AMP RESEARCH

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Fork

Frame

KIT CONTENTS

AMP Fork Kit includes:

QTY	PART#	DESCRIPTION
1	10-00827-40	Pin Removal Tool
1	10-01611-40	Pin Press Out TPPL F3/F4
1	10-01610-40	Pin Press In Tool F3
1	10-01609-40	Pin Press In Tool F4
1	10-01172-40	Pin Guidance F4
1	10-09472-40	Bearing Removal Tool F4
1	10-00947-40	Bearing Removal Tool
1	10-00760-40	Shock Tool
1	10-02159-40	Snap Ring Pliers
1	10-02160-40	Scribe
1	10-02161-40	Plastic Face Hammer
2	10-0909A-40	Pin Alignment - Short
1	10-0909B-40	Pin Alignment - Long
1	10-02167-40	Loctite
1	10-02168-40	Bottle Shock Oil - 7.5 wt.
1	10-02025-10	O-Ring Seal Kit - F1/F2 Shock
1	10-04139-10	Pin & Bushing Kit - F1 & F2
1	10-04141-10	Pin & Bushing Kit - F3XC SS
1	10-04140-10	O-Ring Seal Kit - F4BLT Shock
1	10-04143-10	O-Ring Seal Kit - F3XC Shock
1	10-04144-10	Pin & Bushing Kit - F4BLT
12	20-02002-10	Retaining Ring - F1/F2
5	10-02169-10	Washer - Stainless .005
5	10-02170-10	Washer - Stainless .010
12	20-02182-10	Washer - Nylon F3XC/F4BLT
12	10-01175-10	Pivot Pin Cap Screw F3/F4
1	10-02157-10	Service Manual Frame/Fork

AMP Fork & Frame Kit add:

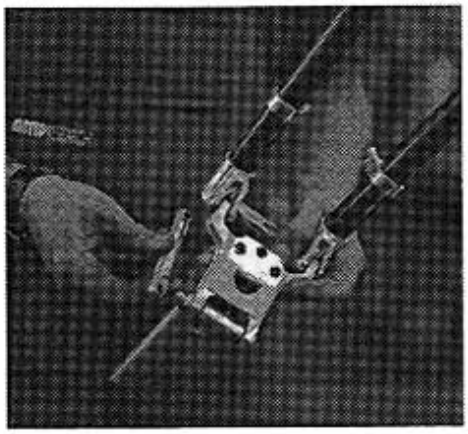
1	10-03133-20	O-Ring Seal Kit - B3 Shock Old Style
1	10-02026-20	O-Ring Seal Kit - B4/B5
1	10-03131-20	O-Ring Seal Kit - B3 Shock New Style
12	10-02013-20	Washer-Nylon
1	10-02116-20	Pivot Pin Assembly Kit
1	10-02033-20	Swingarm Axle/DU Bearing Kit - B2/B3/B4
12	20-02033-10	Washer - Nylon

NOTE: For Reference only! Dealer Service Kits no longer available

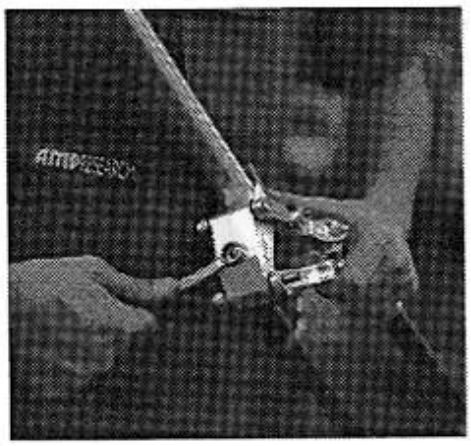
FORK SECTION

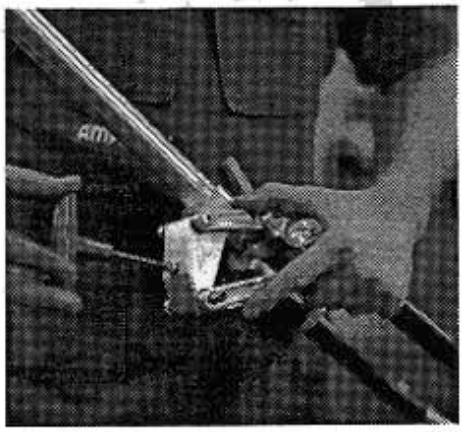
REPLACING THE SPRING

STEP 1) Remove the 4mm cap screws and nylon washers from the damper pins. Slide the damper off the pins.

