June 3, 1993

MONGOOSE AMPLIFIER
OWNER'S & SERVICE MANUAL

TABLE OF CONTENTS

OWNER'S MANUAL

I. REAR SUSPENSION - FRAME

A. GENERAL INFORMATION
B. SUSPENSION TUNING
C. MAINTENANCE

II. FRONT SUSPENSION - FORK

A. SUSPENSION TUNING
B. MAINTENANCE

III. WARRANTY

SERVICE MANUAL

1. REAR SUSPENSION - FRAME

A. CHANGING THE SPRING
B. CHANGING SHOCK OIL
C. REPLACING SHOCK SEALS

2. FRONT SUSPENSION FORK

A. CHANGING THE SPRING
B. CHANGING SHOCK OIL
C. REPLACING SHOCK SEALS

I. REAR SUSPENSION - FRAME

WARNING! Special tools and knowledge are required to assemble this bicycle frame. Incorrect assembly could create a dangerous riding condition which may result in serious injury. Mongoose strongly recommends that you have your Mongoose frame/fork assembled by a qualified, professional bicycle mechanic.

A. GENERAL INFORMATION

1. Bottom Bracket: Shell width is 68mm. Recommended spindle length is 126mm. Minimum spindle length is 122.5mm. Threads are "English".

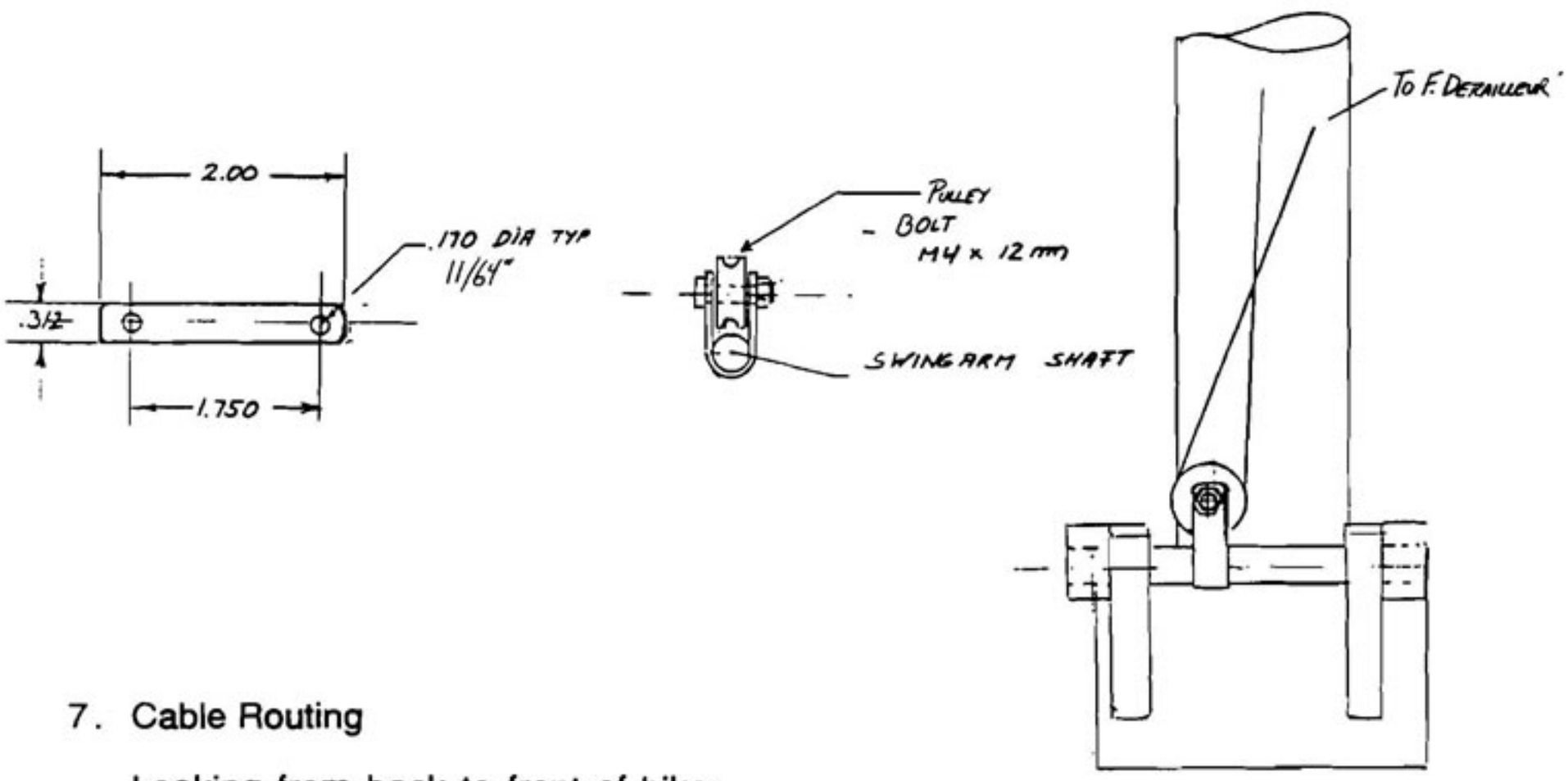
2. Front Derailleur: 1 3/8" (34.9mm) top pull.

3. Seat Post: 31.6mm. We recommend Control Tech's "Control Post" for extra rigidity.

4. Rear Drop Out: 135mm spacing

5. Brakes: Use low profile cantilevers. Old style "wide" brakes may restrict heel clearance.

6. If you choose to use a bottom pull derailleur you will need to install a pulley to properly route the derailleur cable. Cut a thin strip of aluminum to the dimensions shown below and drill two holes (11/64" diameter) in each end. Wrap the strip around the swing arm shaft (axle) and attach a grooved pulley (available at most bike shops) with a nut and bolt. (See Illustration)



7. Cable Routing

   Looking from back to front of bike:

   a. Route rear derailleur cable on right side of 3 cable housing stops.

   b. Route rear brake cable in the middle stops.

   c. Route front derailleur cable on the left side stops.

8. The offset rear brake cable stop has no influence on brake performance. Adjust the brakes and brake pads properly as per manufacturer's instruction. It takes a little practice, but you shouldn't have any trouble dialing in the brakes. Right side may have a slight "off-cant".

B. SUSPENSION TUNING

1. Setting Suspension "Sag" (preload)





a. In a normal riding position the suspension should sag 5/8" (16mm). Measure the distance from the rear of the saddle to the rear axle. Sit on the bike in your normal riding position and have someone take a measurement from the same points. Turn the preload adjuster on the shock until the specified amount of sag is achieved. The sag (preload) adjustment is the most important setting on your suspension frame. (See Illustration)

b. Do not ride with excessive preload. If the piston starts "kicking", (i.e., making a metal-to-metal knocking sound) especially going downhill under braking, you have too much preload on the shock.

c. Do not be tempted to make the rear end "lock-out" by cranking up the preload. Learn to ride suspension as it was designed, with movement in both directions. Coil bind may result from too much preload which could damage the frame.

2. The shock shafts for both the frame and fork will have a slight amount of oil on them. This is normal with the movement of the piston in and out of the shock assembly.

3. Frame geometry can be altered slightly to suit individual riders' preferances. Sliding the shock out of the shockstay clamp will increase the head angle up to 1° and increase the BB height by 5/8" (16mm). The shock **must not** be moved more than 1/2" (13mm) out of the shockstay clamp.

C. MAINTENANCE

1. No regular maintenance is required. All bearings are maintenance free. Constant riding in mud and muddy sand may reduce bearing life. It is important to keep pivot points clean by rinsing with water. **Do not** use any type of lubricant on bearings after rinsing off your frame. Lubricants will attract dirt and carry it into the pivot points where it will act as an abrasive. If the bearings need to be changed, bearings and pins must be changed simultaneously. See your authorized Mongoose Dealer or contact AMP Research for replacement.

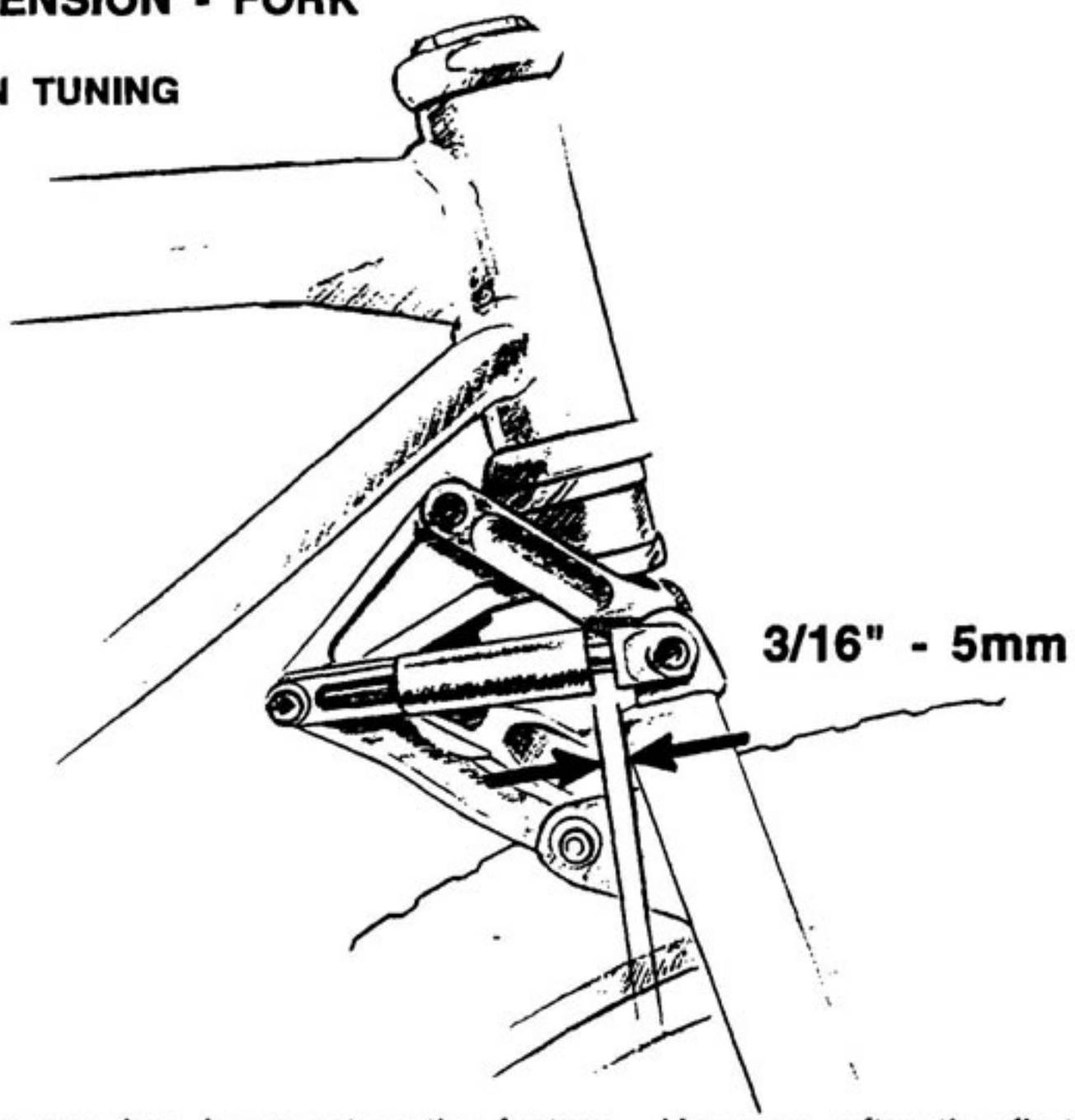
2. Make sure circlips are fully seated on pivots at rear dropouts.

