2005 Stance Service Manual

Rev NC

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INTRODUCTION

This manual is intended to guide the user through basic service of Manitou Stance front forks. Service is supported by the identification of common parts and assemblies that have been assembled into Service Kits. The purpose of this manual will be to describe conditions that may drive the need for service and to provide installation instructions for the kits.

Due to the time-consuming nature of suspension fork service, at this time our primary focus is to offer service kits that minimize the amount of downtime and labor involved.

Important information is highlighted in this manual by the following notations:

WARNING
Failure to follow WARNING instructions could result in severe injury or death to the person inspecting or repairing the suspension fork or the user.

CAUTION
A CAUTION a caution indicates special precautions that must be taken to avoid damage to the product.

NOTE
A NOTE provides key information to make procedures easier or clearer

GENERAL WARNING: Suspension forks by design contain gases and fluids under extreme pressure and warnings contained in this manual must be observed to reduce the possibility of injury or possible death. Following these instructions can help you reduce the risk of being injured. Any questions in regards to the information in this manual should be directed to Answer Products Customer Service at (661) 257-4411.

WARNING: The Stance uses compressed air to provide fluid pressure in the damping system and spring resistance in Air models. BOTH systems must be relieved of pressure prior to servicing these systems. Failure to relieve air pressure could result in injury or possible death.

CAUTION: The Stance suspension fork uses precision machined aluminum and other soft alloy components. Using correct tools for assembly is essential to prevent damage.

FRONT SUSPENSION TERMINOLOGY

Air Cap – Top cap that threads into top of air/spring leg (this is the left leg of the fork as you are seated on the seat). Forks may be controlled with an air/spring or a coil spring. The air cap contains the Schrader Valve, which is used to control the spring rate or SAG of air forks.

Air Spring – A mechanism that is used to control the SAG of an air fork.

Arch – A support that connects the two outer lower legs of the casting so as to keep them moving in unison.

Black Nitrate Leg Coating – New coating for steel stanchion legs that reduces stiction.

Boss – The word used to describe an outer casting that has brake posts for V-brakes or cantilever brakes.

Bottom Out Bumper – A rubber or elastomer device that absorbs the shock that occurs when a suspension is compression to its limit.

Bushings – A cylindrical sleeve between a fork stanchion tube (inner leg) and a fork outer casting (slider), which facilitates the sliding movement between these two parts.

Coil Spring Air Assist – A new feature for 2005 that utilizes a full length coil spring and allows you to increase the spring rate of the fork by adding air as a booster to that coil spring.

Coil Spring – A coiled piece of metal that acts as a spring to help suspend a fork.

Compression – The phase of the suspension operation in which the wheel travels up, or travels closer to the frame. The suspension forks reaction to a bump in the trail.

Compression Damping – Restriction of the rate that the suspension compresses under load.

Convertible Travel – A system used to alter the travel of a suspension fork. It requires moving a travel clip on the compression rod to a different position. This operation is accomplished by disassembling the fork and physically moving the travel clip on the compression rod.

Crown Steerer Assembly – the stanchion legs (inner legs), the fork crown, and the steer tube pressed together as one assembly. This assembly is then finished by adding all of the fork internals and then outer casting (slider).

Damping – A function that modifies the rate of suspension compression or rebound.

Detent – An indentation that causes a rotating adjuster to stop at fixed increments.

Drop Out – The end of an outer casting (slider) where the wheel attaches.

Dust Boot – Usually a piece of rubber in the shape of a cylinder with baffles to allow it to compress as the fork compresses through its travel. Its function is to help keep dirt and water from getting into the inner legs of the fork.

FFD – Fluid Flow Damping. A Manitou patented low cost oil damping system. The compression damping is non-adjustable and the rebound damping may be non-adjustable or adjustable damping.

Fork Crown – The component that joins the stanchion tubes (inner legs) to the steer tube of the fork.

FRONT SUSPENSION TERMINOLOGY (CONT.)

Hydraulic Fork Oil – Oil used in suspension designs to provide damping. It has special characteristics that determine how it reacts when exposed to compressed air, how it changes viscosity when its temperature changes, and how it moves through valves.

Hydraulic Lock Out – a condition caused when the mixture of air and damping oil is out of balance. It is caused when there is too little air space in a chamber, not allowing the fork to compress through its travel.

Infinite Travel System (IT) – A handle-bar mounted air travel adjust system that allows the rider to change the fork travel (and ride height) without a spring rate change. The travel can be changed from full compression to full rebound and at any place in between.

Lock Out – a special function that restricts the compression of the fork from moving. It is generally controlled by an external knob that is activated when a rider does not want the fork to move, thus eliminating extra energy needed to overcome the bobbing forces of the fork.

MCU – (Micro-Cellular Urethane) Special urethane that is filled with tiny air cells that act like springs when the elastomer is compressed.

Micro Lube – Lubrication system that is operated by injecting small quantities of grease directly into ports that are inserted into outer casting legs. This enables the lubrication of the fork without having to disassemble it.

No Boss - The word used to describe an outer casting that has no brake posts for V-brakes or cantilever brakes. This casting is to be used for disk brakes only.

Oil Damping – A system that uses the resistance to oil flow through holes in a valve to provide a means to alter the rate of suspension compression or rebound.

Oil Level – The level of damping oil needed for the optimal damping performance of a suspension. It is measured as the air space distance between the top of the stanchion leg (inner leg) and the height of the oil inside of the leg. The fork must be completely extended in order to get an accurate measurement.

O-Ring – A soft, flexible neoprene or Buna rubber ring with a round cross-section, which is used for sealing and retention.

Oil Weight – A description of the relative viscosity of oil, such as hydraulic oil. Oil with low weight numbers (5wt or 7wt) flows through the valving with less resistance than higher weight numbers (10or 15 wt).

One Point Five Standard - 1.5 inch interface standard for frame head tubes, headset, cups, stem, and steer tubes which allows for the lightest weight and strongest design in 170mm single crown forks. This design greatly improves the control and steering precision of the fork. It is used predominately on forks with longer travel and the intended use is for more hardcore, extreme riding.

Outer Casting – (see Slider)

Preload – A condition of compressing a spring or elastomer before the operating loads are put on the suspension, so that it provides a stiffer spring rate.

FRONT SUSPENSION TERMINOLOGY (CONT.)

Piston – In front suspension, the part of the damper that slides back and forth inside of the damping leg that houses the valves. It can also refer to the air piston in the air/spring assembly that slides back and forth compressing the air, thus causing a change in the spring rate of the suspension.

Porosity – The condition or property of having pores in a material that will allow gas or liquid to pass through it.

Platform Plus Damping – A new damping system found on 2005 Rear shocks (featured on Metel and Radium's). This system will establish a pedaling efficiency platform similar to SPV, but is done through unique valving that is not adjustable (helps in bump control).

Rapid Travel II, Wind Down – Systems that are used to control the travel of suspension forks. Also known as RTII, and WD. RTII is used for the specific purposes of controlling the travel in two conditions: climbing and descending. WD is an incremental travel adjustment between to set limits and does not affect the spring rate of the fork as severely as RTII.

Quad Ring seal – New seal that replaces standard o-rings in designs that require more efficient air and oil sealing methods.

Rebound – The phase of the suspension operation in which the wheel returns to its original position on the ground after compression.

Rebound Damping – Restriction of the rate that the suspension rebounds when the compression load is relived.

Remote Lock out system – A handle-bar lever actuated system that controls the lock out function on front and rear suspension products.