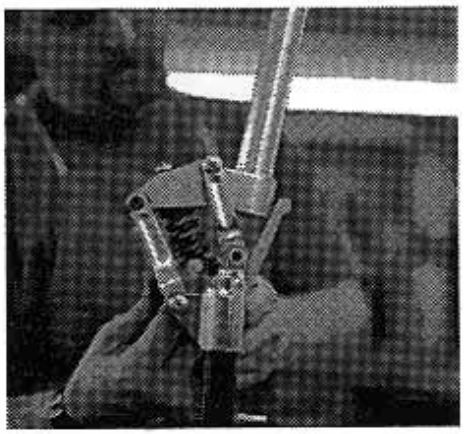


STEP 2) Loosen the preload screw jam nut (10-02003-10) using a 13mm wrench. Turn the 4mm preload screw counterclockwise until it stops.



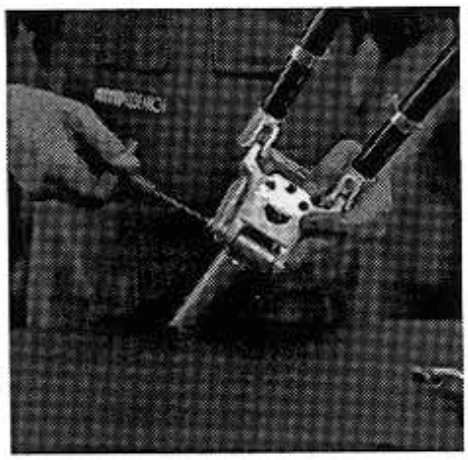


STEP 3) Extend fork and remove preload collar (10-



00665-10) and spring.
(Older AMP forks will have an elastomer inside the spring)

STEP 4) Apply a small amount of high quality anti-seize onto the preload collar where it connects with the preload screw. Place preload collar onto

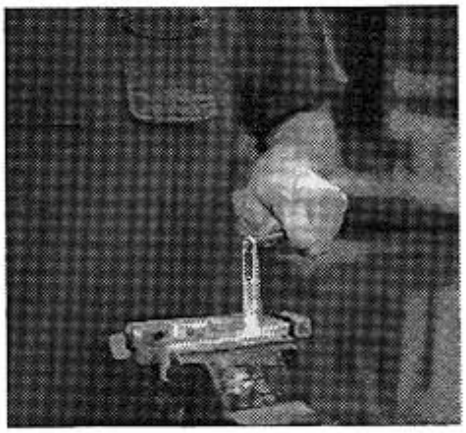


spring, (and elastomer for older models) extend fork and install assembly.

STEP 5) Slide damper back onto the pins and replace nylon washers and 4mm cap screws (Use locktite 242 Blue on the screws). Reset spring preload as described in owners manual.

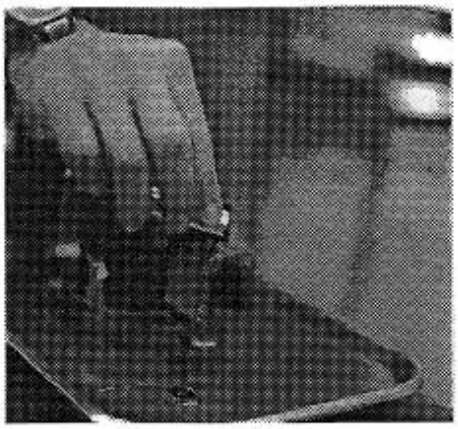
REPLACING THE DAMPER OIL

STEP 1) Remove the 4mm cap screws and nylon washers. Slide the shock off of the pins.

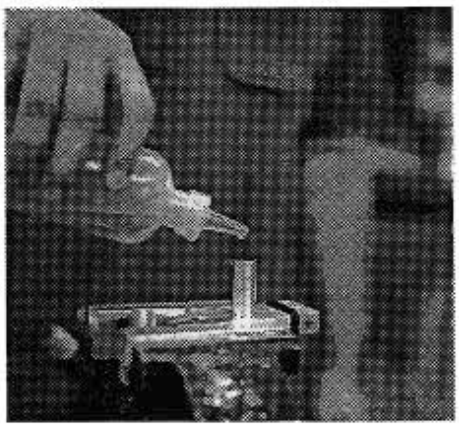


STEP 2) Clamp the damper in the center hole of the shock tool (10-00760-40). Unscrew the endcap (10-00633-10) using the press out pin (10-01611-40) to twist the endcap off.