3. Oil viscosity and spring rates can be changed for different damping characteristics. The spring provided will work well for most riders between 140 and 190 lbs. See your Mongoose dealer or call AMP Research for details.

4. Scratches on the frame can be polished out with extra fine grade steel wool.

II. FRONT SUSPENSION - FORK

A. SUSPENSION TUNING

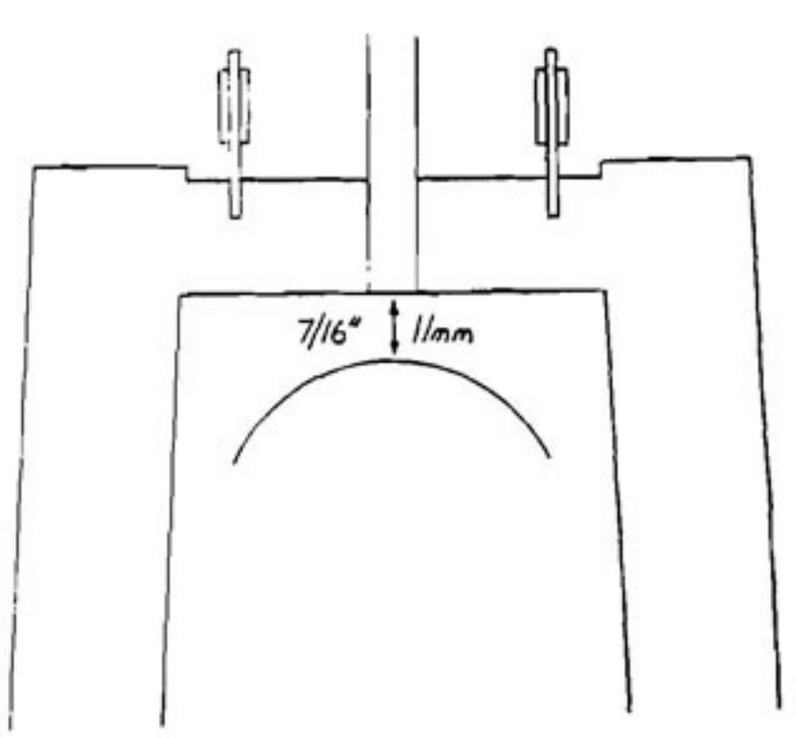


1. Suspension sag has been set at the factory. However, after the first ride it is advisable to check sag. The front shock eyelet and shock body should just touch without rider weight on the bike. When you sit on the bike in your normal riding position there should be a gap between the shock eyelet and shock body of 3/16" (5mm). If you do not have the correct amount of sag, adjust spring preload. (See Illustration)

2. To adjust spring preload loosen the jam nut under the linkage assembly and tighten or loosen the preload screw. Tighten jam nut after correct sag is set.

3. Optional spring rates are available directly from AMP or through your authorized Mongoose Dealer. The spring provided will work well for most riders between 140 and 190 lbs.

4. IMPORTANT! With the front wheel in the fork there should be 7/16" (11mm) of clearance between the top of the tire and the bottom of the fork crown. If a tire is used that does not maintain this distance there is the possibility of the preload adjustment screw hitting the tire under full compression.



B. MAINTENANCE

1. No regular maintenance is required. All bearings are maintenance free. Constant riding in mud and muddy sand may reduce bearing life. It is important to keep pivot points clean by rinsing with water. **Do not** use any type of lubricant on bearings after rinsing off your fork. Lubricants will attract dirt and carry it into the pivot points where it will act as an abrasive. If the bearings need to be changed, bearings and pins must be changed simultaneously. See your authorized Mongoose Dealer or contact AMP Research for replacement.

   If a squeaking noise becomes noticeable, turn your bike upside down and squirt water on the preload collar and preload screw. This should eliminate the noise. You may lube the preload collar and preload screw contact area using a high-quality motorcycle chain lube.

III. WARRANTY

The Mongoose Amplifier is covered under a limited warranty for parts and labor. During the warranty period, any part found to be defective under the terms of this limited warranty will be, at the manufacturer's option, repaired or replaced free of charge. Shipping charges and Mongoose Dealer labor charges will the responsibility of the original purchaser. This warranty does not cover failure due to accident, abuse, misuse, neglect, normal wear and tear, improper installation, improper maintenance, unauthorized modification, use of unauthorized replacement parts, etc. This warranty is void if the frame and/or fork is used in competition or stunt acts and in any way which is inconsistent with it's intended use.

Main Frame, Shockstay and Swing Arm - One (1) Year Warranty

Hydraulic Shocks - Six (6) Months Warranty

Pivot Pins and Bearings - Six (6) Months Warranty

Fork - Six (6) Months Warranty

Springs - Lifetime Warranty

All warranty claims must be sent with proof of purchase (copy of original invoice, date purchased and serial number*), freight prepaid, to AMP Research, Mongoose Service Dept., 1855 Laguna Canyon Road, Laguna Beach, CA 92651

* If the serial number does not appear on your paperwork, it can be found on the bottom bracket of the frame and on the steer clamp of your fork (i.e., CM- ###).

FIG #	PART #	DESCRIPTION	QTY
1	B0698	FRAME-SMALL 16"	1
1	B0699	FRAME-MEDIUM 18"	1
1	B0721	FRAME-LARGE 20"	1
2	B0684	SHOCKSTAY	1
3	B0689	SWINGARM	1
4	B0655	REAR SHOCK ASSY	1
5	B0692	SLEEVE	1
6	B2013	NYLON WASHER - SHOCK	2
7	B2021	SOCKET CAP SCREW	2
8	B2022	WASHER	1
9	B2014	BOLT	1
10	B2015	NUT	1
11	B2001	BEARING	2
12	B0776	AXEL	1
13	B2011	SOCKET CAP SCREW	2
14	B0653	BRAKE BOSS	2
15	B2004	BEARING	2
16	B2002	RETAINING RING	2
17	B2023	NYLON WASHER	4
18	B0685	PIVOT PIN	2
19	B2009	SEATCLAMP	1
	B2033	PIN & BUSHING KIT	

B2033 - CONSISTS OF

2 - B2001
1 - B0776
2 - B2001
2 - B2004
2 - B2002
4 - B2023
2 - B0685

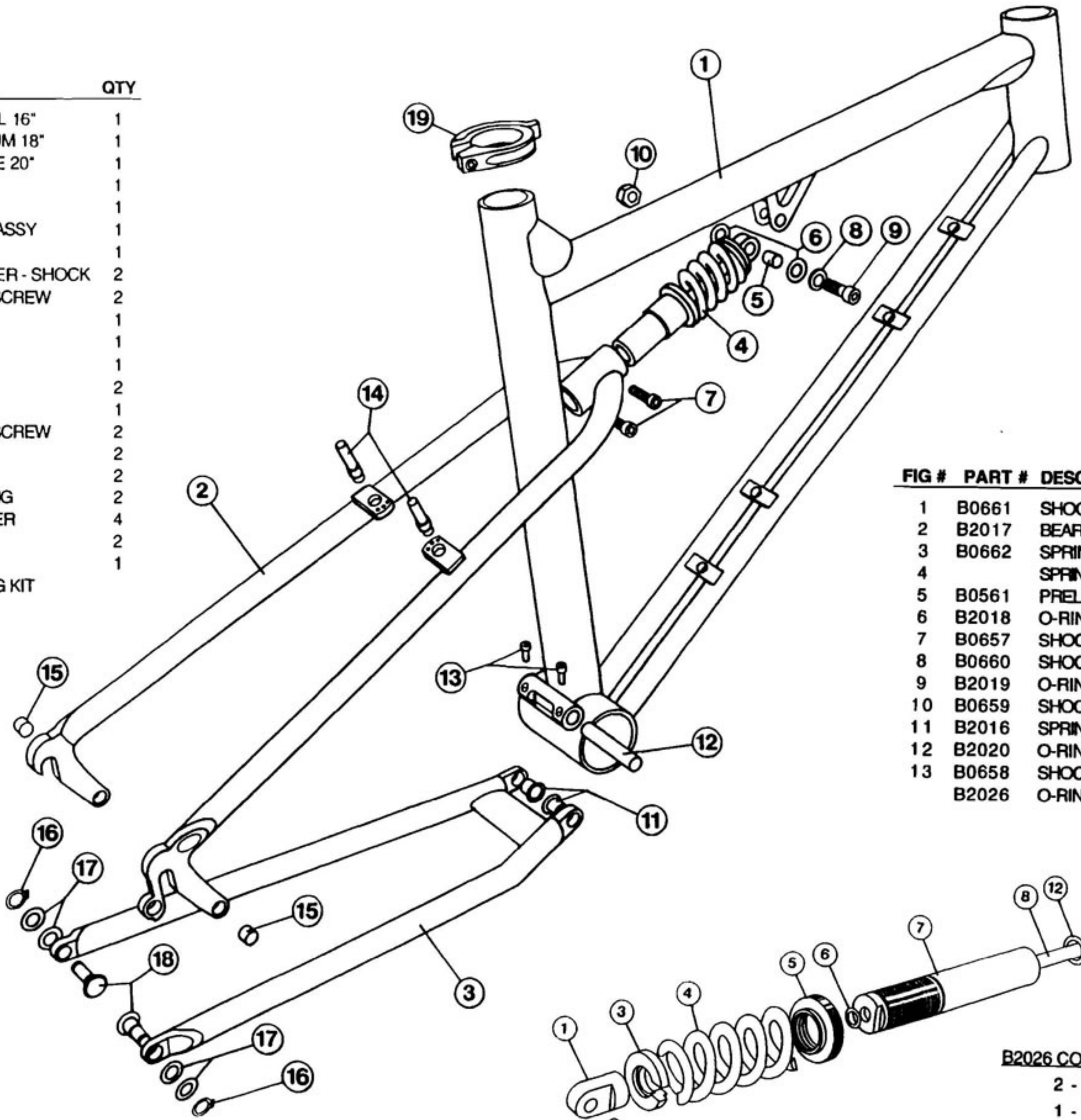


FIG #	PART #	DESCRIPTION	QT
1	B0661	SHOCK EYELET	1
2	B2017	BEARING	1
3	B0662	SPRING COLLAR	1
4		SPRING	1
5	B0561	PRELOAD ADJUSTER	1
6	B2018	O-RING (SHAFT)	2
7	B0657	SHOCK BODY	1
8	B0660	SHOCK SHAFT	1
9	B2019	O-RING (BODY)	1
10	B0659	SHOCK PISTON	1
11	B2016	SPRING PINS	1
12	B2020	O-RING (PISTON)	1
13	B0658	SHOCK ENDCAP	1
	B2026	O-RING SEAL KIT	

B2026 CONSISTS OF

2 - B2018
1 - B2019
1 - B2020

CHANGING THE SPRING

TOOLS REQUIRED

5mm Hex Wrench
10mm Wrench

1. Loosen shock bolt (#B2014) and remove.

2. Slide shock out of mounting tabs and check condition of nylon washers (#B2013), replace if worn.

3. Back off preload adjuster (#B0561) and remove spring collar (#B0662). Remove spring.

4. Install new spring. Reverse procedure for assembly.

5. Reset spring preload as described in the Owners Manual.
   CAUTION! Using excessive amounts of spring preload can cause the coils to bind which may result in frame damage.