Reverse Arch Technology – Also known as RA. It is a system that is designed to move the arch of a fork to the backside of a fork, rather than the conventional front position. It was designed to provide greater rotational torque strength to an outer casting (slider), without adding additional weight to the fork.

SAG – The amount a suspension fork compresses at rest with a normal load (rider's weight).

Schrader Valve – Valve used to introduce air into a chamber.

Seal – A part, usually neoprene rubber or Buna, that keeps contaminants out and/or working fluids in.

Semi Bath – A lubrication system that uses a lubricating oil to keep the bushing surface and stanchion legs (inner legs) as friction free as possible during movement of the stanchion legs.

Spring Rate – The rate at which the resistance of a spring increases as it is compressed.

SPV – (Stable Platform Valve) new damping system that allows the rider to set the pedaling platform that he desires to pedal most efficiently in all situations. It is dependent on the pressure that the SPV valve experiences from the movement of the wheel vs. the terrain and the platform that is set by pressure introduced to other side of the SPV valve through changes of air pressure working on the damping oil.

SPV Evolve – The latest version of SPV damping technology that has increased its performance with modifications to the original design.

FRONT SUSPENSION TERMINOLOGY (CONT.)

Slider/Outer Casting – The tube (outer casting leg) of the suspension fork that0. remains fixed to the wheel. It slides up and down on the stanchion leg (inner leg).

Stanchion Clamps - (Double-Triple Clamps) the portions of the fork crown that clamp around the stanchion legs above and below the head tube of the bicycle frame on specific long travel applications.

Stanchion Legs – The suspension tube (inner leg) fixed to the fork crown. It remains stationary during the operation of the suspension.

Steer Tube – The long cylindrical tube that extends from the top of the fork crown. Its function is to be inserted into the bicycle head tube and attach the suspension to the bicycle frame.

Thru Axle – (Hex-lock) A device used for mounting a thru axle hub to special outer legs that are not made for standard quick release hubs. Manitou's Hex-lock (thru axle) system is a special patented system utilizing a hex shaped end that increases the stiffness of the fork and reduces slippage in the joint between the axle clamps and the axle.

Top Out Bumper – A rubber, coil spring, or elastomer device that absorbs the shock that occurs when the load is taken off a suspension so that it is allowed to rebound to its limits

TPC – (Twin Piston Chamber) a patented damping system that has independent pistons for rebound and compression. The system utilizes a mixture of air and oil in the damping leg of the fork to enhance the damping performance.

TPC+ - A variation of TPC that has added a floating piston to the compression damper to enhance the performance of the compression damping under the load of bigger hits.

Travel – The amount that a wheel moves between the most compressed and the most extended states of the suspension

Viscosity – A description of how a liquid flows. Liquids with higher viscosity are thicker flow less easily or quickly than liquids with low viscosity. This has an affect on the damping speeds of rebound and compression.

Volume Control – A new system designed to work with SPV as a control of the compression ramp up rate of the fork. It has a range of adjustments from linear to very progressive.

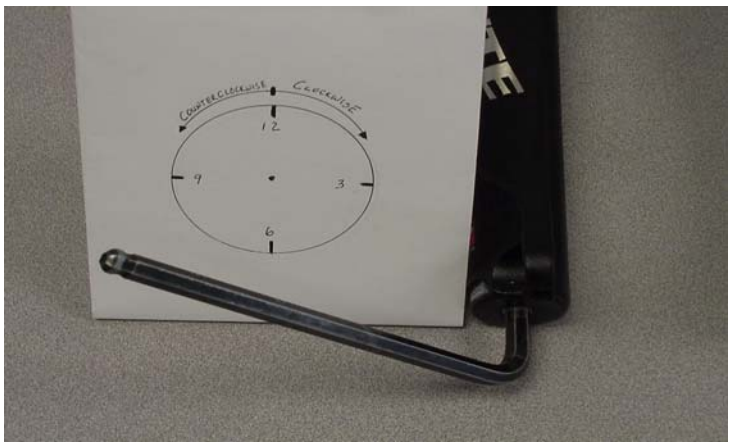
Wiper Seal – A rubber material that is used as a seal to keep dirt and water out of the outer casting legs. It is not designed to keep air pressure or extreme oil pressure in. Manitou has the new Evil Genius wiper seals.

2004 Stance Forks Disassembly and Rebuild Instructions

Disassembly Instructions

Removal of Outer Casting

1. On forks with the Wind Down travel adjust system, be sure to set travel to its longest setting. For **Wind Down,** rotate adjuster on top left of fork crown counterclockwise until it stops. This will relieve spring tension on the fork. More complete instructions for servicing Travel Adjust systems may be found in the "Travel Adjust "section.
2. Turn the fork upside down and remove the fixing screws that attach the Rebound Adjuster Knob (Blue) and/or the Rapid Travel 1, (Red) Travel Adjust knob. Set both knobs and screws aside.
3. (**Note**: there will be three small pieces under the Red knob – wave washer, detent spring, and a plastic detent plate.)
   USE: 2mm Allen wrench to unscrew fixing screws.
4. Remove the 11mm Compression Rod bolt from the bottom of the left leg (From the rider's perspective).
   USE: 11mm socket, nut driver, or open-end wrench.
5. Insert 8mm Allen wrench into the end of the Rebound Damper Shaft on the bottom of the right leg. Turn the wrench in a ***Clock Wise*** direction in order to loosen the damper shaft in the casting (See Figure below). You are turning the Damper Shaft in a way that causes it to disappear into the casting leg.



   USE: 8mm Allen wrench
6. Working with the "Semi Bath" lubrication system:
   A. Position the bottom of the fork legs over a drain pan that is on the ground. Pull the casting downward towards the pan, allowing the Semi Bath oil in the casting to drip into the pan. Pull the casting completely off of the inner legs and wipe any excess oil off of inner legs and inside of casting.
      USE: Drainage pan and extra rags

Removal of Spring and Compression Rod Assembly

1. **For Stance Air Assist forks (Air/spring systems as the spring)**: Remove all of the air pressure from the Schrader valve on top of the crown on the left side (Black top cap), by depressing the Schrader valve. Be sure to hold fork with the top of the crown facing upwards. (**Note**: When the air is released, this is a mixture of the oil and air inside the leg).
2. If you have not removed the Outer casting, refer to the above section on Removal of Outer Casting, then proceed to next step.
3. Unscrew the end cap on the bottom of the inner leg and remove compression rod assembly. This will consist of a compression rod, bottom and top out bumpers, the end cap, and should be followed by a coil spring and then another rod (air push rod). This spring is the one that would be changed if the fork's SAG needed to be changed beyond the capabilities of the air pressure.
4. **For Stance Coil Spring forks (Coil Springs only):** Remove the adjuster knob from the top of the Wind Down adjuster assembly on the top of the crown on the left side of the fork, by unscrewing the 2mm Allen head screw. Use a 20mm socket and unscrew the remainder of the assembly from the crown. The spring will be attached to the bottom of the assembly, when you pull it form the inner leg.
5. Pull the spring from the assembly and it can be substituted with a different rated spring if necessary.
6. The compression rod assembly on a Coil fork may be removed in the same
7. procedure as described above in the removal of an air spring.
    a. **USE:** 24mm Open-end wrench or 8-10" Adjustable wrench, 2mm Allen wrench, 24mm socket
8. **For more specific details on Wind Down, and Air Assist, refer to "Travel Adjust" section of this manual.**

Bushing Removal & Installation

Please refer to section on Bushing Removal & Installation.

Assembly Instructions

Reassembly of Crown Steer/Leg Assembly

For Air Assist Forks

WARNING All top caps for Damper and Spring systems must be properly tightened prior to use. Failure to do so could result in injury or possible death.