STEP 3) Remove the shock from the tool and drain the oil. Clean the shock out by filling with Automatic Transmission Fluid (ATF) and working the

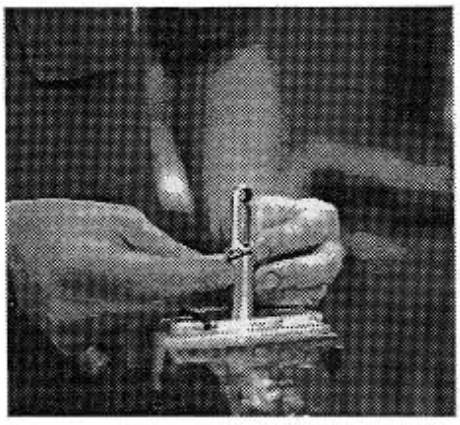


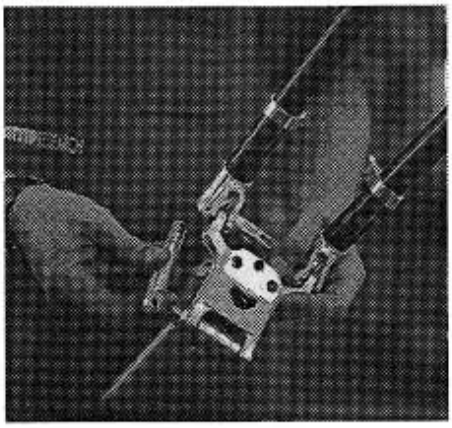
piston up & down several times until clean. You may also use any bicycle specific fork oils, 7.5wt is stock.



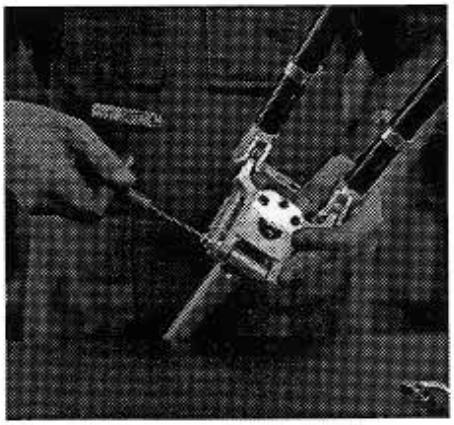
CAUTION: NEVER USE SOLVENTS TO CLEAN YOUR DAMPER SINCE IT WILL DAMAGE THE SEALS.

Step 4) Lightly clamp shock body in tool and fill with ATF or other bicycle specific oil. Very slowly push the piston up and down to release any trapped air. Add oil if necessary.





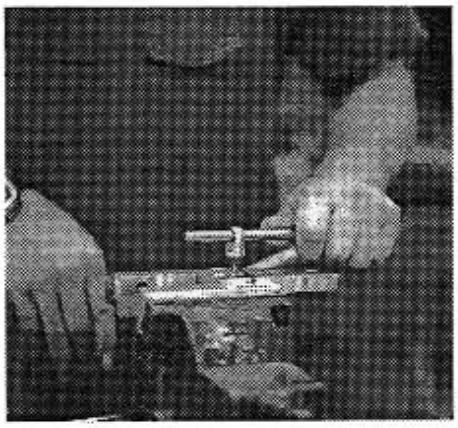
Step 5) Carefully remove the O-ring from the endcap and screw the endcap onto the housing. Slide the O-ring over the endcap and onto the shock body. Slowly tighten the endcap letting excess fluid escape. Loosen the endcap slightly and slide the O-ring into the groove. Tighten endcap.



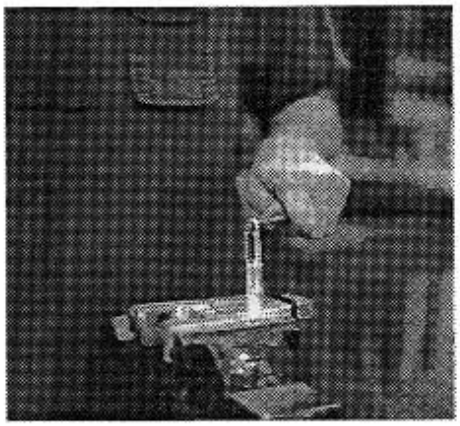
Step 6) Slide damper back onto pins replace nylon washers and cap screws.

CAUTION: DO NOT OVER TIGHTEN ENDCAP.SLIGHTLY TIGHTER THAN FINGER TIGHT IS SUFFICIENT.
NOTE: IF THE ENDCAP DOES NOT CLOSE ALL THE WAY, LOOSEN AND RETIGHTEN TO LET OUT EXCESS FLUID.

REPLACING THE DAMPER SEALS



STEP 1) Remove the 4mm cap screws and nylon washers. Slide the damper off of the pins.



STEP 2) Fully extend the damper and clamp the shaft in the appropriate hole in the shock tool (10-00760-40). Unscrew damper eyelet.

STEP 3) Turn damper over and clamp the body in the clamping tool. Unscrew endcap.

