions for: Yamaha APEX Mountain & Nytro-mtx

Things you should know about this kit before you start:

- *Read the entire installation instructions and tuning sheet before starting so that you will be prepared and will know your suspension set-up.*
- ***Warning:*** *The Mtn. Tamer is a high performance mountain sled back suspension. It has the ability to make extreme amounts of adjustments to the point of damaging results. The listed tuning and set-ups are for Yamaha sleds only. Know the limits of adjustability for your Mtn. Tamer suspension. There is no warranty on damage that is caused by tuning results.*
- *When installing do not alter any of the given measurements. Use Sharpie ultra fine tip marker or ball point ink-pen to accurately make your measurement marks*
- *Use very sharp drill-bits so that they do not walk to the side or cut elongated holes. It is recommended that you always center-punch your marks before drilling*
- *All bolts that thread into aluminum cross-shafts will need to have blue Loctite on the threads and will need to be torqued to 55 foot pounds.*
- *174" long track is recommended for sleds running 18 + psi of boost.*

Tear Down:

1. Loosen the track and remove the back 2 suspension bolts first, and then remove the front bolts second. Lift the back of the sled up high enough so that you can remove the back suspension from the track.
2. Remove the 2 upper idler wheels from the back arm. They will be reused on the new back arm. It is optional to remove all the small unnecessary idler wheels from the slide rails. We recommend that you do this for maximum weight loss. Running ice scratchers in their place is mandatory.
3. Remove the front and back portion of the suspension from the rails. These 2 assemblies can be removed as a complete unit; you do not need to disassemble them.

Installing the Front Arm:

4. Remove and discard limiter straps and cross-shaft assemble. Install the new limiter straps with the 3 new provided aluminum strap guide spacers onto the new provided cross-shaft. Longest spacer will go in the middle.
5. Relocate on the slide rails the limiter strap cross shaft 2" forward. To do this you will need to mark your spot on the slide rails and put in a good center-punch mark. Drill holes using a 25/64" drill bit. Install new assembled shaft onto rails using new 3/8"x1 1/4" long bolts with lock washers only. [See Fig. 1](#)
6. Install the new front suspension arm onto the slide rails using new 3/8"x1 1/4" long bolts with lock washers only.
7. **Drilling new bolt holes in the slide rails to mount the front shock. Hole Location:** Use a small ruler and draw a line straight down from the center of the front arm bolt hole. Measure straight forward from this point and mark 2 spots on the lower portion of the rails at 4-3/8" and 5-1/8". Then place a provided 3/8" flat washer on the bottom slot of the slide rail; place it up against the lip that sticks out. Mark the center of the hole on the two marked point and put a good center-punch on your mark, drill the holes using a 25/64" drill bit. [See Fig. 1](#)
8. **IMPORTANT!** Identifying the front and back shock. The 2 shocks are the same length, but they do not have the same internal valving. Each shock has a number located at the top of the black air body.
Front Shock # 951-99-071 / Back Shock # 952-99-071.
9. **Installing the front shock:** First insert the provided shock bushings into the bottom end of the shock. Use a rubber hammer to knock them in. Grease the inside of the bushing and the new provided shock cross-shafts. Install the shaft into the shock bushing. Note, one of the shock alignment collars has an "X" on it; this collar is pre-set in the rite location so that the shock is centered on the shaft. Slide the other collar on and squeeze the two

together with your fingers with the shock in the middle. Tighten the set-screw down tight enough so that you can feel the end of the set-screw sink in-to the aluminum shaft. Use red Loctite on the set-screws threads.

10. Place the shock assembly in the slide rails and into the desired set of mounting holes using new 3/8"x1 1/4" long bolt and lock washer only. Refer to the set-up sheet. Note, for deep snow riding and boondocking use rearward hole.
11. Place rubber O-rings and Heim reducers into the top side of the shock, then attach it to the suspension arm using the new 3/8"x 2" long bolt and nylock nut (no washer needed). Note, the air body will go on top with air valve facing the front.
12. **Front arm set-up:** Limiter strap setting and front shock air pressure will depend on your sleds set-up. Refer to the set-up sheet.
If your sled is stock the recommended starting point is, standard end hole in 3rd adjustment hole down on limiter strap with 95 psi in front shock. Note, there is no need for more or less air pressure for heavy or light riders.