1. Grease the outside of the air piston and then apply a thin film of grease to the threads at the top of the inner leg. It is recommended to use Prep M grease (P/N: 85-0031). Push the piston into the top of the left inner leg with the metallic side of the piston facing you, using your thumb. Push the piston past the threads and then pour approximately 3-4cc's of a 20-50wt oil (P/N: 85-0022) into the top of the piston. This oil needs to be checked about every 6-8 weeks of riding time. It will dissipate over time and then you may experience some air leakage and increased stiction in the fork movement.
2. Install the air cap and tighten it to value given on fork schematic.

3. Turn crown/steer/leg assembly over, so that the bottoms of the inner legs are facing you. In the same leg that you just installed the air piston and air cap into; insert the air push rod (longer end in first), then the positive spring (this is your ride kit spring) onto the short end of the push rod, then install the compression rod assembly, and tighten end cap into leg. Tighten to torque values that are listed on fork schematic.
4. Now, install damping assembly into bottom of other inner leg. Apply a thin layer of Prep M grease onto o-ring that is around the piston at top of assembly. Install the assembly and tighten end cap to specified torque value.
5. Turn Crown/steer/leg assembly right side up, so that the crown of the assembly is facing you. Extend the damping assembly all the way out and then pour damping oil (P/N: 85-0023) into the right inner leg. Fill leg about ¼ full. Take a rag and cover the top of the right inner leg and then stroke the damping assembly up and down about 5 times. This will insure that oil gets below the piston and not create an air space. Extend the damping assembly all the way out and then fill the inner leg to the specified oil level.
6. Insert the Volume control assembly into the top of the right inner leg and tighten it to specified torque value. Be sure that you unscrew the red 16mm Hex shaped Volume control nut all of the way counterclockwise after you tighten the entire assembly into the inner leg.
7. The crown/steer/leg assembly is now complete.
8. **Use:** 8-10" adjustable wrench, 24mm socket, metric ruler.

WARNING All leg caps for Damper and Spring systems must be properly tightened prior to use. Failure to do so could result in injury or possible death.

For Coil spring Forks :

1. Turn the crown/steer/leg assembly over so that the bottoms of the inner legs are facing you. Install the compression rod assembly into the bottom of the left inner leg (the leg that was the left side of the fork when you are sitting on the bicycle) and tighten the end cap to specified torque value.
2. **Refer to step 4 above, for installation of damping assembly.**
3. **Refer to step 5 & 6 above, for completing the installation of the components of the damper leg.**
4. **Refer to Wind Down assembly service instructions for reassembly of Wind Down assembly.**
5. The crown/steer/leg assembly is now complete.

Installation of Outer Casting

For Stance :

When installing the outer Leg Casting to the Crown Steer Assy, Drop Out bolts and Damper Shafts must be properly tightened prior to use. Failure to do so could result in injury or possible death.

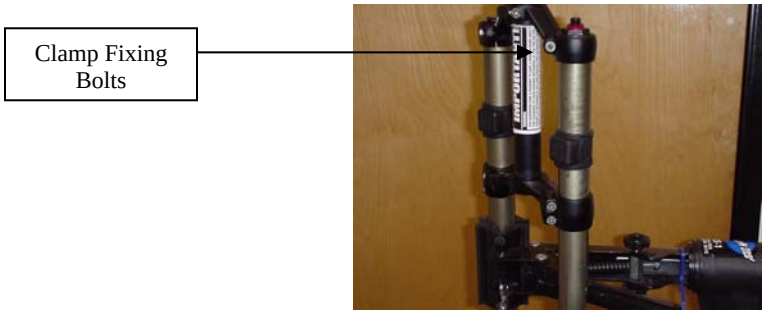
1. Turn completed crown/steer/leg assembly upside down, so that the compression rod and damper shaft are facing you. You will see a bottom out bumper on the damper
2. Switch fork to longest travel setting.
3. Place the fork upside down (dropouts up) and slowly remove the travel adjust knob using a 2mm Allen wrench. Three parts are found underneath the knob: wave washer, detent clip, and detent plate. Remove all parts to expose the 7/16 compression rod screw.
4. Use a 7/16 wrench to remove the compression rod screw.
5. Remove rebound adjuster knob if applicable using a 2mm Allen wrench.
6. From the right leg dropout, use an 8mm Allen wrench to turn the damper shaft **clockwise** until it can be pushed into the casting.

7. Remove crown/steer/inner leg assembly from the outer leg casting over a drain pan, due to Semi Bath oil may leak out of the bottom of the casting. Set casting aside in drain pan to allow all oil to drain from casting.
8. Remove left leg end cap and travel adjust assembly from inner leg.

Assembly:

1. Install travel adjust assembly into the left inner leg. Be sure that the adjuster dogs are retracted into the shaft allowing the spring to ride at the top of the rod. Twist the hex shaft (shaft where knob is attached) if necessary to retract the dogs, do not pull on the shaft. Start threads by hand and then torque to 20inlbs.
2. Pull out damper shaft as far as it will go.
3. Lightly grease the bushings on the inside of the outer leg casting and on the lower portion of the inner legs below the boots using a thick grease such as Motorex Bike Grease 2000.
4. Press inner leg assembly into outer leg casting until damper shaft contacts casting. (It is recommended to extend rebound damper out from end cap as far as it will go and then slide bottom out bumper towards the end cap as far as it will go. The bumper will help to hold the damper shaft in place as you are inserting the inner legs into the casting). Adjuster hex shaft should protrude slightly from casting.
5. Use an 8mm hex wrench to turn the damper shaft **counterclockwise**, threading it into the casting. Torque to 20inlbs.
6. Install rebound adjuster knob if applicable. Knob should turn uninhibited until the indicator is stopped by the casting. If not, remove knob and reinstall on hex shaft in 1/6 turn increments until full travel is reached.
7. Install the compression rod screw and torque to 20inlbs.
8. Install detent plate and clip over the travel adjust screw so that the clip points to the center of the fork. Your fork will have a raised area in the detent plate that locates in a keyway in the casting. This features help prevent the plate from rotating. Place the wave washer on top of the detent plate, using a small amount of grease to hold it in place.
9. Install knob on top of the detent plate and washer, with its indicator pointing to the longest travel position. The underside of the knob has cutouts that the detent clip will nest in. Secure knob onto assembly with 2mm fixing screw.

STANCE DUAL CROWN FORKS



1. **Removal of inner legs from Dual Clamps:**
   Loosen upper clamp fixing bolts with a 4mm Allen wrench and remove upper clamp from inner legs.
   Loosen lower clamp fixing bolts with a 4mm Allen wrench and remove lower clamp from inner legs. You may have to remove the frame bumpers first to remove the lower clamp.
2. **Installation of inner legs into Dual Clamps:**

WARNING All Triple Clamp Pinch Bolts must be properly tightened prior to use. Failure to do so could result in injury or possible death.

Insert inner legs into lower clamp about 5 inches (125mm).
Install upper clamp onto the inner legs and steer tube, so that the top of the upper clamp is flush with the top of the inner legs. Do not tighten fixing bolts at this time, because you will have to make adjustments to the distance between the clamps before you install the fork on your bike.

3. Install SPV rebound damping assembly or TPC rebound damping assembly into bottom of right inner leg. Be sure to check the function of the SPV valve and apply a thin layer of Prep M grease onto o-ring that is around the piston at top of assembly. Install the assembly and tighten end cap to specified torque value. **Be sure to put a dab of Blue Loctite on the end cap threads before installing cap into leg.**

WARNING All leg caps for Damper and Spring systems must be properly tightened prior to use. Failure to do so could result in injury or possible death.