STEP 4) Pull out shaft & piston. Examine shaft. If there is any scoring or gouging the shaft needs to be replaced.

Remove O-ring from the piston and tetra seals from end cap using a scribe needle. Clean parts and install new seals.

NOTE: Seals should be soaked in oil before installation. Check Tetra seal seating by sliding the shaft through the holes.

STEP 5) Slide shaft & piston into housing. Clamp shaft in tool and reinstall eyelet.

STEP 6) REPEAT STEPS 4 & 5 FOR REPLACING DAMPER OIL. NOTICE: DO NOT OVER TIGHTEN ENDCAP!

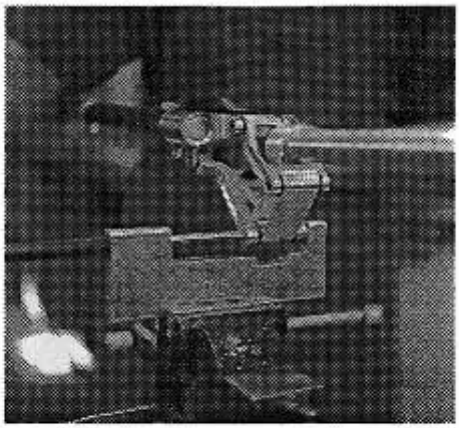
REPLACING FORK PINS & BEARINGS

CAUTION: AS SOON AS PLAY IS DETECTED IN THE BEARINGS THE FORK NEEDS TO BE REBUILT. CONTINUED RIDING MAY RESULT IN IRREVERSIBLE DAMAGE TO THE FORK!

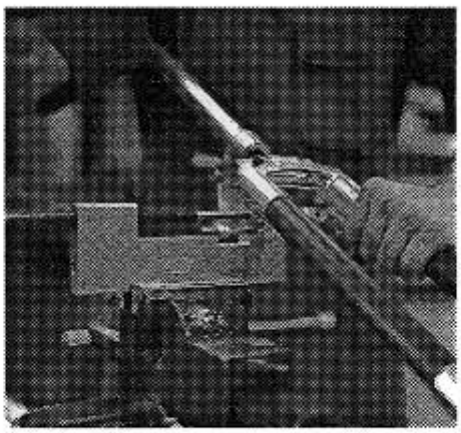
STEP 1) Remove all 4mm cap screws, nylon washers and o-rings and discard.

STEP 2) Slide the damper off of the pins. Remove the nylon washer, aluminum spacer, and o-ring.

STEP 3) Loosen the 13mm preload screw jam nut. Turn the 4mm preload screw counterclockwise until it stops.



STEP 4) Extend fork and remove spring and preload collar.(Older models will also have an elastomer.



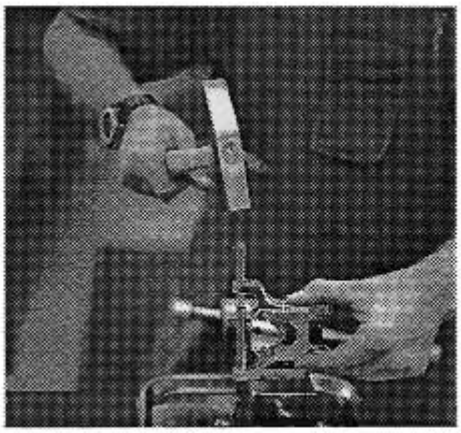
STEP 5) Clamp the bottom of the AMP pin press (10-00827-40) into a vise.

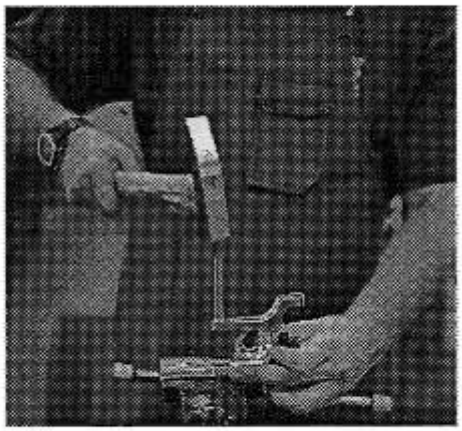
Hold fork as shown and press out upper pin. Use the Small press out tool (10-01611-40) for all F3 F2 & F1 pins and use the large F4 press out tool (10-01171-40) for the large F4 pin.