Modifying the Slide Rail:

13. Measure 3/4" up from the top lip that sticks out on the slide rail. Do this in 2 spots so that you can mark a straight line on the rail. You will also need to utilize the bolt hole in the rail to make a rounded inside radius corner. This will be the cut line and this will be the spot that the Timbersled rail adapters will bolt onto. [See Fig. 2](#)
14. Cut your markings out with a jig saw. Use a new and sharp 3" long by 14 teeth per inch jigsaw blade. Use a side-head grinder with an 80 grit laird sanding disc to clean the cut portion of the slide rail. Round all edges to prevent cracking. [See Fig. 4](#)

Installing the Back Arm:

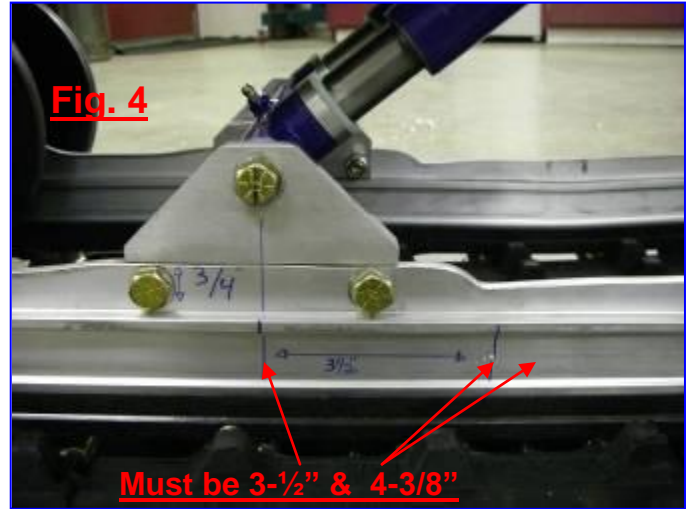
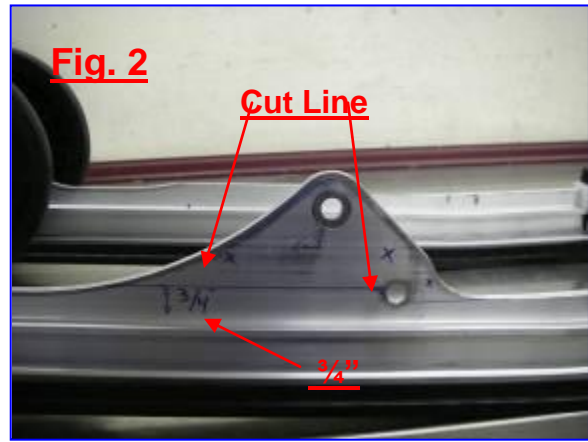
15. **Mounting the rail adapters:** Place the rail adapter so it sets flush on the rail along the cut edge with the mass of the bracket on the outside so that you can use the rail adapter as a jig to drill the bolt holes. Measure 29 3/4" from the center of the front arm bolt hole to the center of the back arm bolt hole on the rail adapter. Clamp it tight to the slide rail. Drill the two 25/64" holes in the rails (no pilot hole is needed). Remove the clamp and turn the rail adapter to the inside of the rail and bolt it on using new 3/8"x1" long bolts and nylock nuts (no washers needed). [See Fig. 4](#)
16. Drill new bolt holes in the slide rails for mounting the back shock in the same sequins as you did for the front arm shock. **Hole Location:** Measure and mark 3-1/2" & 4-3/8" straight forward. Drill holes with 25/64 drill bit. [See Fig. 4](#)
17. Install the back arm and shock in the same sequence as you did with the front arm and shock with air valve facing the front, using the desired hole in the slide rails. Refer to the set-up sheet. Note, it is recommended that you only put 40 PSI in the back shock at this time; this will make it easier for installing it into the sled.
18. Install the two 7" upper idler wheels onto the back arm cross shaft. Secure the wheels with the provided snap-ring. Note: if you are using aftermarket idler wheels in this spot, they must be no less than 5 1/2" diameter.
19. **Warning:** *If you are using aftermarket snow eliminating running-board inserts or a aftermarket tunnel extension on your sled, you will need to make sure that they are riveted in very good and that the portion of the running board were the drop bracket is at, is riveted into the insert. This will provide more rigidity to your tunnel and will insure that you will not bend the tunnel due to the added stress that the Mtn. Tamer suspension put on the tunnel.*
20. **Note,** *if you are installing this kit on a Nytro-mtx using the stock tunnel, it is mandatory to use the Timbersled Drop Brackets TSP-1055. Install the brackets at this time according to their instructions with one exception; you will not be using the 7/8"x7/16" long spacers that are included in the drop bracket kit.*