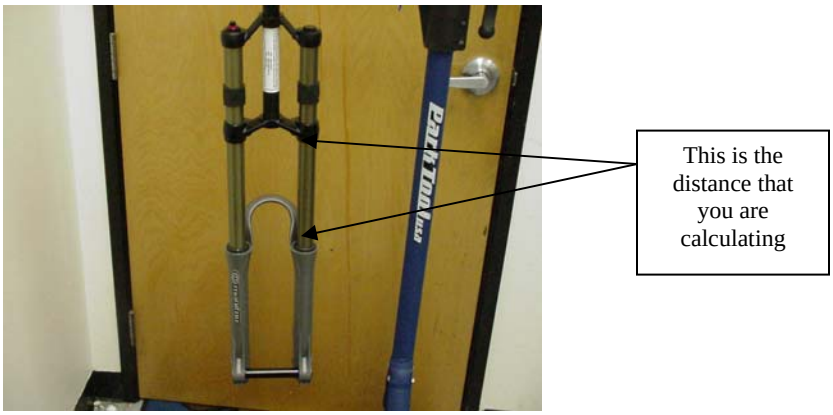
4. Install compression rod assembly into bottom of left inner leg and tighten to specified torque value. **Be sure to put a dab of Blue Loctite on the end cap threads before installing cap into leg.**
5. Turn Crown/steer/leg assembly right side up, so that the crown of the assembly is facing you. Extend the SPV rebound damping assembly or TPC rebound damping assembly all the way out and then pour damping oil (P/N: 85-0023) into the right inner leg. Fill leg about ¼ of the way up. Take a rag and cover the top of the right inner leg and then stroke the SPV damping assembly up and down about 5 times. This will insure that oil gets below the piston and not create an air space. Extend the damping assembly all the way out and then fill the inner leg to the specified oil level.
6. Insert the Volume control assembly or TPC+ compression damping assembly into the top of the right inner leg and tighten it to specified torque value. Be sure that you unscrew the red 16mm Hex shaped Volume control nut all of the way counterclockwise after you tighten the entire assembly into the inner leg.

WARNING All top caps for Damper and Spring systems must be properly tightened prior to use. Failure to do so could result in injury or possible death.

7. Insert spring into top of left leg followed by top cap. Tighten top cap to specified torque value.

Setting Dual Crown Fork Ride Height

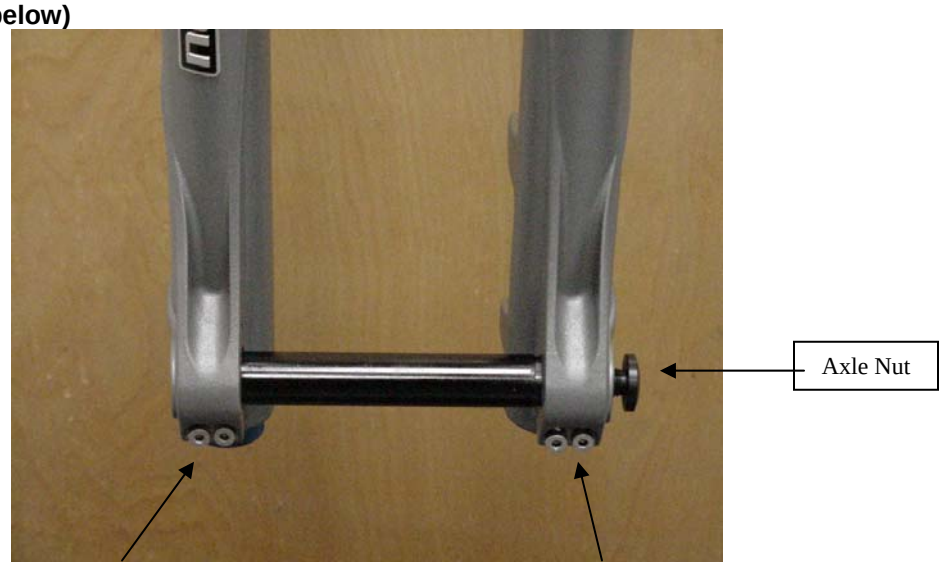
1. When setting the ride height for your fork, make this calculation to determine the lowest point at which you can set the lower clamp without it interfering the casting's arch on full compression: **Travel of fork + 20mm.**



2. The number that you calculate will be measured from the top of the dust seal on the casting to the bottom of the lower clamp.
   Warning: Do not set the lower crown lower than the measurement that you calculated for fear of interference with brake arch.

Installation of Hex Thru Axle

1. Hold wheel between drop outs. Insert Hex Thru Axle into the outside of the left Drop out (as you are facing fork) and push it through the hub of the wheel into the right drop out.
2. Thread Thru Axle nut into the end of the axle that is in the right drop out. Thread in half Way.
3. Set the end of the axle flush with the outside of the left drop out and tighten the 3mm clamp fixing bolts to specified torque value as called out at end of manual.
4. Finish the installation by tightening axle nut to specified torque value and then tighten the clamp fixing bolts on the right drop out to the specified torque.
   (see photo below)



Travel Adjust Systems: Wind Down

Wind Down Travel Adjust Service Instructions

Disassembly

1. Turn travel adjust knob (clear plastic knob on top of the left side of the crown) in a counterclockwise direction until it stops. This insures that the fork is in its longest travel and reduces any spring preload on the fork.
2. Remove the 2mm Allen screw from the knob. Use a 28mm socket to unscrew the top cap assembly from the crown. (Refer to Figure 1)
3. Pull spring out of inner leg. If spring will not come out, you must take the outer casting off of inner legs (refer to Removal of Outer Casting instructions). Then remove the end cap from the bottom of the left leg and remove the Wind Down compression rod assembly and spring as a single unit through the bottom of the leg. You will find that on earlier production fork models, that there is a nylon washer at the top of the compression rod assembly that is holding the spring in place. Hold the spring in one hand and the compression rod assembly in your other hand and pull the apart from each other at a slight angle to each other. Once you have the two apart, remove the Allen bolt on top of the compression rod with a 4mm Allen wrench and remove the nylon washer (Fig 2). Re-install the bolt without the washer, it will not affect the operation of the Wind Down mechanism and insure that you will not have to take the whole fork apart in the future to change ride kit springs. (Note: the spring that you remove should have another spring (booster spring) intertwined within it)
   Tools needed: 28mm socket, 2mm Allen wrench, 8 or 10" Adjustable wrench, 11mm nut driver or open end wrench.

Assembly

1. If you had to remove the outer casting, reassemble the compression rod assembly and then follow instructions for Installation of Outer Casting.
2. Optional Ride Kits - If you need to adjust to overall ride characteristics either softer or firmer, purchase and/or install as follows (Kit Part Numbers can be found in the Service Part section of this manual):

   - Soft - Remove the Booster Spring
   - Firm - Purchase Firm Ride Kit and install the Booster Spring
   - Extra Firm - Purchase Extra Firm Ride Kit and install the Booster Spring

   1. To remove the booster spring from the main spring; grasp the flat end of the booster spring with a pair of needle nose pliers and twist it in a clockwise direction to unscrew it from the main spring.
   2. To install a booster spring into a main spring, catch the flat end of the booster spring under the flat end of the main spring and twist it counterclockwise into the main spring. Make sure that the booster spring is threaded all of the way down into and contained by the main spring. Before inserting it back into the inner leg.