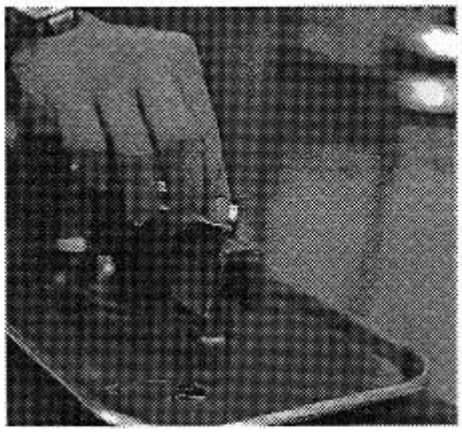
STEP 6) Using appropriate press out tool press out the two lower pins.

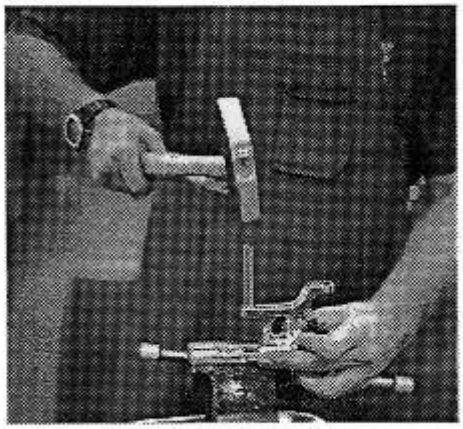
STEP 7) Separate fork blades from linkage assembly.

STEP 8) Use appropriate press out tool to remove the two damper pins.

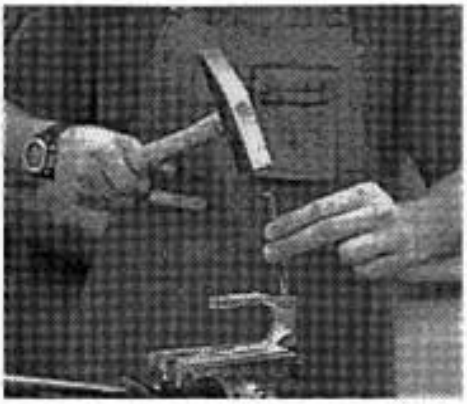








STEP 9) Make sure that all aluminum parts are clean. Lay them on a flat table and check to see if all parts are plane (Flat). It is important if the fork has been involved in any type of crash to check these parts. If they are not plane, they need to be replaced.



STEP 10) Use the bearing removal tool (10-00947-40) and the plastic faced hammer to remove all of the bearings except the two on the front of the upper swingarm.

STEP 11) For removal of upper swingarm bearings use drill blank and plastic hammer to tap out opposite bearings as shown in diagram.

STEP 12) It is very important to clean all parts before reassembly.

STEP 13) Press in the new bearings. Use a vise with aluminum pads. Make sure bearings are completely seated and have their slots facing down (Towards the ground fork on bike)

STEP 14) Clamp the AMP pin press in a vise. Remove the press out tool and replace with the appropriate press in tool (F2, F3 or F4).

STEP 15) Slide large o-rings onto upper and lower swingarms. The swingarms should fit tight on the steerclamp. If they do not use the supplies shims on one or both sides until play is removed.

STEP 16) Line up the holes on the lower swingarm and steerclamp. Tap the long alignment pin,(F1,F2&F3 use part B909B. F4 large pins use B1172) through from left to right (From the back) until it sticks out the other end. Start the new pin with the plastic hammer and then press in the pin until the assembly pin bottoms out on the swingarm. Seat the o-rings in their grooves.

NOTE: COATING THE PINS WITH TEFLON LUBE WILL EASE ASSEMBLY, BUT USE IT SPARINGLY AND WIPE OFF EXCESS AFTER ASSEMBLY.

STEP 17) Install the upper swingarm onto the steerclamp using the same procedure. Seat the upper swingarm o-rings in their grooves. Move both swingarms up & down to make sure they do not bind.

STEP 18) Slide large o-rings onto upper fork tabs and install upper swingarm. It may be necessary to tap the swingarm into place using the plastic hammer. If the fit is loose use the shims as described earlier. Install the long alignment pin and press in the damper pin from left to right. Seat the o-ring in their grooves.

STEP 19) Slide o-rings onto lower fork tabs. Install the lower swingarm into the lower fork tabs. Check for side play, if detected use shims as described earlier. It may take a light tap with the plastic hammer to get the swingarm into the tabs. Install the two short alignment pins (10-0909A-40) one on each side and tap in with the plastic hammer. Install new lower pins. Seat o-rings in their grooves.

STEP 20) Repeat step 4 in replacing the fork spring.

STEP 21) Using the bearing removal tool tap out the two damper bearings (20-02004-10). Press in new bearings, use a vise with aluminum pads.Place 1 small o-ring on

the rear pin then the alum spacer. Place 1 nylon washer on the front damper pin.