CHANGING SHOCK OIL

TOOLS REQUIRED

5mm Hex Wrench
10mm Wrench
4mm Hex Wrench
5/16" x 3" Pin (a 5/16" shouldered bolt will work)
Vise
Automatic Transmission Fluid (Dexron or Mercon)

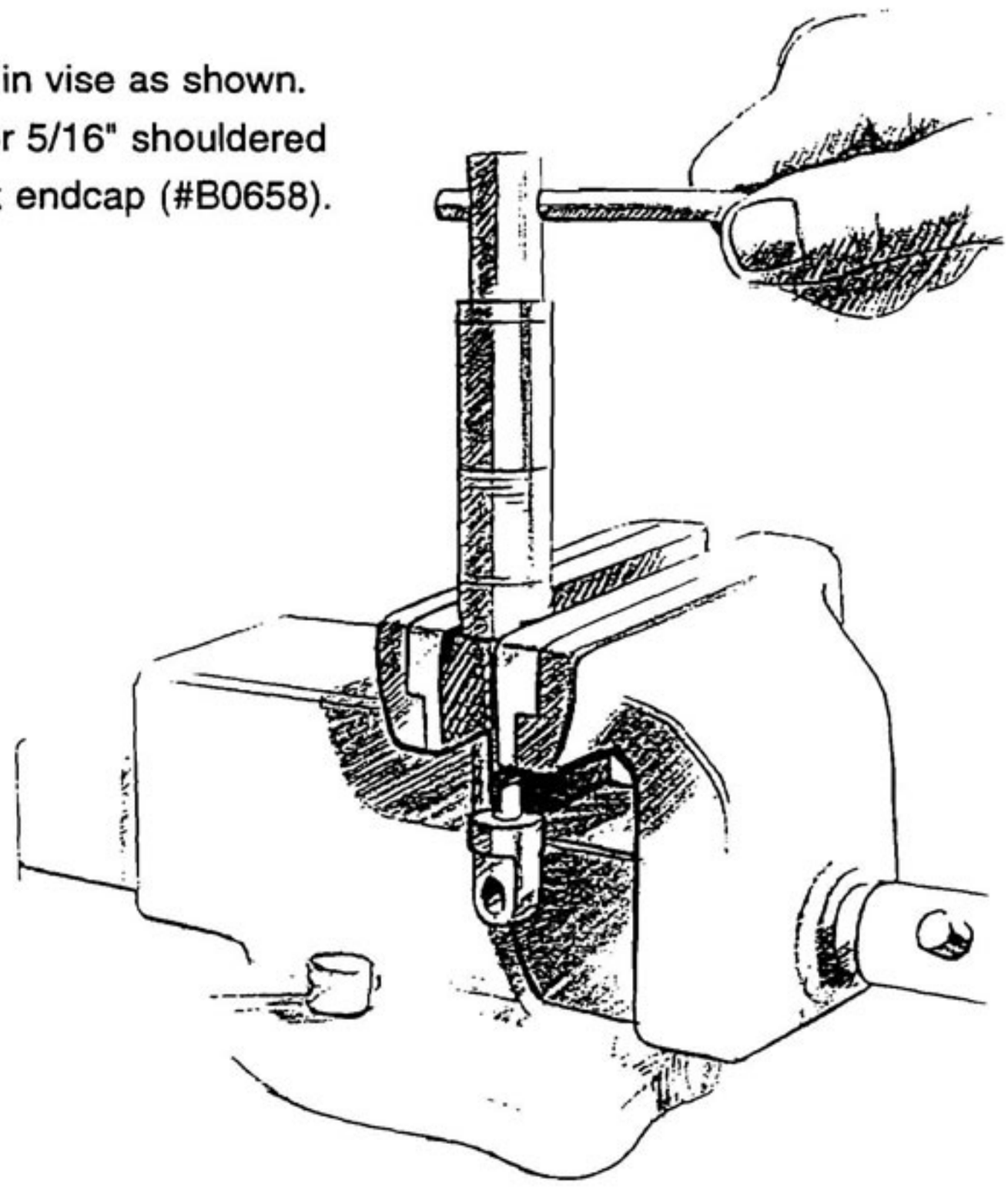
1. Loosen shock bolt (#B2014) and remove.

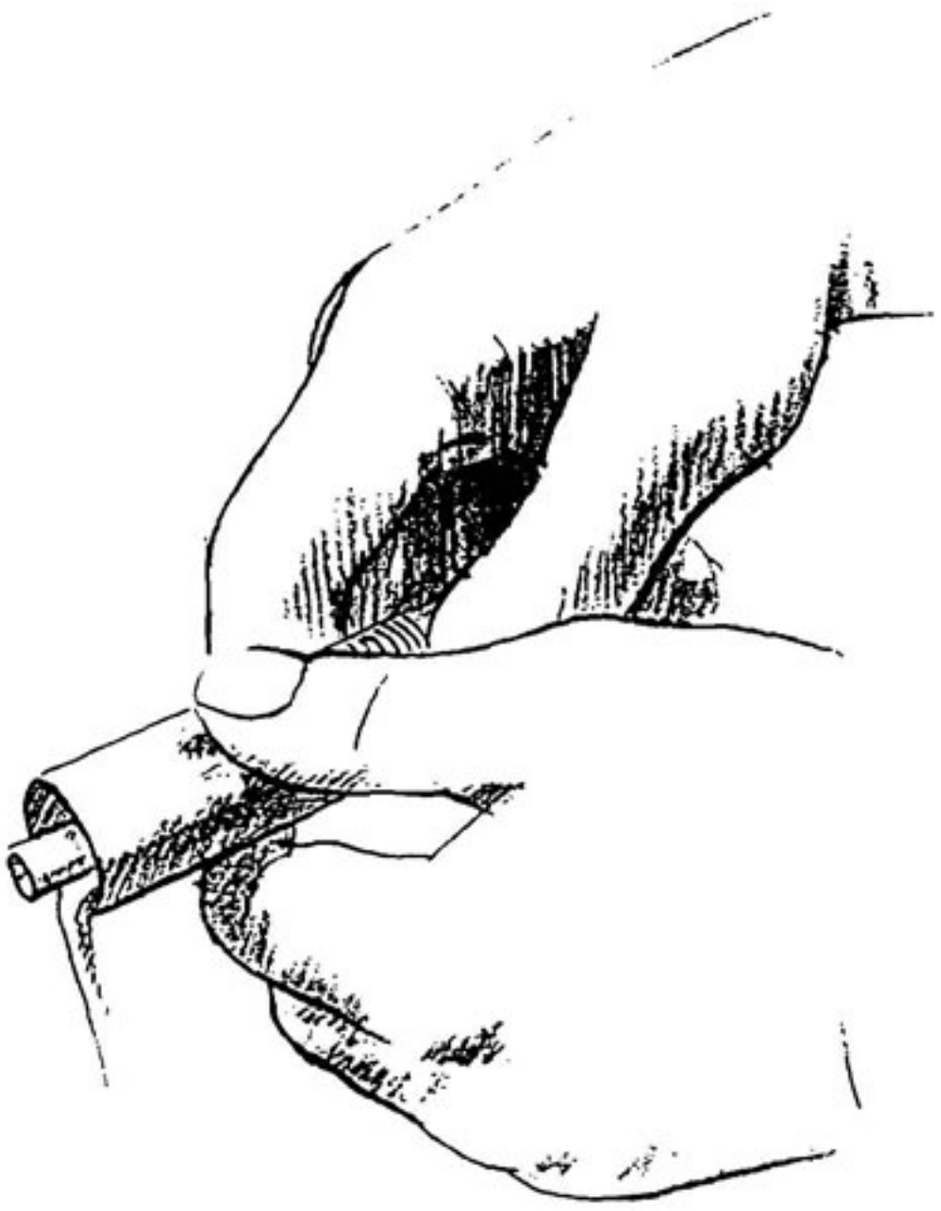
2. Slide shock out of mounting tabs and check condition of nylon washers (#B2013), replace if worn.

