



5. Insert the oval protrusions on the back of the brake brace into the oval holes in the boots. Align the holes in the brake brace with the threaded holes in the lower legs.
6. Replace the brake brace bolts. Use a torque wrench and tighten the bolts evenly to 80 in/lbs. Check the drop out alignment with drop out alignment tools.
7. Install zip ties in the grooves of the boots and replace the boot clips where the brace goes through the boots
8. Make sure the top out bumper is attached to the plunger. Using a long 4mm allen wrench install the plunger inside the slider leg through the bottom, lightly tighten.
9. Lightly grease the threads on the caps and re-install the cap/skewer/spring assemblies.
10. Check the tightness of the steerer tube bolt. Re-torque to 35 ft/lbs. if necessary.
11. Re-install the fork as previously described under "Installation".

WARRANTY REGISTRATION CARD

Name _____
Address _____
City/State/Zip _____
Phone () _____ Fax () _____
Date purchased _____ Serial # _____ Age _____
Where did you buy your Halson fork? Dealer/On Bike/Mail order/Other _____
Why did you buy your Halson fork?(circle all that apply)
Recommended/Price/Quality/Color/Salesman/Advertising/Other _____
How did you first here of Halson Designs, Inc.? _____
Expected weekly use of your Halson fork _____
What type of rider are you?(circle) Recreational/Advanced/Competitor
What kind of bike do you ride? _____

IMPORTANT:

Registration protects you in establishing warranty claims and enables us to keep you advised of updates regarding your Halson product.

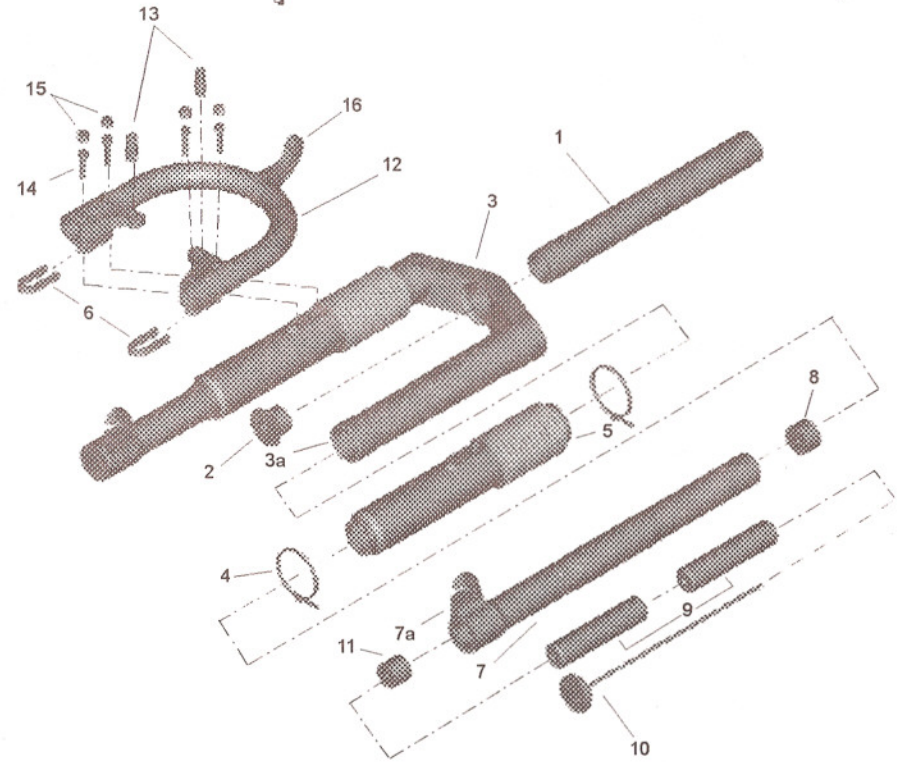
OWNERS MANUAL



Halson Designs, Inc.
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1-800-6-HALSON