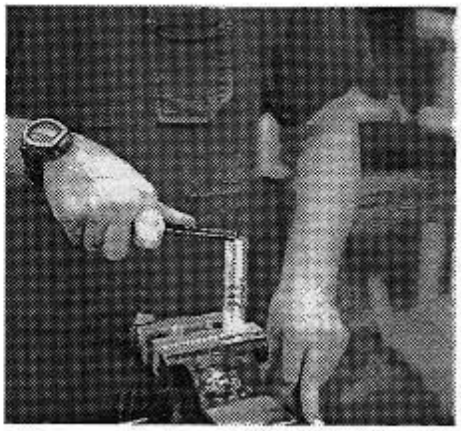
STEP 22) Place the small o-rings (20-02112-10) inside the the thin nylon washers (10-02182-10) and place them on all of the pins except the lower blade pins. Use Locktite 242 on the 4mm cap screws and tighten slightly more than hand tight. Use a regular nylon washer(20-02112-10) on the outside of the lower tabs and no washer at all on the inside.

FRAME SECTION

REPLACING THE REAR SPRING

STEP 1) Remove the 5mm shock mount bolt (10-02014-20). Slide the shock out of the mounting tabs and remove sleeve (10-00692-20) and washers (B2013). If washers are worn replace.

STEP 2) Back off preload adjuster (10-00561-20) remove spring collar, Remove spring.Install new spring and reverse assembly instructions.



REPLACING THE SHOCK OIL

STEP 1) Repeat steps 1 & 2 in changing the spring.

STEP 2) Remove 4mm or 6mm screws from shockstay and remove shock.

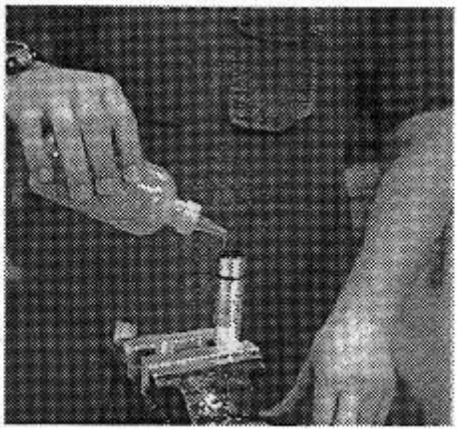
STEP 3) Clamp shock body in vise on flats provided. If you have a '97 shock you will need to clamp your shock body in a shock tool (10-00760-40). Use a green Park pin spanner wrench to remove the endcap.

STEP 4) Remove shock from vise and dump out the oil. Clean out the body by flushing it out with ATF or any bicycle specific shock oil. (7.5wt is stock.).

CAUTION: SOLVENTS WILL DAMAGE SHOCK SEALS!

STEP 5) Clamp the shock body in the vise and fill with your preferred shock oil. Very slowly stroke the piston up & down to release trapped air. Add oil if necessary. Follow steps 1-5 on diagram for final assembly.

B3 or B4 shocks use same drawing. On step 4 of drawing bring the compensator piston about 1mm from bottom of shaft. The spring is easily compressed without the 1/4" tube.



STEP 6) If shock makes a hissing sound you did not get all of the air out repeat drawing instructions steps 1-6.

REPLACING SHOCK SEALS

Step 1) Remove the shock mount bolt using a 5mm allen wrench and 10mm wrench. Slide shock out of mounting tabs and remove sleeve and nylon washers. If washers are worn, replace.

Step 2) Back off preload adjuster and remove spring collar. Remove spring and preload adjuster.

Step 3) Remove socket cap screws with a 4 mm allen wrench and remove shock from shock from shockstay.

Step 4) Clamp shock shaft in appropriate hole in shock tool. Place sleeve in shock bearing. Slide a drift or 5mm allen wrench thru hole and unscrew shock eyelet. Using the sleeve will prevent damage to bearing.

Step 5) Turn Shock over and clamp shock body in vise as shown. Using a green park spanny wrench, unscrew shock endcap.

Step 6) Pull out shaft and piston assembly and allow oil to drain. Remove o-ring from the piston and tetraseals from the shock body and endcap using a scribe needle. Clean parts and install new o-ring and seals.

NOTE: O-RING AND SEALS SHOULD BE SOAKED IN OIL BEFORE INSTALLING. BE SURE THE TETRASEALS IN THE SHOCK BODY AND ENDCAP ARE FULLY SEATED BY SLIDING SHAFT THROUGH HOLES.

Step 7) Slide shaft and piston into shock body. Clamp shaft in tool and install shock eyelet.

Step 8) Turn shock over and clamp shock body in vise. Fill with Automatic Transmission Fluid or Bicycle Specific Oil. Very slowly push shock shaft up and down to eliminate any trapped air. Add oil if necessary.