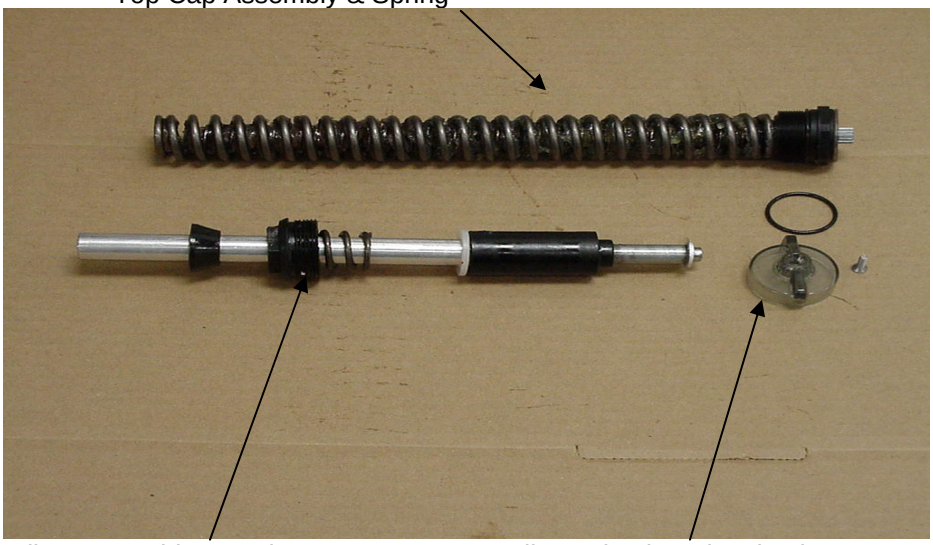
3. Generously grease the spring and insert it into the inner leg. The spring needs to seat onto the top of the compression rod.

4. Insert the wind down top cap assembly into the spring; the "D" shaped portion of the adjuster assembly must fit into the "D" shaped end of the main spring. Screw the assembly into the inner leg and tighten per the fastener torque guide at the end of this manual.

5. Install adjuster knob and 2mm hex screw. Turn the knob counterclockwise until it stops. This insures that the fork is in its longest travel position. If the travel indicator arrow on the crown is not lined up with the maximum travel point on the indicator dial, loosen the compression rod bolt on the bottom of the outer casting and continue to turn the knob counterclockwise until the indicator point to maximum travel. Retighten the compression bolt per the fastener torque guide at the end of this manual.

Wind Down Travel Adjust Assembly

Top Cap Assembly & Spring



Travel adjust assembly & End Cap

Adjuster knob O-ring, knob, & 2mm screw

Figure 1

Remove Nylon washer that rests on top of aluminum washer



4mm recessed Allen bolt

Figure 2

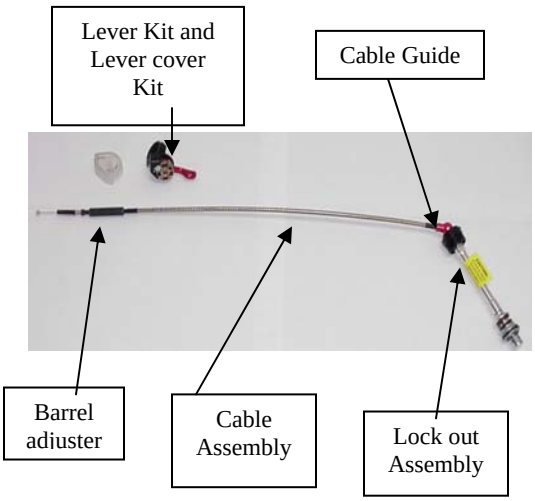
Air Assist Trouble Shooting Tips

The root cause of the air leaking from the left leg of the fork (the side with the Schrader valve on top) is that the casting was drilled incorrectly on the hole in the bottom of the casting where the compression rod bolt goes. It turns out that the Stance casting and the Nixon casting are the same and have the same problem. This has caused inconsistency with the IT system and the Air Assist system. Below are some steps to follow in order to trouble shoot this issue and potentially resolve it.

1. Unlike trouble shooting the IT system, it is difficult to visually determine if the hole in the bottom of the casting is drilled correctly. So you need to remove the casting and check a couple of other areas.
2. Once the casting is off, try pumping up the left leg with about 50psi. If it blows out immediately, this means that the seal around the compression rod piston is bad. This can be changed out with a new Quad ring (p/n: 066398). Your assembly will probably have an o-ring on it.
3. Just as with air pistons, you want to coat the threads of the inner leg with Prep M grease and the Quad ring, and then twist the assembly as you put force on it to get it past the threads of the inner leg. It is also important to add the air piston oil (20/50wt) (about 3-5cc's) through the top of the inner leg prior to pumping it up.
4. If the air does not immediately pass from the inner leg, I recommend that you put that end into a bucket of water and see if any air bubbles are produced. Once again, if the bubbles are seen, check that seal.
5. If you get no bubbles, I would put some pressure on the compression rod in a side ways manner to side load that shaft. If air is released, it points to the hole in the casting being off center.
6. In this case, you need to change the casting. Remember: The Nixon casting is interchangeable.

Remote Lock out Service Instructions

Complete Remote Lock out Assembly



There are (5) Service kits available for each fork model that utilizes a Remote Lock out.

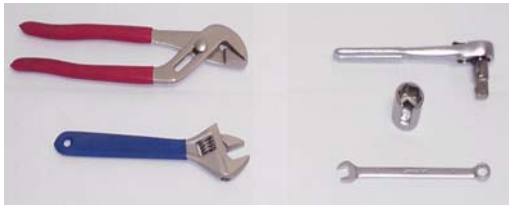
1. Lever assembly
2. Lever Cover
3. Cable assembly
4. Cable guide
5. Lock out assembly

*Reference to these kits may be found in the Service Parts Matrix

Instructions for removing assembly from fork

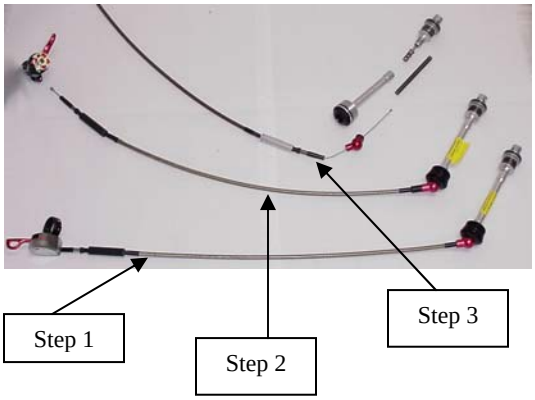
1. Unscrew barrel adjuster in a counterclockwise direction until it stops.
2. Remove Lever cover by squeezing the two plastic prongs together on the under side of the lever and pulling the cover in an upwards direction from the lever assembly.
3. Pull on Black cable ferrule nearest to lever and pull cable assembly from the groove in the Lever assembly, thus releasing cable from lever. Unhook cable end from lever.
4. Unscrew the top cap of the Lock out assembly from the fork crown using socket (Answer p/n: 83-2503) or an adjustable wrench.
5. Pull Lock out assembly out of crown by twisting the assembly like unscrewing a screw and applying an upward pressure. Slowly pull assembly out of crown and watch out for some excess damping oil to come out of inner leg as the piston at the end of the assembly comes out of crown.