3. Back off preload adjuster (#B0561) and remove spring collar (#B0662). Remove spring and preload adjuster.

4. Remove socket cap screws (#B2021) and remove shock from shockstay.

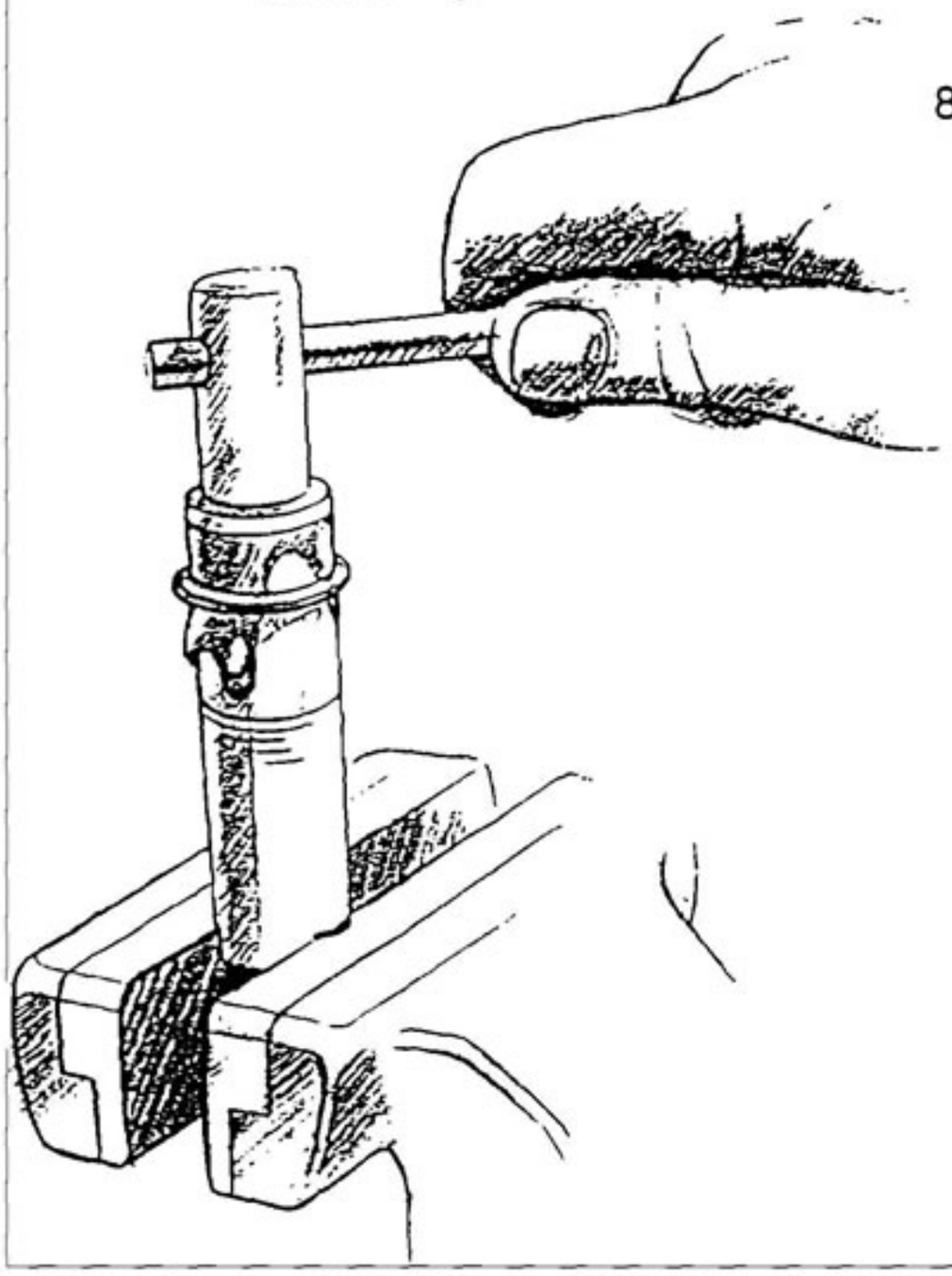
5. Clamp shock body in vise as shown. Using a 5/16" pin or 5/16" shouldered bolt unscrew shock endcap (#B0658).





6. Remove shock from vise and drain oil. Clean the inside of the shock body by filling with Automatic Transmission Fluid and pushing the shaft in and out several times. Drain oil again. Repeat process until inside of shock is clean. **CAUTION!** Do not use solvent since it will damage the seals.

7. Clamp shock body in vise and fill with Automatic Transmission Fluid. Very slowly push shaft up and down to eliminate any trapped air. Add oil if necessary.



8. Carefully remove the o-ring from endcap and screw endcap onto shock body. Slide the o-ring over the endcap and onto the shock body. 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 body 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.

9. Install preload adjuster, spring, and spring collar. Clamp shock in shockstay. Attach shock eyelet to frame making sure that the sleeve (#B0692) and nylon washers are in there proper position and that all bolts are secure.

10. Reset spring preload as described in the owners manual.
CAUTION! Using excessive amounts of spring preload can cause the coils to bind which may result in frame damage.

NOTE: The rear shock may make a slight "squishing" noise when operating. If the noise becomes excessive or you notice a reduction in damping there may be too much air in the shock. Remove the shock and shock endcap as described in this manual. Add oil and repeat step #8.

REPLACING SHOCK SEALS

TOOLS REQUIRED

5mm and 4mm Hex Wrench
10mm Wrench
5/16" x 3" Pin (a 5/16" shouldered bolt will work)
3/8" x 3" Pin (a 3/8" shouldered bolt will work)
Vise
Shock Clamp Tool (#760)
Seal Kit (#B2026)
Automatic Transmission Fluid (Dexron or Mercon)

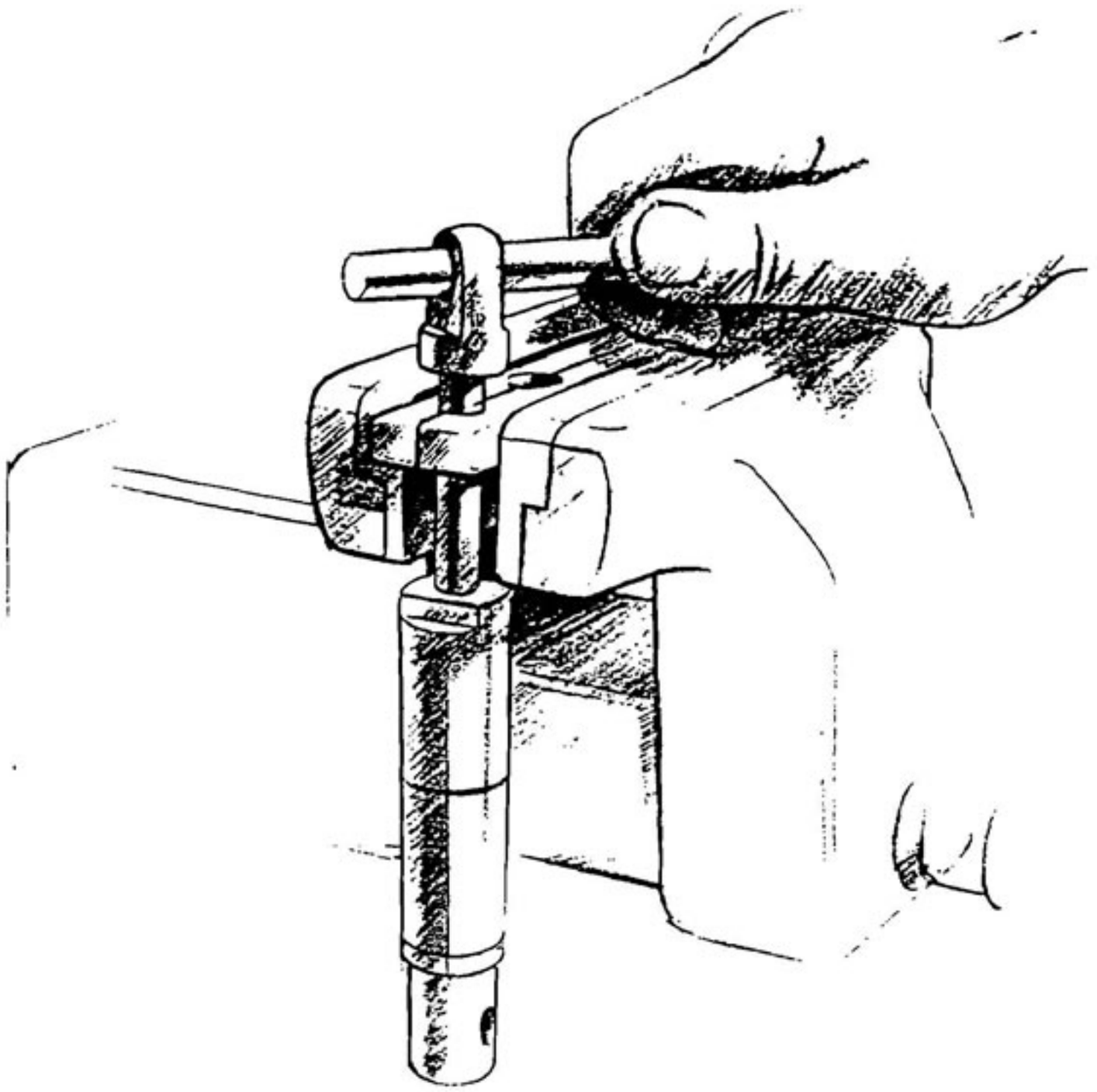
1. Loosen shock bolt (#B2014) and remove.

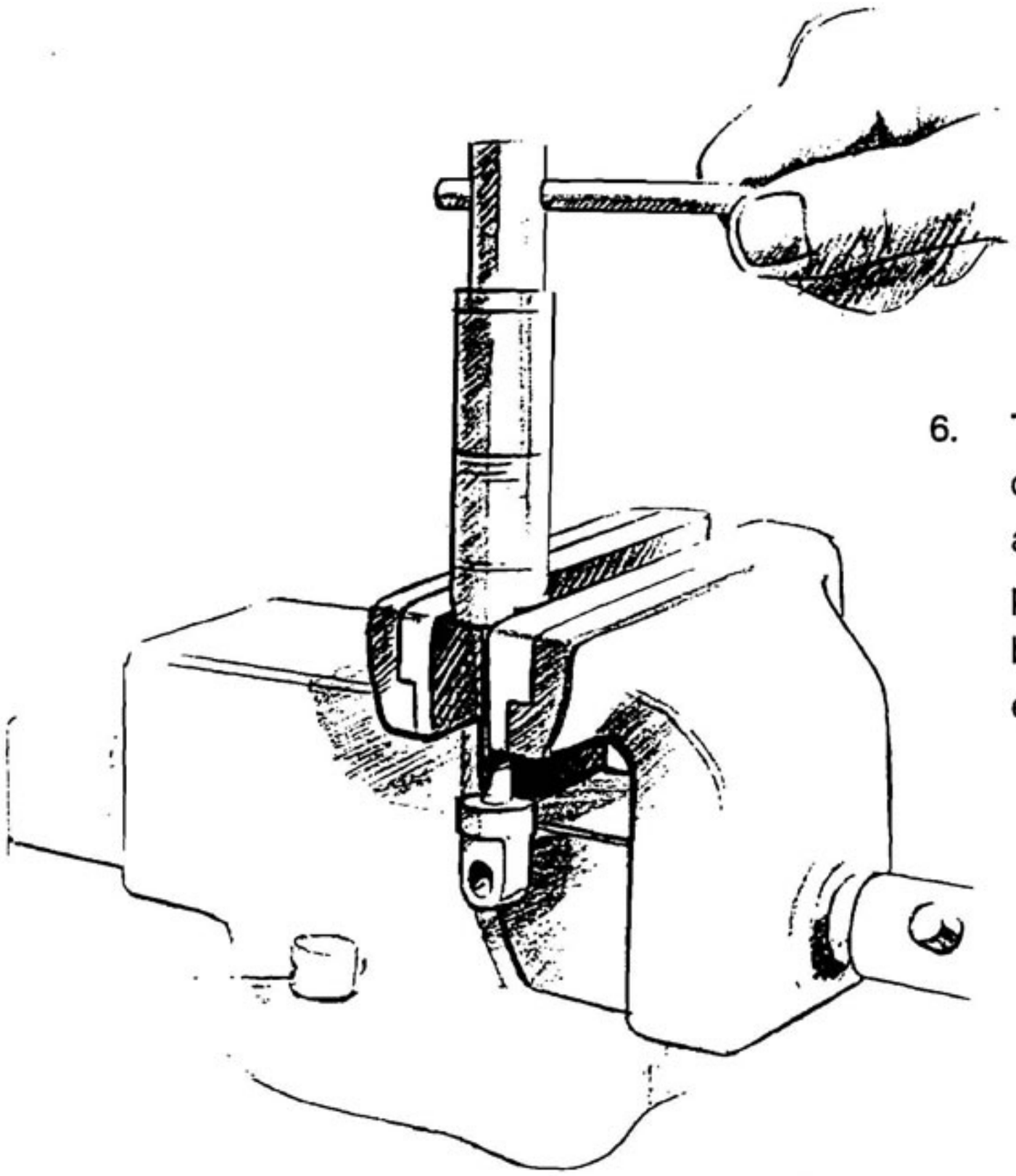
2. Slide shock out of mounting tabs and check condition of nylon washers (#B2013), replace if worn.