Step 9) Remove old o-ring from endcap and screw endcap onto shock body. Slide new o-ring for endcap over the endcap and onto the shock housing. Slowly tighten the endcap letting excess fluid escape. Loosen endcap partially so that the o-ring groove is exposed. Slide the o-ring up the shock housing until it snaps into place on the endcap. Tighten endcap.

CAUTION: DO NOT OVER TIGHTEN ENDCAP. USE LIGHT PRESSURE (SLIGHTLY MORE THAN FINGER TIGHT).

NOTE: IF THE ENDCAP DOES NOT CLOSE COMPLETELY, LOOSEN AND TIGHTEN SEVERAL TIMES TO LET OUT EXCESS FLUID.

Step 10) Install preload adjuster, spring and spring collar. Camp shock in shockstay. Attach shock eyelet to frame making sure that the sleeve and nylon washers are in their proper position and that all bolts are secure.

Step 11) Reset spring preload as described in the Owners Manual.

CAUTION: USING EXCESSIVE AMOUNTS OF SPRING PRELOAD CAN CAUSE TH COILS TO BIND WHICH MAY RESULT IN FRAME DAMAGE.

NOTE: IF A "SQUISHING" NOISE CAN BE HEARD WHEN RIDING THE BIKE, THERE IS AIR IN THE SHOCK. REMOVE THE SHOCK AS DESCRIBED IN THIS MANUAL AND REPEAT STEPS 6 & 7.

REPLACING SWINGARM AXLE AND DU BEARINGS

Step 1) To remove the swingarm, loosen the two allen bolts on the swingarm attachment tabs using a 4mm allen wrench and tap out the swingarm axle using a drift or long alignment pin

Step 2) Tap out the DU bearings using the bearing removal tool (10-00947-40). Press in new bearings in a vise with aluminum jaws.

Step 3) Tap the long alignment pin through the holes of the bottom bracket tabs and swingarm. Tap in the swingarm axle with the plastic faced hammer. Tighten allen bolts.

REPLACING REAR PIVOT PIN ASSEMBLY

Amp frames have been produced with two rear pivot systems. Early models used an aluminum pivot pin which was pressed into the swingarm. Later models used a stainless steel pivot pin which was pressed into the shockstay.

Identify your type of pivot assembly and use instructions "a" for the older style frame and instructions "b" for newer versions.

Step 1) a. remove snap rings and nylon washer from pivot pins.

b. remove Allen bolt (Prt #B215) using 1/8 Allen wrench, remove aluminum washer & O-ring.

Step 2) Separate shockstar (Part # B684) from swingarm (Part # B689).

a. remove nylon washer

b. remove nylon washer and o-ring.

Remove shockstay and swingarm from frame.

- To remove shockstay, refer to step 1 in Changing rear spring.
- To remove the swingarm, refer to step 1 in Changing Swingarm Axle & DU Bushings.

Step 3) a. Tap out pivot pins using a steel hammer. Be sure to support the swingarm. Press out the bearings using the bearing removal tool.

b. Tap out pivot pins using a steel hammer. Be sure to support the shockstay. Press out the bushings fro the swingarm using the bearing removal tool.

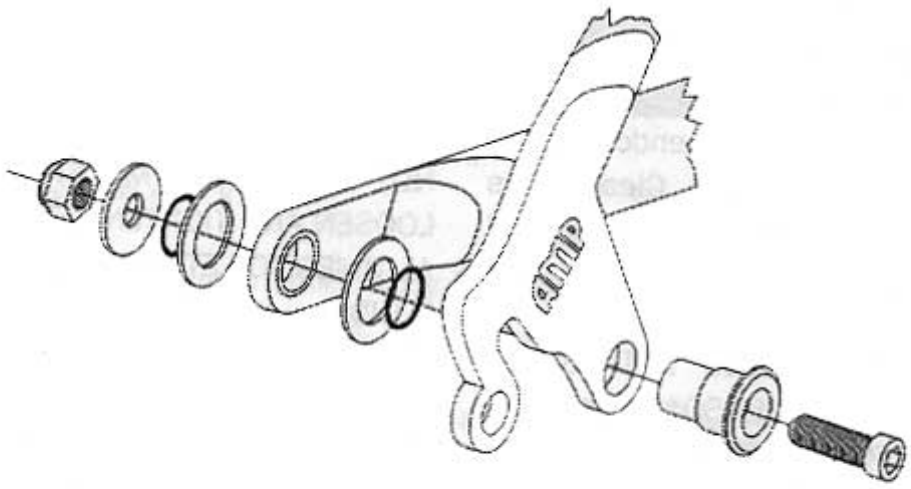
Step 4) a. Press the stainless steel pivot pins into the swingarm facing out (away from wheel). The hole is slightly small for the new pivot so a vise will be necessary for installation. The opposite side of the swingarm must be supported by a spacer of some type (a socket or large nut work well). Coat the pivot pin with Loctite (642 or equivalent) prior to installation. After the pivot pin has been pressed into the swingarm there will be some excess aluminum which was removed (extruded) from the hole. Remove this before assembling the swingarm and shockstay. Press the bearing into the shockstay using a vise with aluminum pads.