Installing the Suspension:

With the sled lifted up high enough so that the tunnel will clear the suspension, slide the suspension into the track.

21. Bolt the front arm in first using new 3/8"x1 1/4" long bolts with flat washers and lock washers. Note, getting the front bolts started can be tough sometimes. It works best to lift the back of the sled higher than needed, then put a floor-jack under the front of the track and jack it up until the bolt holes come into alignment.
22. To bolt in the back arm you will need to pull the back arm down to bring it into alignment with the drop bracket bolt holes. Use 3/8"x1 1/4" long bolts with flat washers and lock washers.
23. **Back arm set-up:** The back shock air pressure will depend on rider weight, and rider style. Riders under 200 pounds start at 145 psi. in rearward shock mounting hole. Riders 250 pounds start at 165 psi. in reward shock mounting hole. Riders 300 pounds start at 160 psi. in forward shock mounting hole. Refer to the set-up sheet for more shock and slide mechanism tuning on turbo sleds.
24. Use a hand-operated grease gun with quality water-proof bearing grease and pump each grease zerk full until you see it coming out of both ends of the cross shafts. Push up and down on the suspension a few times then re grease all zerks again.
25. Readjust the track to the factory specs.

Should you have any problems during installation, please call (208) 255-5644



Yamaha Mtn. Tamer Suspension Adjustments & Set-Up

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Understand How the Mtn. Tamer Suspension Works:

The biggest benefits of the Mtn. Tamer design is that it puts even pressure on the snow between the front and back portion of the suspension. This is achieved by our rear arm slide mechanism and the mounting position of the shocks. The slide mechanism couples the back portion of the suspension to the front at a specific spot in the range of travel. At this point the suspension will travel straight up into the tunnel, reduce the track angle, and applying the sleds weight toward the front, pulling it on top of the snow.

Knowing the 5 Adjustment Points on the Suspension:

1st Limiter Strap: The limiter straps are only adjustable from one end (the top). The lower end must be fastened around the limiter strap cross shaft and in-between the 3 alignment spacers. The strap has 10 adjustment holes in the middle of the strap. At the top end of the strap there are 2 other holes to choose from. The hole that is closest to the end of the strap is the standard adjusting hole. The hole that is 3" down from the end of the strap is an optional hole that will give the strap 10 coarser adjustments (works well on high-horse power sleds).

2nd Optional Shock Mounting Locations: Rearward hole mounting location: In this position the suspension will have a softer progression of spring rate threw out the range of travel. This will work the best for good ride quality and all around deep powder riding.

Forward hole mounting location: In this position the suspension will be 30% stiffer and will have a stiffer progression threw out the range of travel. This will work well for more aggressive riders and making more affective adjustments on turbo charged sleds.

3rd Float Shock Air Pressure: Note: In your installation instructions are recommended air pressure set-ups for rider weight. Your kit includes an air pump to adjust the spring rate of the shock. To do this, lift up the back end of the sled, remove the silver air valve-cap (be very careful that you do not get any moisture inside the air valve). Thread the pump onto the valve-stem until you feel the pump pressure up, you will be able to see the pressure on the gauge. Also keep in mind that when the pump pressures up the shock looses 4 psi. When you unthread the pump you will hear it release air but will not affect the exact pressure you gave it. When tuning your suspension it is best to change air pressure in increments of 10 psi at a time. The Mtn. Tamer shocks have specific air pressure range that they must run in so that you do not damage the suspension

Shock Pressure Ranges: Front shock, 40 psi. Min. and 95 psi Max

Back shock, 120 psi Min. and 175 psi Max

Warning: *If your suspension is bottoming out you need to stop and readjust. If you are unable to make the shocks perform properly you need to stop riding and contact us for assistance. Damage will occur if you ignore the problem.*

4th & 5th Back Arm Slide Mechanism: The slide mechanism has 2 adjustment points by adding or removing aluminum shims that are included in the kit.