3. Back off preload adjuster (#B0561) and remove spring collar (#B0662). Remove spring and preload adjuster.

4. Remove socket cap screws (#B2021) and remove shock from shock stay.

5. Clamp shock shaft (#B0660) in appropriate hole in shock tool (#B760) and using 3/8" pin or 3/8" shouldered bolt unscrew shock eyelet (B#0661).





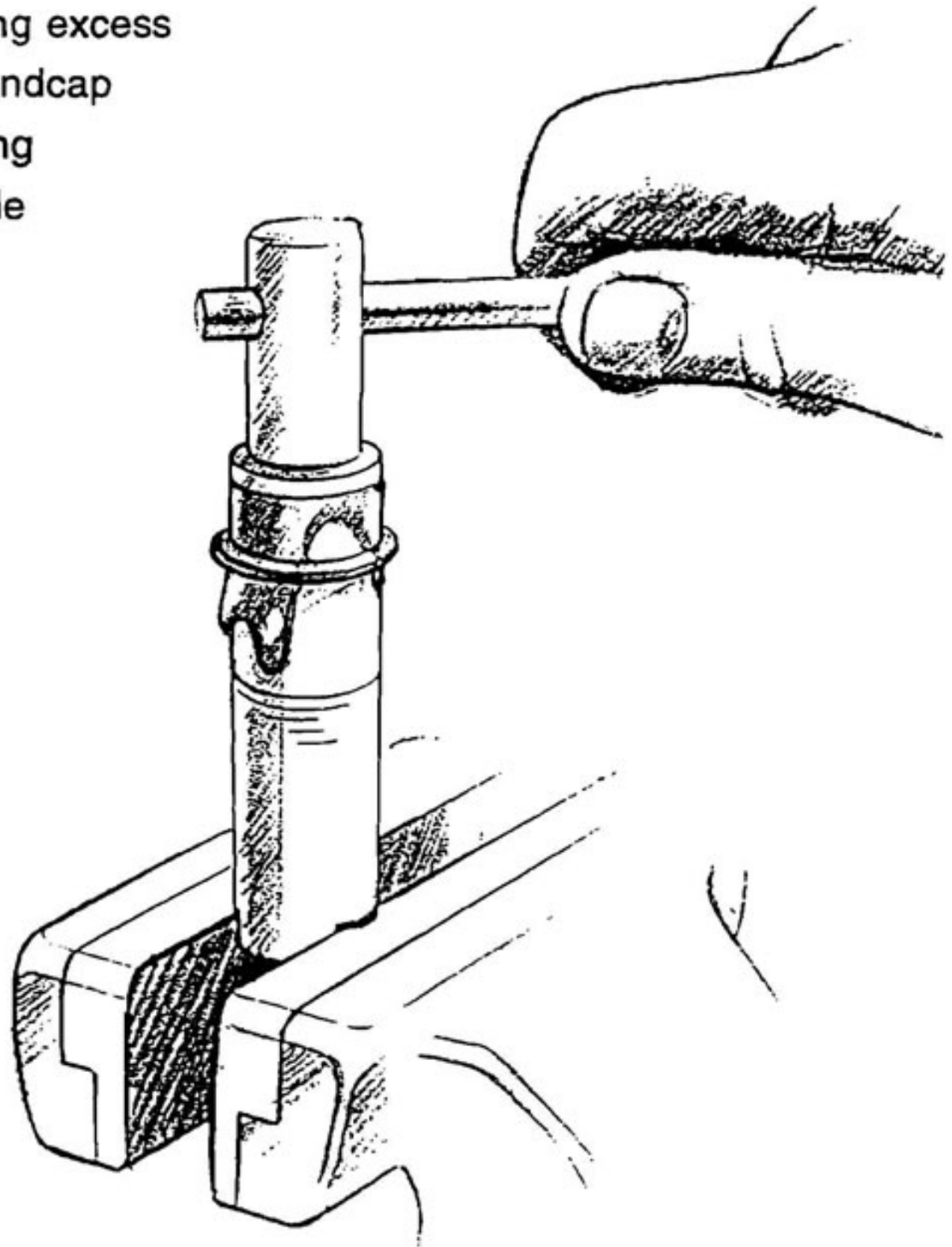
6. Turn shock over and clamp shock body in vise as shown. Using a 5/16" pin or 5/16" shouldered bolt unscrew shock endcap (#B0658).

7. Pull out shaft and piston assembly (#B2035) and allow oil to drain. Remove o-ring from the piston and Tetraseals from the shock body and endcap using a dull scribe needle (straightened paper clip works well). 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.

8. Slide shaft and piston into shock body. Clamp shaft in tool and install shock eyelet.

9. Turn shock over and clamp shock body in vise. Fill with Automatic Transmission Fluid. Very slowly push shock shaft up and down to eliminate any trapped air. Add oil if necessary.

10. 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 body. 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 body 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 end-cap does not close completely, loosen and tighten several times to let out excess fluid.



11. Install preload adjuster, spring, and spring collar. Clamp shock in shock stay. Attach shock eyelet to frame making sure that the sleeve (#B0692) and nylon washers are in there proper position and that all bolts are secure.

12. Reset spring preload as described in the Owners Manual.
CAUTION! Using excessive amounts of spring preload can cause the coils to bind which may result in frame damage.

NOTE: The rear shock may make a slight "squishing" noise when operating. If the noise becomes excessive or you notice a reduction in damping there may be too much air in the shock. Remove the shock and shock endcap as described in this manual. Add oil and repeat step #8.

8/31/93

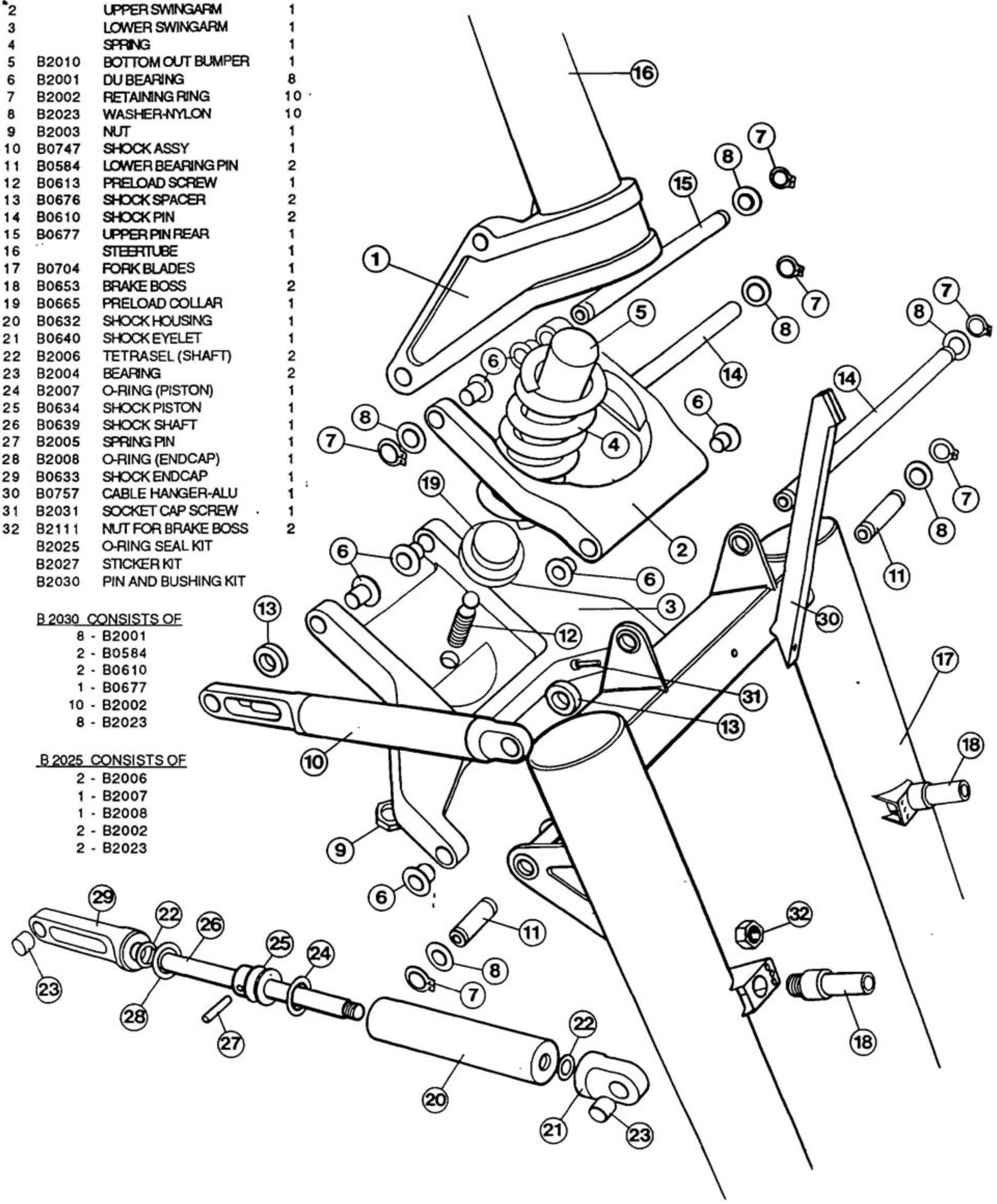
FIG #	PART #	DESCRIPTION	QTY
1		STEERING CLAMP	1
2		UPPER SWINGARM	1
3		LOWER SWINGARM	1
4		SPRING	1
5	B2010	BOTTOM OUT BUMPER	1
6	B2001	DU BEARING	8
7	B2002	RETAINING RING	10
8	B2023	WASHER-NYLON	10
9	B2003	NUT	1
10	B0747	SHOCK ASSY	1
11	B0584	LOWER BEARING PIN	2
12	B0613	PRELOAD SCREW	1
13	B0676	SHOCK SPACER	2
14	B0610	SHOCK PIN	2
15	B0677	UPPER PIN REAR	1
16		STEERTUBE	1
17	B0704	FORK BLADES	1
18	B0653	BRAKE BOSS	2
19	B0665	PRELOAD COLLAR	1
20	B0632	SHOCK HOUSING	1
21	B0640	SHOCK EYELET	1
22	B2006	TETRASEL (SHAFT)	2
23	B2004	BEARING	2
24	B2007	O-RING (PISTON)	1
25	B0634	SHOCK PISTON	1
26	B0639	SHOCK SHAFT	1
27	B2005	SPRING PIN	1
28	B2008	O-RING (ENDCAP)	1
29	B0633	SHOCK ENDCAP	1
30	B0757	CABLE HANGER-ALU	1
31	B2031	SOCKET CAP SCREW	1
32	B2111	NUT FOR BRAKE BOSS	2
	B2025	O-RING SEAL KIT	
	B2027	STICKER KIT	
	B2030	PIN AND BUSHING KIT	