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Exploded view



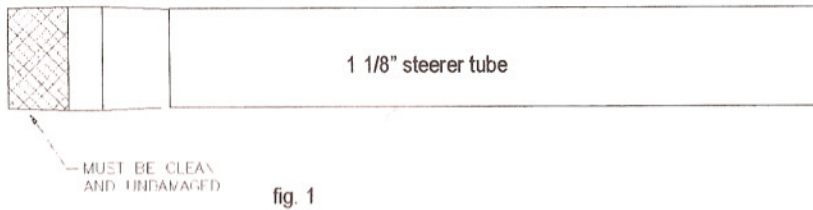
- | | |
|----------------------|----------------------------|
| 1-Steerer Tube | 8-Brain assembly |
| 2-Steerer tube bolt | 9-MCU elastomer |
| 3-Crown assembly | 10-Skewer cap/ skewers |
| 3a-Stanchion tube | 11-Plunger |
| 4-Zip tie | 12-Brake brace assembly |
| 5-Boot | 13-Brake boss |
| 6-Boot clip | 14-Brake brace bolt |
| 7-Lower leg assembly | 15-Brace bolt hole grommet |
| 7a-Drop out | 16-Cable hanger (optional) |

WARNING: It is extremely important that your "Inversion PDS" fork is installed correctly by a qualified technician with proper tools according to these instructions. Improperly installed forks are extremely dangerous and can result in severe injuries.

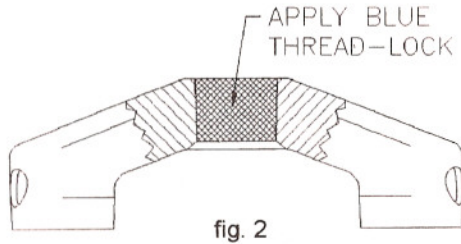
NOTE: The bearings and seals are set up tight initially. There will be a breakin period for these to loosen up.

A.) Installing the steerer into the crown:

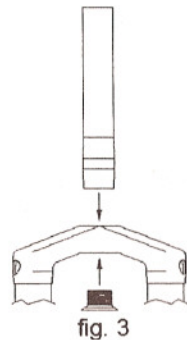
1. Clean the tapered bore in the crown assembly and clean the tapered end of the steerer tube. (Fig. 1)



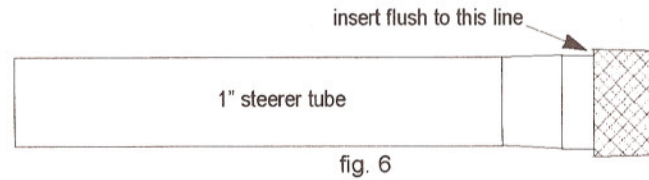
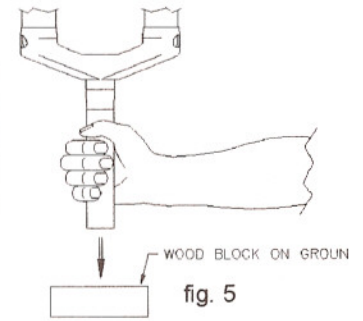
2. Apply a thin, but complete coating of Loctite 242 (blue) or equivalent to the tapered bore in the crown. (Fig. 2)



3. Insert the tapered end of the steerer tube into the tapered bore in the crown (Fig. 3). Coat the threads and the tapered flange of the steerer tube bolt with a thin film of grease. (Fig. 4) Thread the bolt in **all the way, finger tight.** (Fig. 3)



4. Hold the fork upside-down by the steerer tube and pound it sharply several times against a flat piece of wood on the ground. This will seat the steerer tube into the fork crown. Take care not to damage the end of the steerer tube. (Fig. 5)



5. When installing a 1" steerer tube make sure the top of the taper is flush with the top of the crown (Fig. 6).
6. Use a torque wrench with a 10mm allen wrench and tighten the steerer tube bolt to 35 ft/lbs. After initial ride recheck torque of steerer tube bolt. Check the tightness of the bolt during each maintenance.

NOTE: The interchangeable steerer tube system should only be used occasionally, such as when you buy a new frame that requires a different steerer tube size. The system is not meant for more frequent use such as removing the fork for routine maintenance while leaving the steerer tube in the bike.

B.) Removing the steerer tube:

1. Remove the fork from the bike.
2. Use a 10mm allen wrench and remove the steerer tube bolt.

- Support the fork upside down by the crown on blocks of wood or another material that won't scratch, gouge, or dent the crown. Fit the steerer tube removal tool (Halsong part No.3200) into the crown against the bottom of the steerer tube. Prepare to catch the steerer tube so that it doesn't fall and get damaged. Hit the steerer tube removal tool sharply with a hammer until the steerer tube pops out. (Fig. 7)

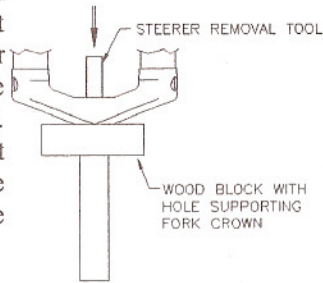


fig. 7

C.) Installing the fork into the bike:

- Remove the existing fork and lower headset race and cut the "Inversion PDS" steerer tube to length using the original fork for measurement. (Cut the steerer only after it has been installed into the fork as described in sec. A above.)
- Install the headset race firmly against the top of the fork crown. Install the fork assembly on the bike. If you are using a threaded steerer tube, make sure that there are sufficient threads to properly lock the headset in place. Adjust the headset so that no play or drag is felt.
- Route the brake cable and housing so that the housing goes directly from the brake lever to the recessed hole in the top of the "Inversion PDS" cable hanger. Make sure that the brake cable housing has sufficient slack and clearance to allow for 2.5" of suspension travel. It may be necessary to install a whole new cable. Do not route the brake cable and housing through the stem or any other mounts or cable stops.
- Install the brakes according to manufacturers instructions and adjust brake pads properly. Make sure that there is at least 3/8" clearance between the top of the cross over cable hanger and the bottom of the brake cable hanger when the brakes are on. (Fig. 8) (Some brakes don't require the use of the cable hanger.)

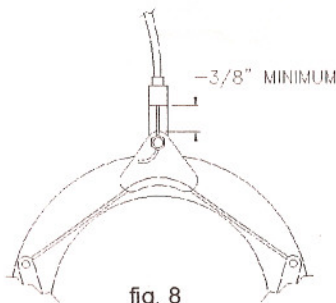


fig. 8

- Install the front wheel with the tire mounted and inflated. Remove the cap/skewer/spring assemblies as described under "Tuning". Collapse the fork all the way.

a.) Check that there is at least 1/8" clearance between the tire and the bottom of the crown. If there is not enough clearance, you will have to use a smaller tire. (Fig. 9)

b.) Make sure that the brake cable hanger doesn't hit the head tube or the head set.

c.) Turn the handle bars all the way to the left and to the right. Make sure that the brake cable hanger cannot contact the frame of the bike.

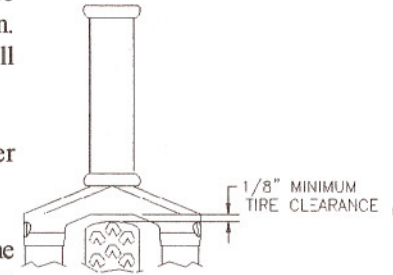


fig. 9

WARNING: Test the brakes on your bike prior to each ride and after any crash. If the brake cable hanger has been damaged, it could fail and cause loss of the front brake resulting in a severe crash. If you have any doubt about the performance of your brakes, don't ride the bike! Contact Halsong for inspection.

2. Tuning

Tuning the spring rate:

There are a total of four microcellular urethane (MCU) springs in the fork - two 4" springs in each leg. The spring rate of the fork is adjusted by substituting springs of different densities. The MCU springs are available in seven densities; Pink, White, Yellow, Blue, Red, Green and Black. (Softest to Firmest)

To access the springs, use your fingers and unscrew the large threaded caps located at the bottom of each drop out. Take out the caps/skewers/springs together and then slide the springs off the end of the skewer.

Usually it is best to set the fork up so that it compresses 3/8" to 1/2" when the rider sits on the bike. (This is called sag.) Choose a new setting of springs from the chart below and reinstall the cap/skewer/springs. Repeat until you have the desired ride.

>>POLYMER DENSITIES SOFT TO HARD>>

>>POLYMER SETTINGS FROM HARD TO SOFT>>

	PINK	WHITE	YELLOW	BLUE	RED	GREEN	BLACK
1	4						
2	3	1					
3	2	2					
4	1	3					
5		4					
6		3	1				
7		2	2				
8		1	3				
9			4				
10			3	1			
11			2	2			
12			1	3			
13				4			
14				3	1		
15				2	2		
16				1	3		
17					4		
18					3	1	
19					2	2	
20					1	3	
21						4	
22						3	1
23						2	2
24						1	3
25							4

Use only the combinations above.

NOTE: When re-installing the cap/skewer/spring assemblies, the fork will need to be fully extended. You will have to push the cap and slightly compress the springs in order to engage the threads. Always tighten the caps firmly (all the way) with your fingers.

NOTE: When using combinations 3, 7, 11, 15, 19, or 23, use one of each color in each leg. (For example; in combination # 7, put 1 yellow and 1 blue on each skewer, do not put 2 yellows on one skewer and two blues on the other.)