Tools needed to service assembly



Adjustable Pliers
Adjustable Wrench
Socket Wrench
22mm Socket W/cut out
10mm open end wrench

Steps For Cable Disassembly



Tool Placement to unscrew upper shaft assembly from lower assembly (Figure A)



Cable hook up connection (Figure B)





Figure C

Cable Replacement Instructions

1. Step 1: Lock out assembly should be out of fork at this point.
2. Step 2: Cable assembly should be out of Lever assembly
3. Step 3: Look at tool placement in Figure A. It is recommended to use the Adjustable Pliers to grasp the flange of the lower assembly right above the coil blow off spring. Use a 10mm open end wrench on the flats of the upper assembly just below the top cap. Hold the flange with the Pliers and turn the 10mm wrench in a counterclockwise direction in order to unscrew the upper and lower assemblies.
4. Separate the two assemblies and unhook the cable end from the eye hook as shown in Figure B.
5. Pull the cable out through the top cap and red cable guide. There will also be a 75mm spring inside of the upper shaft. This spring provides the tension for the cable when you move the Lock out lever from the Lock position to Unlock position. The inner cable runs through the center of the spring.

Cable Installation Instructions

1. The inner cable is not removable from the cable assembly. The entire cable assembly must be replaced. Install the new cable assembly by reversing the Disassembly the instructions.
2. Slide the inner cable through the red cable guide, the top cap, and down through the spring. (Be sure to put a little bit of the Prep M grease on the spring before putting it back into the upper shaft assembly.)
3. Push the cable assembly together, forcing the inner cable to stick through the spring and then out through the end of the upper shaft assembly. (See Figure C). Hook the cable end into the eye hook and then pull on the cable assembly to pull the two shafts together. Tighten them together snuggly.
4. Check oil level in fork leg (refer to oil level heights in fork spec sheets). Install Lock out assembly into the fork leg and tighten top cap to proper torque.
5. Re-install the other cable end into the Lever assembly, and then put the lever cover back on to the Lever assembly. You may have to pull the cable assembly away from the housing of the lever assembly to expose the inner cable, so that you can slide the cover into its proper position.

Lock Out Troubleshooting Tips

1. Installation of Lock out Compression Damping System
   - Check the o-ring that is installed around the lower piston on the damper shaft for tears or deformation. Replace it, if it is damaged. This is the most common reason why the Lock out system will not function.
   - Check the level of oil in the inner leg. The oil level may be a little high, but never low. The oil level must be high enough to cover the window that opens and closes on the damper shaft.
   - Make sure that the oil flow window on the lower portion of the damper shaft, positioned right above the piston, opens and closes when you move the lock out knob from open to close.
   - Inspect the rubber o-ring that is around the threaded portion of the cap that screws into the inner leg of the fork. This o-ring should not have nicks or tears in it and should fit tightly around the cap.
   - Make sure that when installing the Lock out system into the fork leg that you follow this procedure: Put a little bit of Prep M grease on the urethane o-ring, make sure that that the oil flow window is open using a motion like screwing in a screw. Twist the assy. and apply a little pressure to insert the piston part of the mechanism past the threads at the top of the inner leg. Then push the assy. into the leg until the threads on the cap intersect the threads inside the inner leg, screw the cap in and do not use any tools to over tighten the cap. Once the cap is tightened, compression the fork several times to circulate the oil through the system and then activate the Lock out system by moving the lever to the other position. The fork should have between 2 & 5mm of progressive travel before it locks out.

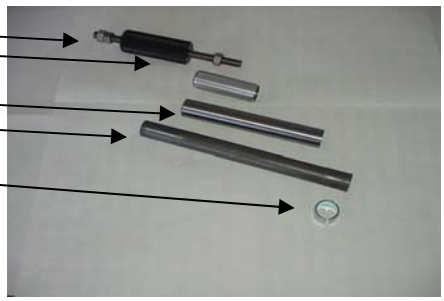
2. Troubleshooting
   - If the Lock out does not lock out properly, go back through the steps listed above.
   - If the o-rings are damaged on the Lock out piston, replace them with **P/N 062594(urethane 1998-2003 Mars, SX, & Skareb Lock outs), 065261 (04/05 Skareb Lockouts)** and **02/03 Black 100/120mm Lock outs**, and **040315 (Axel's).**
   - If the oil level is low, check to see if there is evidence of leaking at the Rebound Damper. If so, replace the Rebound Damper assembly and retry the Lock out. The oil level may be low if you are upgrading a standard Compression Damping system with the Lock out system. In this case, make sure the oil level is at the correct level before trying it again. If there are signs of oil leaking around the top of the Lock out system, check the rubber o-ring (**040524**) and replace if needed. If the window does not open or close when the knob is moved, replace the entire Lock out assembly.

Bushing Removal & Installation

Bushing Removal

(Note: use appropriate removal ring that corresponds to the leg diameter of the fork being repaired)

Leg Diameter	**Answer Kit #**
25.4mm (1”)	85-5191
28.6mm (11/8”)	85-5189
30mm	85-5194
32mm	85-5192

Bushing Removal Tool Components A. Slide Hammer B. Threaded Handle C. Slide D. Threaded Shaft E. Removal Ring	
Bushing Removal Tool Assembly	

Bushing Removal (CONT.)

Bushing Removal Instructions

A. Install 25.4mm Removal ring on the shiny, smaller diameter threaded shaft. Be sure to install the ring with the tapered, chamfered end first, followed by the long slide tube. This tapered end leads the tool through the bushing.

B. Start the procedure by removing the Dust/Wiper seal with a screwdriver, prying it out.

C. Insert Removal tool past the upper bushing and then stop. It is important to pull one bushing out at a time. Push the slide on the threaded shaft down towards the removal ring. Hold the casting with one hand and the slide hammer with your other hand. Now move the slide hammer in a motion away from the casting and repeat this action until the bushing comes out.

D. For all other leg diameters: use the larger diameter (dark colored) threaded shaft and repeat steps A-C.

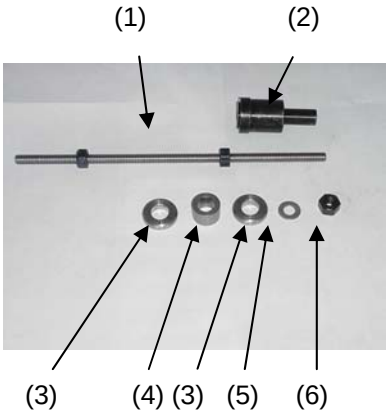


Bushing Installation

(Note: Sizer kits listed in above chart contain the sizers needed for each specific leg diameter.)

Bushing Installation Tool Components

1. Installation Mandrel
2. Threaded Rod w/nuts
3. Sizer rings
4. Spacer
5. Washer
6. Nut



Bushing Installation (CONT.)

Bushing Installation Tool Assembly
With weighted handle



When selecting sizer rings to install bushings, choose the two rings that are in the middle of the size run to start with.

1. Assemble installation tool as shown in picture above. Each leg diameter kit has all of the needed pieces to remove and install bushings for forks with serviceable bushings. Some of the kits come with gauges to tell you how far to drive in the lower bushings. Upper bushings are driven in as far as the stop in the top of the casting will allow. The general rule of thumb is that the lower bushings must not be driven any deeper than 5" into a casting leg. If they do go deeper, call Customer Service at Answer Products – 800-423-0273 for a new outer casting.

2. Always assemble Mandrel with the larger diameter sizer ring being placed on the mandrel first, then the spacer, the next largest sizer ring, followed by the washer and the nut to hold it in place. Be sure to lock the nut above the Mandrel and below the Mandrel against each other.