B 2030 CONSISTS OF

- 8 - B2001
- 2 - B0584
- 2 - B0610
- 1 - B0677
- 10 - B2002
- 8 - B2023

B 2025 CONSISTS OF

- 2 - B2006
- 1 - B2007
- 1 - B2008
- 2 - B2002
- 2 - B2023



CHANGING THE SPRING

TOOLS REQUIRED

Circlip Pliers
13mm Wrench
Flat Screw Driver

1. Remove shock from fork by removing circlips and nylon washers and sliding shock from shafts.

2. Loosen the jam nut (#B2003) and back the preload screw (#B0613) all the way out. Extend fork all the way and remove spring (#BF1060), elastomer insert (#B2010) and preload collar (#B0665).

3. Put some high-quality grease on the preload collar where it contacts the ball end of the preload adjuster.

4. Make sure bottoming-out elastomer bumper is inside the spring when reinstalling. Make sure spring is seated properly and compress fork to hold spring in place.

5. Mount shock back on fork using new circlips.

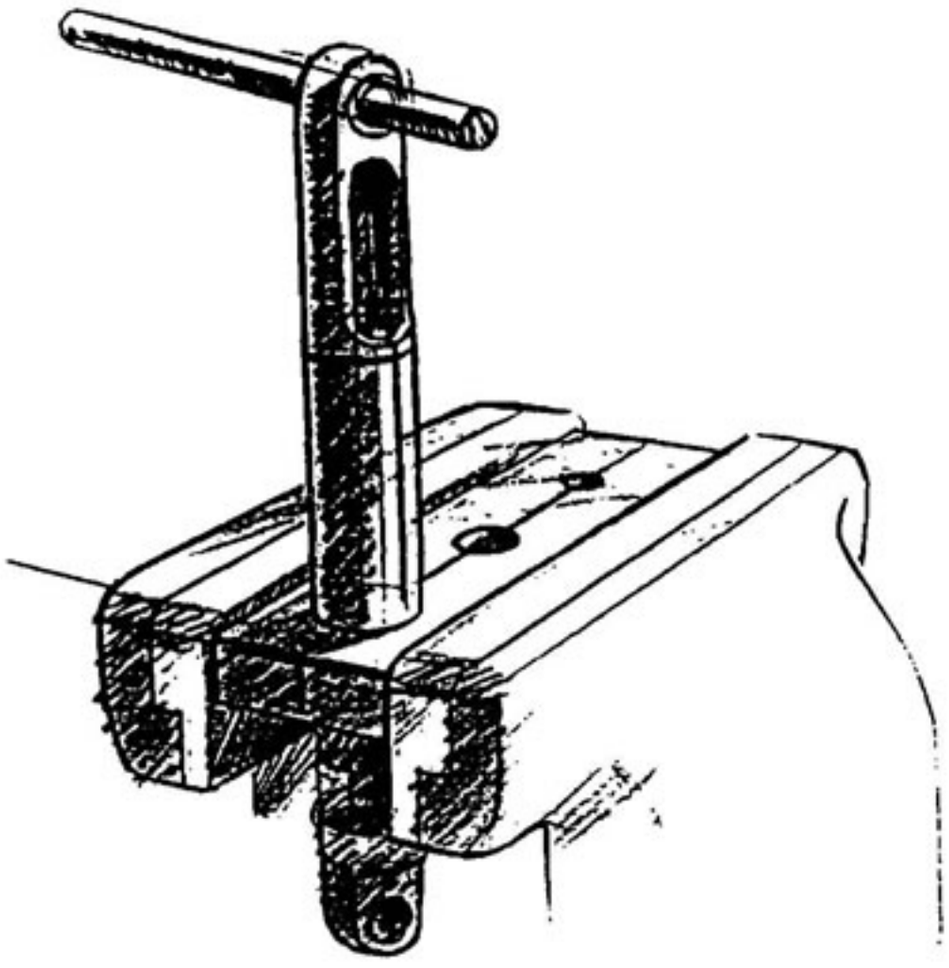
6. Re-set spring preload as described in owners manual.

CHANGING SHOCK OIL

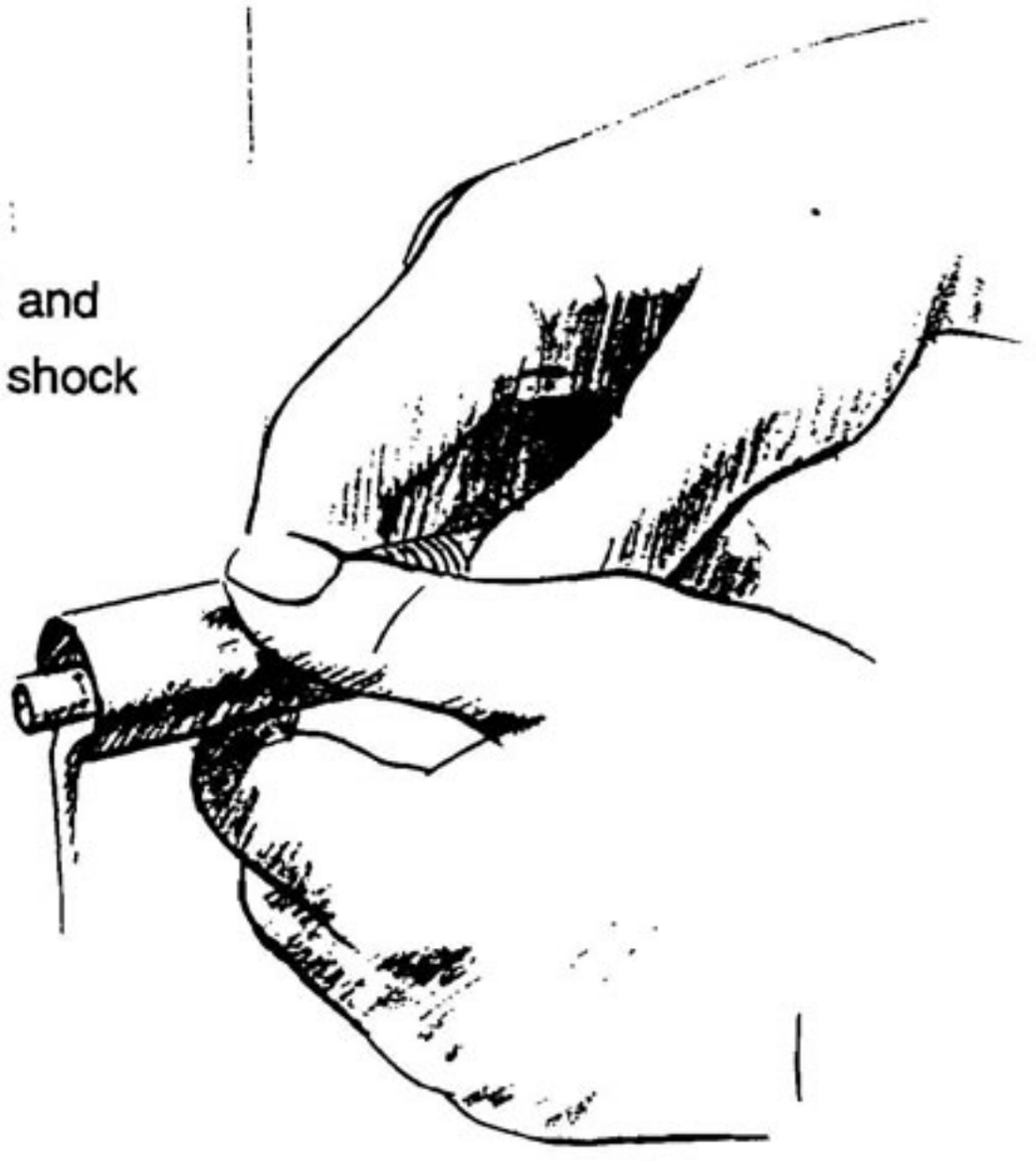
TOOLS REQUIRED

Circlip Pliers
5/16" x 3" Pin (a 5/16" or 8mm bolt will work)
Vise
Shock Clamp Tool (#760)
Automatic Transmission Fluid (Dexron or Mercon)