3. Maintenance

"Inversion PDS" should be cleaned and regreased any time you think it is dirty inside or after each 50 hours of use (several times a year). In extremely dusty conditions inspect fork more often.

NOTE: Halson recommends that you have your dealer perform the required maintenance according to these instructions.

A.) Disassembly

1. Remove "Inversion PDS" from the bike and place it on a work bench.
2. Remove the cap/skewer/spring assemblies.
3. Use a 4mm allen wrench and remove the four brake brace bolts. (Two next to each brake boss) Depending on the type of brakes you use, they might need to be removed to gain access to the four brake brace bolts.
4. There are boot clips that seal the boots to the brace. Remove the brace and recover the boot clips.
5. Use a long 4mm allen wrench to remove the plunger from inside each leg. The top out bumper (small rubber ring) is attached to the top of the plunger.
6. Carefully clip the zip ties off of the boots.
7. Pull both lower leg assemblies out and slide the boots off.
8. There is a valve body (brain) at the top of each lower leg. The bottom out bumper (small rubber ring) is attached to the top of the brain. The brain contains a push rod seal in the center and a bore seal around the outside. Remove the bottom out bumper and take out the four screws which hold the seal retainer plate. Clean all the pieces and re-assemble the brain. There are six small holes in the retainer plate, four for the screws and two for breathing. Make sure the breathing holes line up with the breathing holes of the brain. Put one drop of Tri-flo or similar lubricant on the push rod seal.

If it becomes necessary to remove the brain, insert a long dowel through the drop out and push the brain out from below. Re-install the brain by pushing it into the top of the lower leg. If necessary, a few drops of a quick dry adhesive may be used.



9. Wash the boots thoroughly with soap and water. Dry thoroughly.
10. Clean the lower leg assemblies by wiping them and using solvent if necessary. As the fork works, it breathes through vent holes at the bottom of each drop out. Dust can accumulate inside the lower legs near the vent holes. Clean this area and the dropout threads. Regrease the dropout threads. The upper bearings are bonded to the top of each lower leg. Make sure to clean them without damaging them. Dry thoroughly.
11. Clean the top half of the fork. Use a soft (non-metallic) round scrub brush or old toothbrush and solvent to clean inside the stanchion tubes. The lower bearings are bonded inside the end of the stanchion tubes. Make sure to clean them without damaging them. Dry thoroughly.
12. Remove the MCU springs from the skewers. Clean the springs and skewers. Apply a thin coat of fresh grease to the skewers and put the MCU springs back on.

B.) Inspection:

- a.) The crown assembly: Check the joint between the crown and stanchion tubes. If any movement or looseness is detected, contact your dealer or Halsong before any further riding!
- b.) The boots: Make sure they don't have any cuts or tears and that they are soft and pliable. If either boot is damaged have it replaced immediately. Failure to replace damaged boots will allow contaminants inside and cause premature wear of the bearing surfaces.
- c.) The lower leg assemblies: Inspect for a smooth finish and that the drop outs are securely bonded to the legs. If any looseness or movement is detected, contact your dealer or Halsong before any further riding.
- d.) The brace assembly: Check to make sure the machined lugs are firmly bonded to the tubular section. If your fork uses the optional brake cable hanger, make sure that it is attached securely. If any looseness or movement is detected, contact your dealer or Halsong before any further riding.

NOTE: In case of a suspected defect or failure, or for service not described above, contact Halsong at:

1-800-6-H-A-L-S-O-N
(1-800-642-5766)



C.) Assembly

1. Put a thin layer of oil such as Finish Line on the stanchion tube. Slide the entire boot (pleated end first) onto the stanchion tube. It will be difficult to get the lower end over the end of the stanchion tube, but it aides in further assembly.
2. Identify the Right and Left lower legs. The flange of the drop outs must point forward and be offset toward the inside. One at a time, insert the lower tubes into the stanchion tubes until the tops of them are even with the tops of the slots. (Be aware that the push rod must engage the brain to do this. Take care not to damage the rod seal.) Put a bead of Tetra Lube on the bearing at the top of each lower tube. (Insert grease through the oval opening in the boot and the slot in the stanchion tube, and rotate the lower tubes.) Put another bead of grease around each lower tube where it enters the upper tube.
3. Slowly rotate the lower tubes in one direction, while slowly pushing them all the way into the upper tube. Take care not to damage the teflon brain seal on the slot. Move the lower tubes in and out several times while twisting them around to work the grease in.
4. Slide the lower end of the boot off of the stanchion and onto the slider.

Place
stamp
here

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