3. Replace the lower bushing (bushing with a thicker wall diameter) first. Place a small amount of Prep M grease onto the sizer rings to help the rings come through the bushings when pulling them out. Slide bushing onto Mandrel until it stops. Apply a bead of Red Loctite all the way around the outside of the bushing. Hold casting on top of bench with a rag under the end of the legs and insert installation tool with bushing into casting leg.



Bushing Installation (CONT.)

4. Slide weighted handle onto end of threaded rod and tap rod into casting with rubber Mallet until proper depth is achieved. If using depth gage, slide gage onto rod before installing weighted handle and let it settle on of Mandrel. Tap rod until appropriate line on gage is even with top of casting leg.

5. Remove weighted handle and gage (if applicable).

6. For sizing of the lower bushing:

7. Use slotted top cap from sizer kit and set it into the top of the casting leg, straddling the threaded rod. Spin the extra nut with washer down to the top cap and using a wrench, socket, or speeder wrench, tighten the nut in a clockwise direction. This will cause the Mandrel to be pulled through the bushing, thus sizing it. Keep turning the nut until the tool is all the way through the bushing and can be pulled out of the leg.

8. To install top bushings, repeat steps B-E. Note that the top bushing gets inserted until it stops against the step inside of the casting. The extra sleeve that comes with the sizer kit is used to space the top cap off of the casting, so that there is enough room to pull the sizers out of the casting without bottoming on the cap.

9. If you find that the bushings are too tight after installing them, use the sizer Mandrel that does not have a stop on it to hold the bushing while installing it into the casting. This is available in the 25.4mm leg kit (85-5191) to go back in and resize the bushings.

10. To resize bushings, Choose the next larger size rings and repeat the above process.

11. When satisfied with the results, reinstall Dust/wiper seals and then reassemble fork

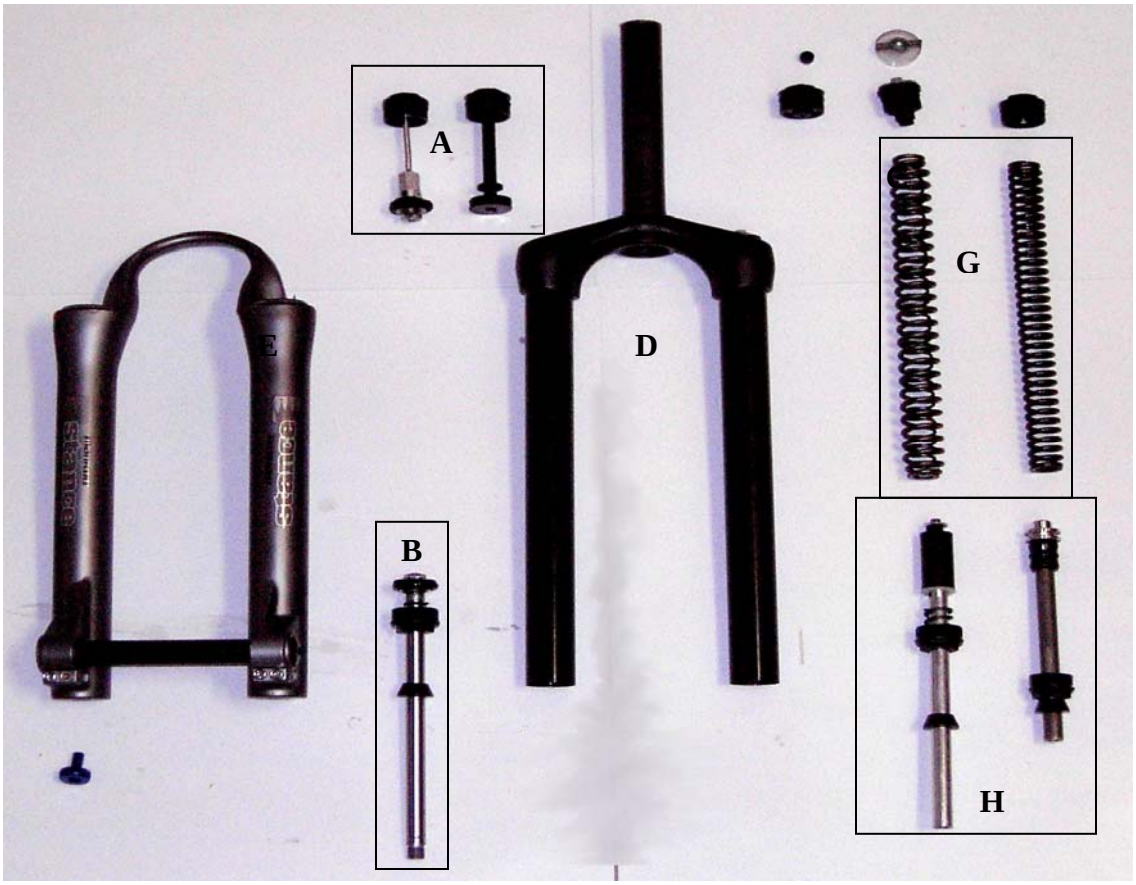
TROUBLESHOOTING

Symptom	Cause	Solution	Service Manual Page
Air Loss	Schrader Valve leaks	Tighten Valve core, replace bad parts as needed.	**9**
	Air Cap O-ring leaks	Make sure O-ring is seated properly, replace parts as needed.	**9**
	Air Piston leaks	Check oil volume on top of piston, replace parts as needed.	**11**
	Air Top Cap leaks	Check O-ring, tighten cap to proper Torque, replace parts as needed.	**9**
Oil leaks from Wiper Seals	Seal not seated properly	Remove Casting from Inner Legs, reinstall or replace seals	**8**
	Nicks or scratches on inner legs	Replace Crown/Steerer/Inner Leg Assembly	**13**
	Too much Semi Bath oil	Follow instructions for removal and installation of Outer Casting	**8**
	Wear	Remove Casting from Inner Legs, reinstall or replace seals	**8**
Oil leaks from bottom of Casting	Rebound damper shaft leaks	Replace Rebound Damping assembly	**8**
	Rebound damper shaft O-ring damaged	Replace O-ring on threaded end of Rebound Damping assembly	**9**
	Compression Rod Bolt leaks	Check O-ring on bolt to see if it is damaged and then reinstall	**8**
Lack of Travel	Tight Bushings	Resize bushings or replace with new ones if damaged	**23**
	Hydraulic lock out	Replace Rebound Damping assembly	**9**
	Semi Bath oil volume	Follow instructions for removal and installation of Outer Casting	**8**
	Damper oil volume	Check oil level, Replace Rebound Damping assembly if needed	**9**
	Fork alignment	Visually inspect fork, call Answer Products Customer Service	**2**

TROUBLESHOOTING (CONT.)