1. Remove shock from fork by removing circlips and nylon washers and sliding shock from shafts.

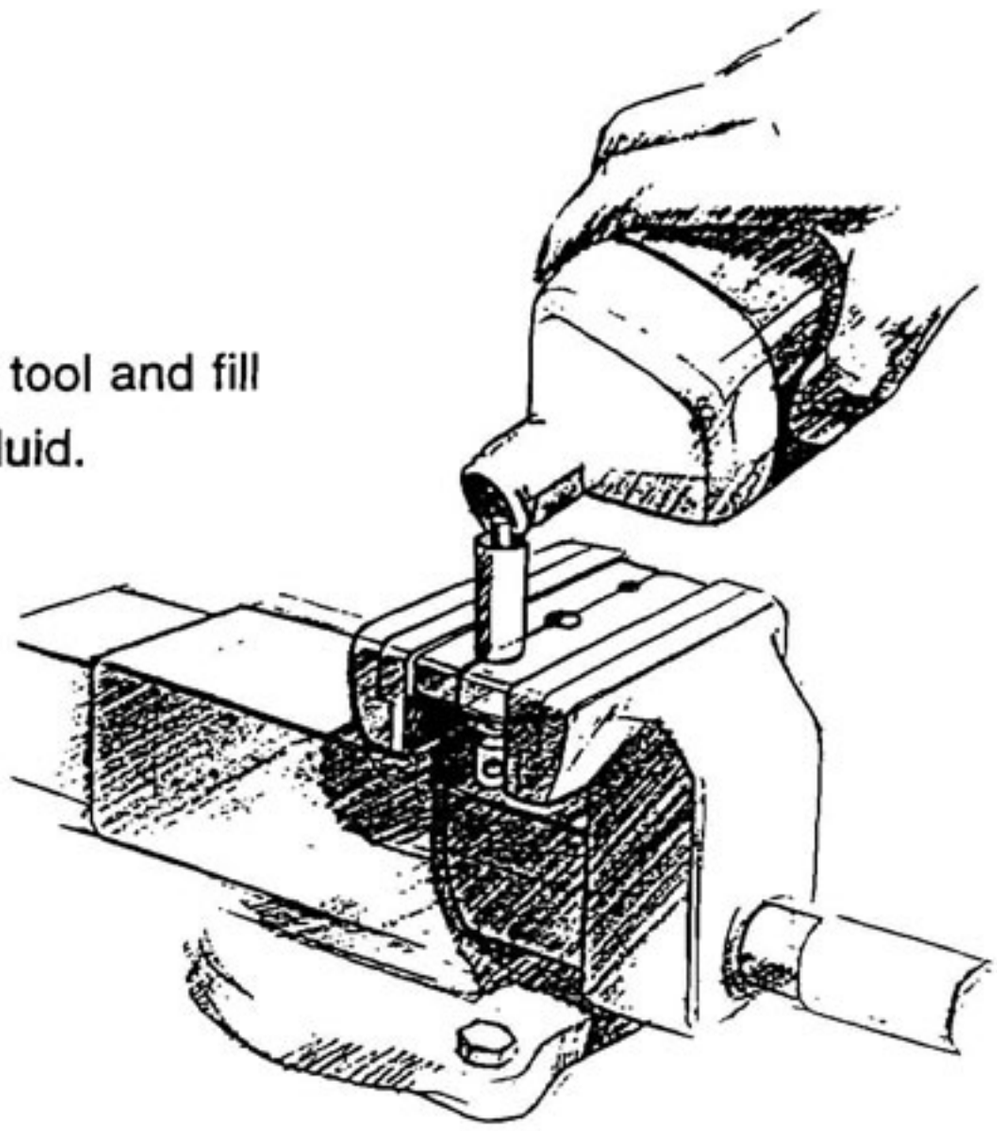


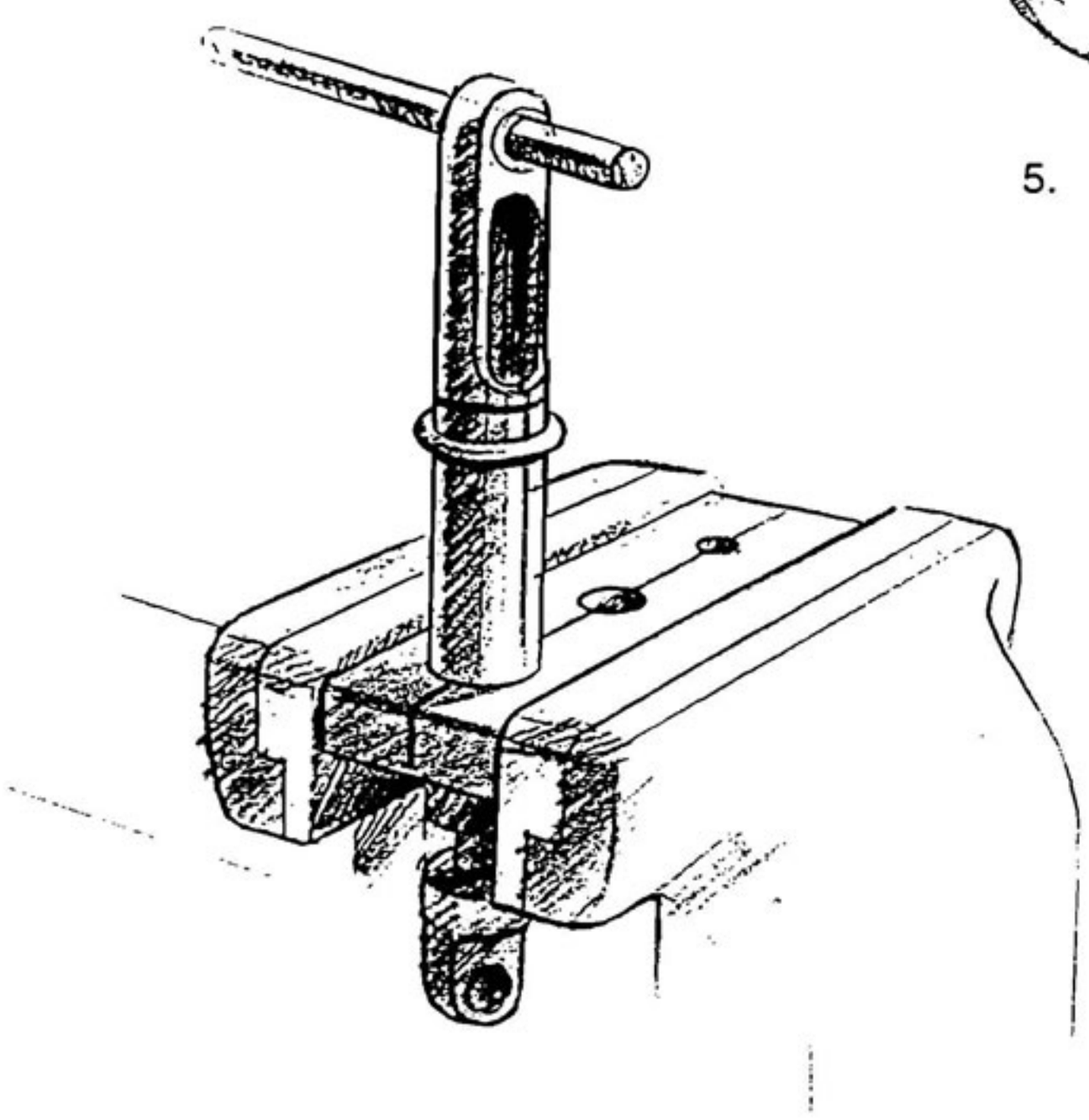
2. Clamp shock housing (#B0632) in center hole of Shock Clamp Tool (#760). Unscrew end cap (#B0633) using a 5/16" x 3" pin.



3. Remove shock housing from tool and drain oil. Clean the inside of the shock housing by refilling with Automatic Transmission Fluid and pushing the shaft in and out several times. Drain oil again. Repeat process until inside of shock is clean.
CAUTION: Do not use solvent since it will damage the seals.

4. Lightly clamp shock housing in tool and fill with Automatic Transmission Fluid. Very slowly push shaft up and down to eliminate any trapped air. Add oil if necessary.





5. Carefully remove the o-ring from end cap and screw end cap onto housing. Slide the o-ring over the end cap and onto the shock housing. Slowly tighten the end cap letting excess fluid escape. Loosen end cap partially so that the o-ring groove is exposed. Slide the o-ring up the shock housing until it snaps into place on the end cap. Re-tighten end cap. **CAUTION:** Do not overtighten end cap. Use light pressure (slightly more than finger tight).

NOTE: If the end cap does not close completely loosen and re-tighten several times to let out excess fluid.