b. Press in the stainless steel pivot pins into the shockstay using the AMP pin press tool. coat the pivot pin with Loctite (642 or equivalent) prior to installation. Press the bearing into the swingarm using a vise with aluminum pads.

Step 5) If you have removed the shockstay and swingarm from the frame, reinstall them now. If not, got Step 6.

Connect the shockstay to the frame with the shock mounting bolt. Be sure the sleeve and nylon washers are installed. If the washers are worn, replace.

Tap the long alignment pin through the holes of the bottom bracket tabs and swingarm. Tap in the swingarm axle with the plastic faced hammer. Tighten allen bolts.



Step 6) Place one nylon washer and one o-ring on each pivot pin. Connect the shockstay and swingarm. Install another nylon washer, o-ring and aluminum washer. Install the allen bolts and tighten.

F-4 BLT

REBUILD INSTRUCTIONS

and F3, F4, B3, B4 & B5 1997 Front & Rear

Step 1) Remove shock from fork by removing upper and lower shock bolts using a 4mm allen wrench. Remove and inspect nylon washers. Replace if worn.

Step 2) Rotate lower end of shock from mounting tabs, then slide upper end of shock off of upper pin.

Step 3) Remove spring from shock by compressing spring to enable removal of preload adjuster wire ring from groove. Slide spring, preload adjuster, and spring collar off shock.

Step 4) Fully extend shock shaft and clamp shaft in vise using appropriate tool (shock housing should be on the bottom). Unscrew upper eyelet from shock shaft using a 5/16" x 3" pin.

Step 5) Clamp shock body in vise with shaft on bottom and endcap eyelet on top using appropriate shock body clamping tool. Unscrew endcap eyelet from shock body using a 5/16" x 3" pin. Remove compensator spring from shock body.

Step 6) Flip shock over and reclamp in vise using appropriate shock body clamping tool. Place a pan under shock to catch old shock oil during next step.

Step 7) Using light pressure, push upper end seal holder down with appropriate seal holder setting tool until internal seal holder protrudes from shock body and oil begins to drain.

Step 8) Remove both seal holders and shaft from shock body.

Step 9) Remove o-rings from piston and seal holders and tetraseals from seal holders using a scribe needle. Clean parts and install new o-rings and seals.

Note: O-rings and seals should be soaked in oil before installing. Be sure the Tetraseals in the seal holders are fully seated by sliding shaft through holes.

Step 10) Flip shock body over and reclamp in vise. Install the upper seal holder using the appropriate seal holder setting tool. Make sure the seal holder is fully seated against the wire ring in the end of the shock body.

Step 11) Plug hole in seated seal holder with finger and fill shock body with oil.

Step 12) Slide shaft with piston down slowly through oil until shaft bottoms on lower seal holder. *NOTE: Keep hole in lower seal holder covered until shaft starts to protrude through. This will prevent excess oil drainage.

Step 13) Top off shock body with oil. Allow shock to sit for a few minutes. This will allow any air in oil to float to the top and escape.

Step 14) Using appropriate oil level setting tool, push lower seal holder up until setting tool contacts shock body. (Excess oil will spill from top of shock body). *NOTE: Do not push on shaft! It will travel up with seal holder.

Step 15) Press upper seal holder into place on shaft. *Note orientation of seal holder.

*IMPORTANT: Keep firm upward pressure on oil level setting tool while seating upper

seal holder. To ensure proper oil volume, oil level setting tool must not move down!

Step 16) Use seal holder setting tool to push entire assembly down slowly until lower seal holder stops on wire ring. *IMPORTANT: Keep some upward pressure on oil level setting tool while moving assembly down to ensure all components travel together and no air enters the system.

Step 17) Place compensator spring in end of shock body and compress while screwing on endcap using a 5/16" x 3" pin. *NOTE: Do not overtighten endcap. Use light pressure (slightly more than finger tight).

Step 18) Flip shock body over and reclamp shock shaft using appropriate tool. Install shock eyelet on shaft.

Step 19) Reinstall spring collar, spring, preload adjuster, and preload adjuster wire ring. Reattach shock to fork making sure that the nylon washers and o-rings are in their proper positions and that all bolts are secure.