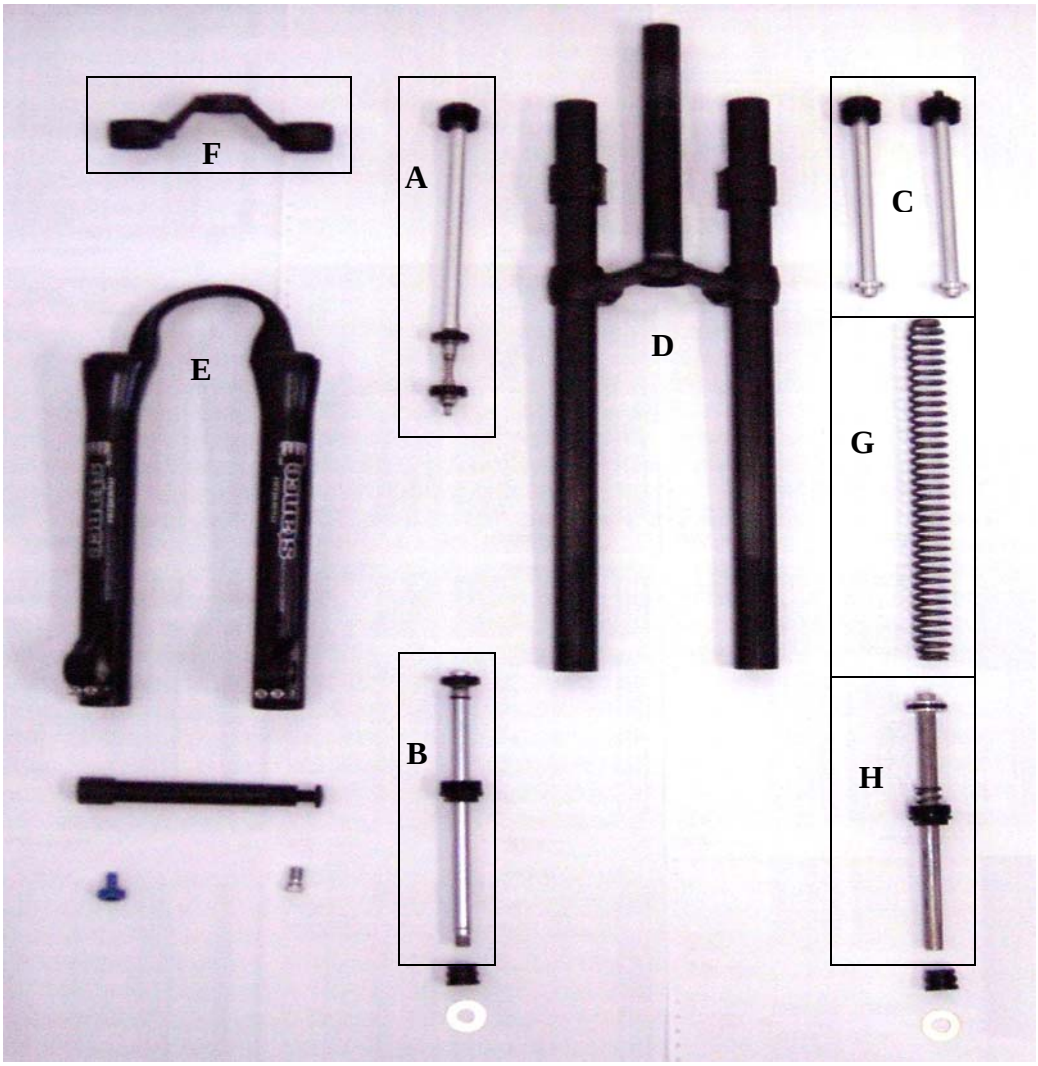
Symptom	Cause	Solution	Service Manual Page
Fork Top out	Loss of Rebound Damping	Replace Rebound Damping assembly	**9**
	Top out spring damaged	Inspect and replace Top out spring if needed.	**10**
	Damping oil volume not correct	Check oil level, Replace Rebound Damping assembly if needed	**13**
Fork Bottom out	Too much SAG	Refer to SAG Set up in Tuning section of Owners Manual	
	Bottom out Bumper damaged	Inspect and replace Bottom out Bumper if needed	**13**
	Damping oil volume not correct	Check oil level, Replace Rebound Damping assembly if needed	**13**
Play in Fork	Loose bushings	Resize bushings or replace with new ones if damaged	**23**
	Loose Compression Rod bolt	Tighten bolt to specified torque	**13**
	Loose Rebound damping shaft	Tighten Shaft to specified torque	**13**
	Loose press fit tolerances	Call Answer Products Customer Service	**2**
Air Assist Problems	Various	See Air Assist Troubleshooting Guide	**14**
Lock Out Problems	Various	See Lock Out Troubleshooting	**17**
Remote Lockout Problems	Various	See Remote Lockout Section	**15**

Stance: Fastener Torque and Setup Levels



Model: Stance	
Description	**Torque Values**
Torque – Brake Post	90–110inlbs (10.2-12.4nm)
Bushing Depth Left Lower	4.25 – 4.50in (108-113mm)
Bushing Depth Right Lower	4.25 – 4.50 (108-113mm)
Leg Caps - Not Cross-Threaded	25–35inlbs (2.8-4.0nm)
Torque – Damper Screw	10-30inlb (1.1-3.4nm)
Torque - Comp Rod Screw	10-30inlb (1.1-3.4nm)
Adjuster caps & Top Caps	
Torque	35-50inlbs (4.0-5.7nm)
Semi Bath Oil Volume	16cc per leg
Damping oil Level (100-130mm Travel)	3.9in, 75mm, 120cc

Stance Kingpin: Fastener Torque and Setup Levels



Model: Stance	
Description	**Torque Values**
Torque – Brake Post	90–110inlbs (10.2-12.4nm)
Bushing Depth Left Lower	4.25 – 4.50in (108-113mm)
Bushing Depth Right Lower	4.25 – 4.50 (108-113mm)
Leg Caps - Not Cross-Threaded	25–35inlbs (2.8-4.0nm)
Torque – Damper Screw	10-30inlb (1.1-3.4nm)
Torque - Comp Rod Screw	10-30inlb (1.1-3.4nm)
Adjuster caps & Top Caps	
Torque	35-50inlbs (4.0-5.7nm)
Semi Bath Oil Volume	16cc per leg
Damping oil Level (100-130mm Travel)	8.7-8.9 in, 220-226mm

Stance Service Kits

Model		Static		Blunt		Flow		Kingpin	
Travel (mm)		80	100	130	150	100/130	120/150	150	170
Comp Damp	A	83-2342						83-2343	
Rbnd Damp	B	83-2345		83-2347					83-2348
Pre Load Adj/Top Cap	C	83-2351						83-2352	
RTWD Travel Adjust Assy	C					83-2349	83-2350		
Air Cap	C	83-2353						83-2354	
Crn/Str/Leg	Std Stl Str	83-2355			83-2357	83-2355	83-2357		
	St Dbl Clamp - Small							85-5903	
	St Dbl Clamp - Large							85-5962	
	1.5 OS	83-2356			83-2358	83-2356	83-2358		
Outer Leg Assy	E								
QR	Matte Silver	83-2427							
QR	Matte Black	83-2361							
QR	Charcoal	83-2360							
TA	Matte Black	83-2363							
TA	Charcoal	83-2362							
Sticker Kit	Dark Forks	83-2364							
	Light Forks	83-2365							
Ride Kits	G								
	***WD Booster					83-2371	83-2373		
	***X-Soft	83-2366		83-2367				83-2367	
	***Soft	83-2368		83-2369		83-2370	83-2372	83-2369	
	***Medium	83-2374		83-2375				83-2375	
	***Firm	83-2376		83-2377		83-2378	83-2379	83-2377	
	***X-Firm	83-2380		83-2381				83-2381	
Comp Rod	H	83-2382	83-2383	83-2384	83-2384	83-2386	83-2387	83-2384	83-2388
Knob Kit	I	83-2391							
Seal Kit	K	83-2392							
Bumper Kit	K	83-2393		83-2394	83-2395	83-2396	83-2395		
Bushing Kit	E	85-5964							
Thru Axle Kit		83-2397							
Top Clamp - LG	F							85-5965	
Top Clamp - SM	F							85-5966	
Options:									
*****Lock Out	A	85-5896							
*****Internally Adj TPC +	A			83-2344					
*****FFD Rebound Damp	A	83-2347							