1st you can adjust the sleds rear ride height by adding a shim onto the top side of the slide mechanism. This works well for fine tuning the amount of ski pressure your sled has on the trail without jeopardizing the amount of ski lift when climbing.

2nd you can adjust how much suspension couples by adding a shim to the bottom side of the slide mechanism. In conjunction with the limiter strap, this controls how much ski lift your sled will have.

The Slide Mechanism has a maximum and minimum shim capacity.

Top Side of Slide: 0 Min. and 1/2" Max

Bottom Side of Slide: 0 Min. and 3/4" Max

Yamaha Recommended Set-Ups:

The given set-ups are intended to control ski lift and have been tested with a 200 lbs rider. They are a good starting point to go by; however, every rider has a different liking and will need to fine tune the suspension from these set-up points.

Normally Aspirated Sled *Slide shims:* No shim on bottom & 0" shim on top
(Up to 160 HP) *Front shock:* 95 psi. In rearward mounting hole
Back shock: 145 psi. In rearward hole
Limiter strap: 3th hole down, using standard end hole on strap

Turbo Sled, 10 psi of boost *Slide shims:* 1/2" shim on bottom & 1/4" shim on top
(Up to 230 HP) *Front shock:* 60 psi. In forward mounting hole
Back shock: 155 psi. In rearward mounting hole
Limiter strap: 7th hole down, using standard end hole on strap

Turbo Sled, 15 psi of boost *Slide shims:* 3/4" shim on bottom & 1/2" shim on top
(Up to 280 HP) *Front shock:* 55 psi. In forward mounting hole
Back shock: 140 psi. In forward mounting hole
Limiter strap: 5th hole down, using optional end hole on strap

Turbo Sled, 18 psi of boost *Slide shims:* 3/4 shim on bottom & 1/2" shim on top
(Up to 300 HP) *Front shock:* 45 psi. In forward hole
(174" track recommended) *Back shock:* 150 psi. In forward mounting hole
Limiter strap: 8th hole down, using optional end hole on strap

Turbo Sled, 20+ psi of boost *Slide shims:* 3/4 shim on bottom & 1/2" shim on top
(Up to 350 HP) *Front shock:* 30 psi. In forward hole
(174" track recommended) *Back shock:* 160 psi. In forward mounting hole
Limiter strap: 10th hole down, using optional end hole on strap

Suspension Maintenance:

- Check shock air pressure once a month.
- Grease all zerks 3 times per year using quality water-proof bearing grease.
- Re-tighten all bolts after first ride and each year.
- Re-tighten inner air-valve needle after 5 rides (special tool needed, Can be purchase at any hardware store).
- Shock oil change and service is recommended every 2000 miles (Timbersled offer this service).

Warranty:

Timbersled Products inc. warranty's all products of its own manufacture against defects in materials and workmanship for a period of one (1) year from the date of purchase. Replacement and / or repair warranty is valid only if all terms and conditions are met.

1st Timbersled Products inc. requires notification prior to replacement of any part under this warranty.

2nd Replacement and / or repaired parts will be supplied upon receipt of defective parts.

3rd Timbersled Products inc. shall have no obligation under this warranty if:

- Buyer fails to notify Timbersled Products inc. of any possible defect.
- Product is improperly installed.
- Product is used in an application other than its original intent.
- Buyer continues to use product after product malfunction.

The obligation of Timbersled Products inc. is limited to replacement and / or repair of defective products only for the period of time as stated above. Timbersled Products inc. has no other obligation or liability for any other injury or damage resulting there from.

Should you have any additional tuning questions, please call (208) 255-5644