6. Mount shock back on fork using new circlips.

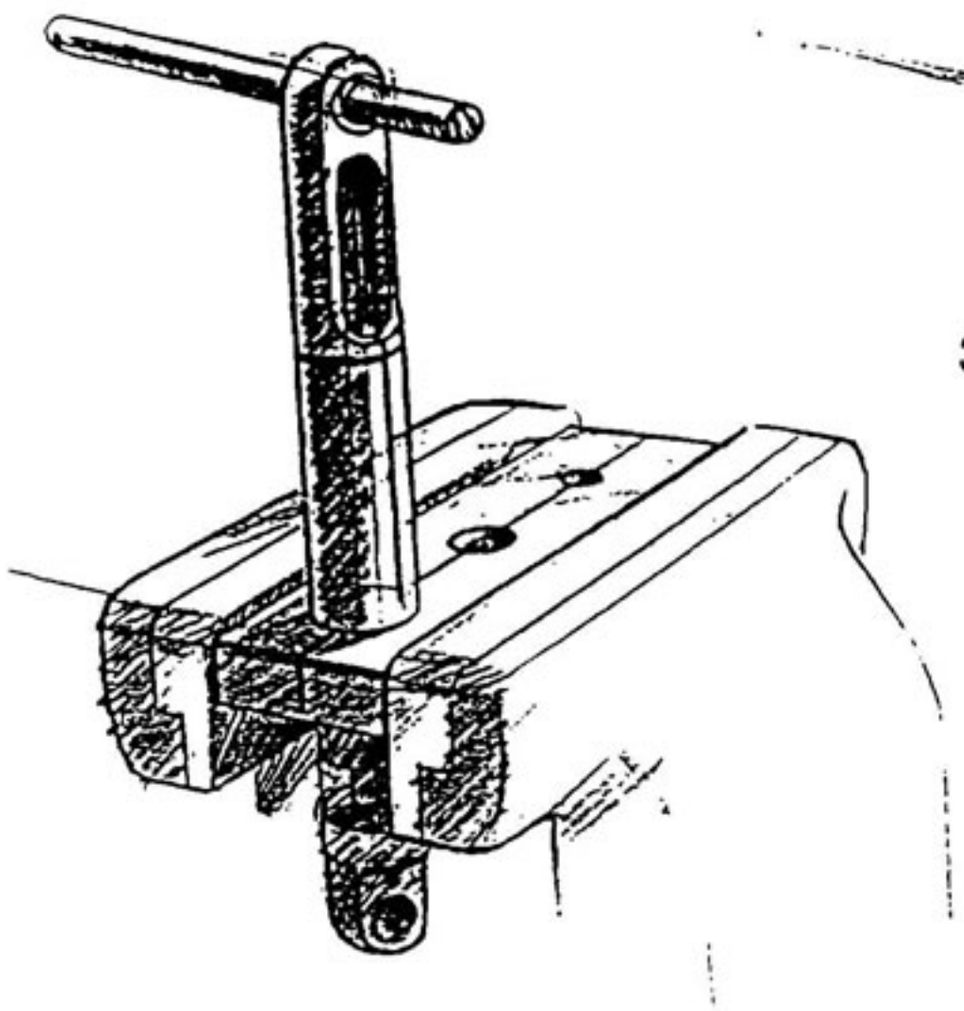
REPLACING SHOCK SEALS

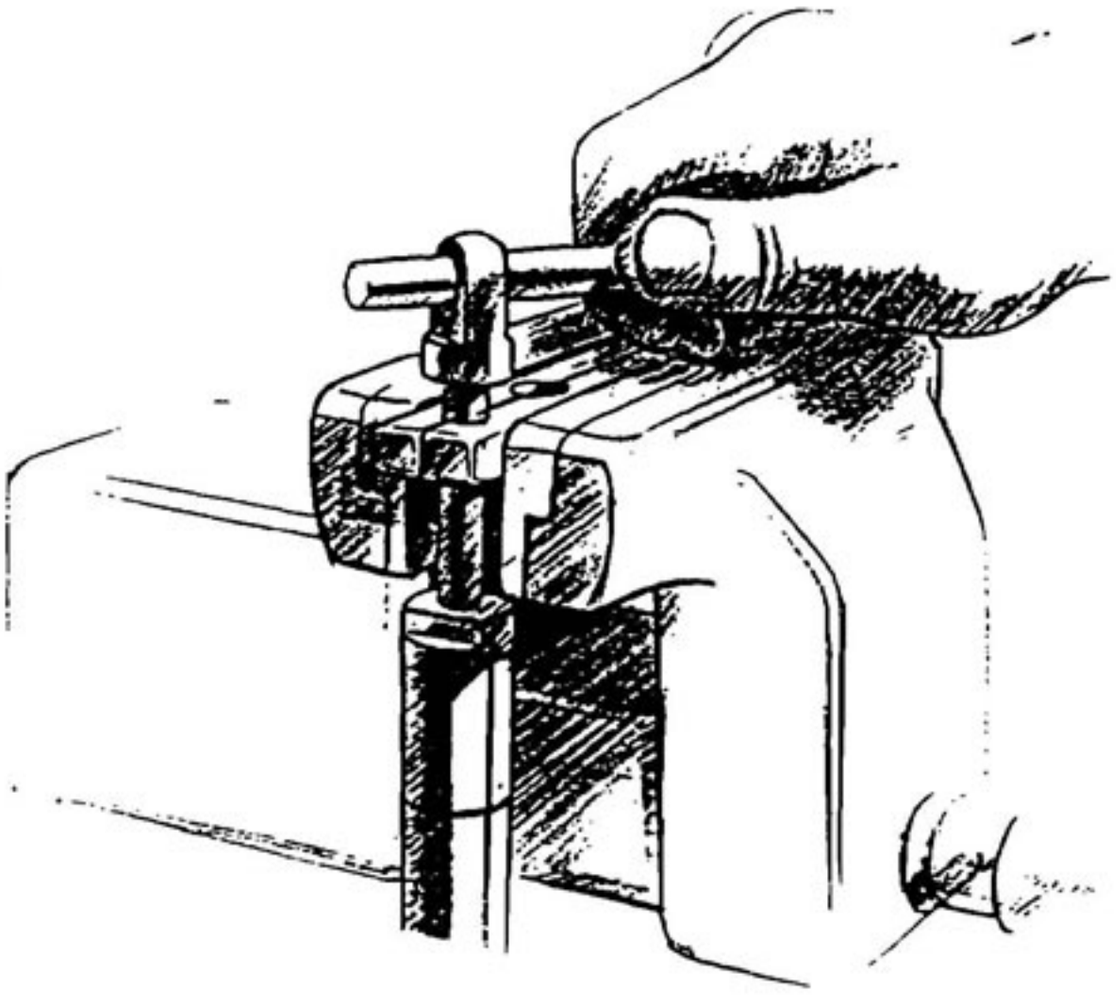
TOOLS REQUIRED

Circlip Pliers
5/16" x 3" Pin (a 5/16" or 8mm bolt will work)
Vise
Shock Clamp Tool (#760)
Automatic Transmission Fluid (Dexron or Mercon)
Seal kit - Part #B2025

1. Remove shock from fork by removing circlips and nylon washers and sliding shock from shafts.

2. Fully extend shock and clamp shaft (#B0639) in appropriate hole in Shock Clamp Tool (#760). Unscrew shock eyelet (#B0640) using a 5/16" x 3" pin.

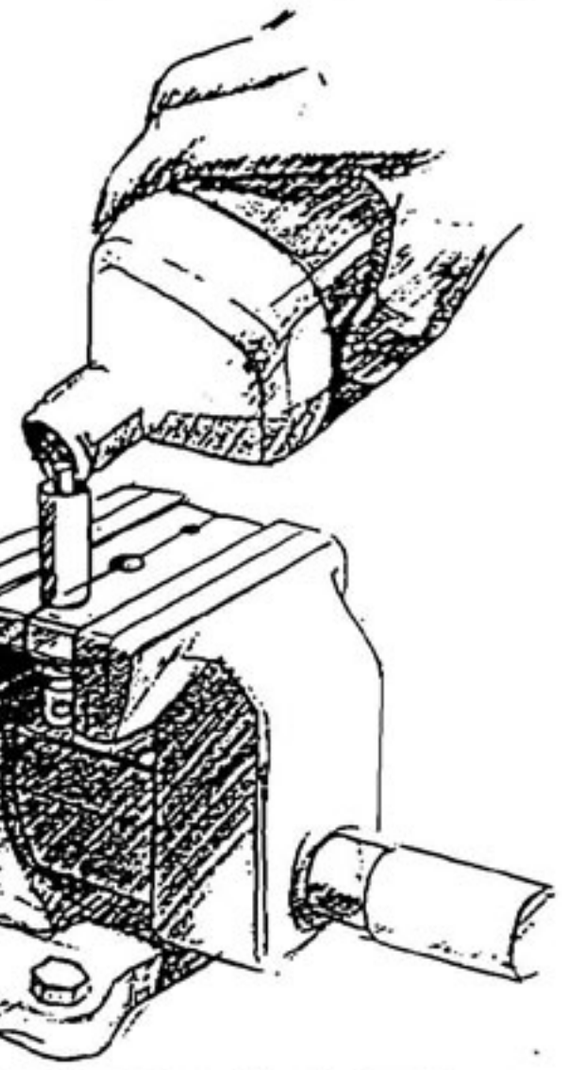




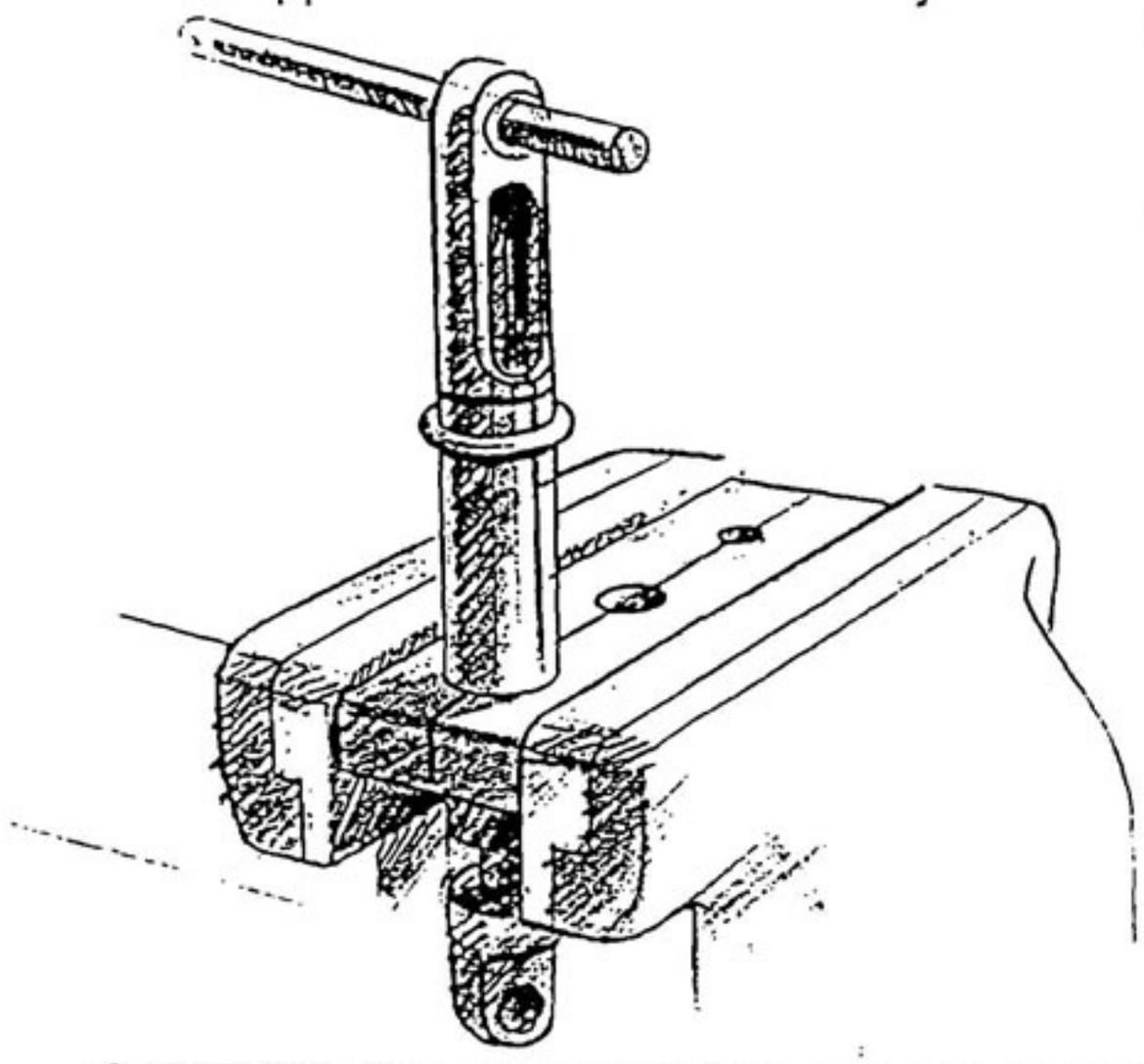
3. Turn shock over and clamp shock housing (#B0632) in center hole of tool. Unscrew end cap (#B0633) using a 5/16" x 3" pin and remove o-ring.

4. Pull out shaft and piston (#B0634) and allow oil to drain. Remove o-ring from the piston and Tetraseals from the shock housing and end cap using a dull scribe needle (straigtend paper clip works well). 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 housing and end cap are fully seated by sliding shaft through holes.

5. Slide shaft and piston into housing. Clamp shaft in tool and reinstall shock eyelet.



6. Turn shock over and lightly clamp shock housing in tool. Fill with Automatic Transmission Fluid. Very slowly push shock up and down to eliminate any trapped air. Add oil if necessary.



7. Screw end cap onto housing. Slide new o-ring for end cap over the end cap and onto the shock housing. Slowly tighten the end cap letting excess fluid escape. Loosen end cap partially so that the o-ring groove is exposed. Slide the o-ring up the shock housing until it snaps into place on the end cap. Re-tighten end cap.

CAUTION: Do not overtighten end cap. Use light pressure (slightly more than finger tight).
NOTE: If the end cap does not close completely loosen and re-tighten several times to let out excess fluid.