

ULTIMA 58mm INVERTED FORK *Service Manual*

SECTION ONE: CHANGING FLUIDS

SECTION TWO: FORK SEAL AND BUSHING REPLACEMENT

SECTION THREE: COMPLETE REBUILD

SECTION FOUR: PARTS LIST



NOTES:

It is highly recommended that only qualified personnel service this fork. Always use a clean workspace. It is important to keep all removed parts organized. Use care when handling chrome. Use caution! Fork tubes and parts become slippery when covered in oils. Always wear safety glasses.

Recommended Tools:

- Metric Allen Wrench Set
- SAE Allen Wrench Set
- 17mm Wrench
- 16mm Wrench
- 41mm Seal Driver
- Soft-Blow Hammer
- Fork Stand or Strap Wrench
- Pick

Fluid Requirements and Tips:

Forks come with **SAE20W** fork oils. Cold climates will affect the oil viscosity slowing down dampening speeds. Lighter oils are recommended if a quicker fork response is desired (less dampening). Thicker fork oils (higher viscosity) are recommended if slower fork responses are desired (more dampening).

SECTION ONE: CHANGING FLUIDS

Secure the outer fork tube in either a clamp style fork stand or by using a strap wrench. This will keep the fork from spinning. Be considerate of the chrome finish.

Figure 1 shows securing the outer fork tube. Using a 17mm wrench unthread the top cap. This is a standard thread so spin the top cap counter-clockwise to loosen. There is no spring force on this top cap. Keep the top tilted upward as the fluid will be exposed. With the top cap loose the fork oil can be drained by either tilting the fork upside down (*figure 2*) or by using the drain on the fork lower (shown in *figure 3*). The drain is the lower most screw with the larger diameter. The fork damper will need to be pumped in order to help drain all fluid.



figure 1



figure 2



figure 3

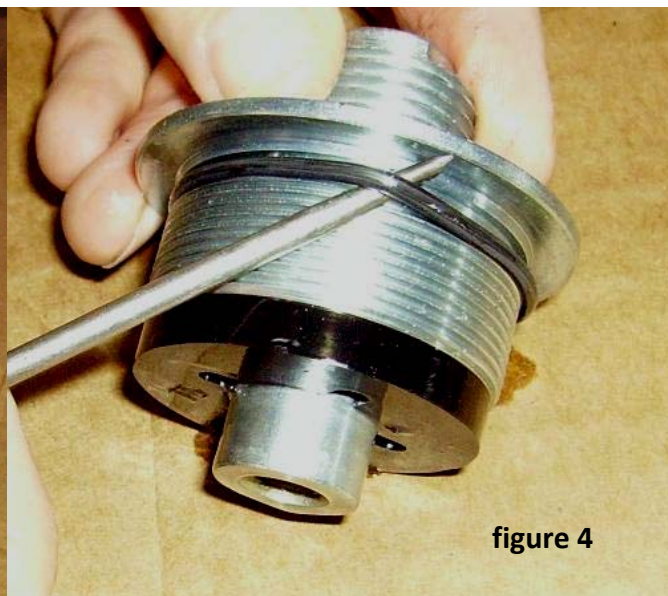


figure 4

☺ If replacing fork seals and bushings please skip to *section two*.

To complete the fork oil change please re-insert the drain plug if removed (*figure 3*). Use blue loctite on this screw. From the top of the fork it is time to fill with the appropriate fluid.

<u>Recommended fluid</u>		<u>Wet</u>	<u>Dry</u>
Standard:	SAE20W	15.2oz	16.0oz
Light Alternative:	SAE15W	15.2oz	16.0oz
Heavy Alternative:	SAE30W	15.2oz	16.0oz

After filling with the proper amount of fluid it is time to reinstall the top cap. Secure the outer fork tube using either a clamp style fork stand or by using a strap wrench. Check and clean threads before installing the top cap. Check o-ring for damage (*figure 4*). If there is damage move on to *section two*. Tighten the top cap by turning it clockwise until it is secure. Repeat this process for the second fork tube.

SECTION TWO: FORK SEAL AND BUSHING REPLACEMENT

Please see *section one* for the fluid draining procedure.

This section picks up from the ☺ located in the previous section.

After the fork tube assembly has been drained from all fluids the next step is to remove the top cap from the damper assembly (*figure 5*). To do this, use the wrench to secure the nut on the damper rod just below the top cap (*figure 6*). Loosen the top cap using another wrench and remove. Attached to the top cap are one o-ring and one rubber guide as shown in *figure 7*. Inspect these parts and replace if there are signs of damage.



figure 5

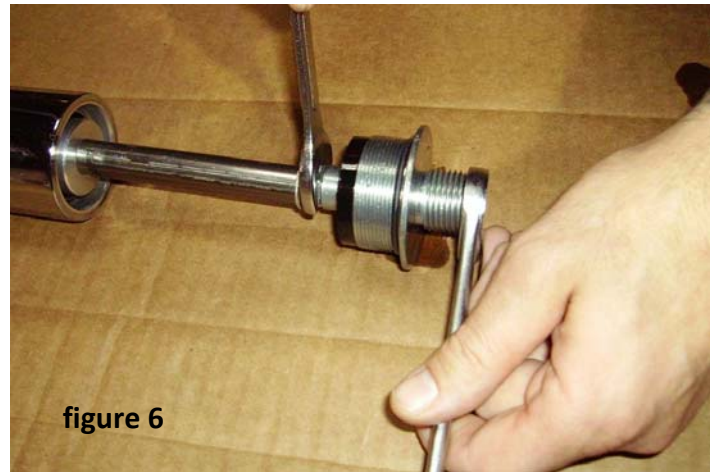


figure 6

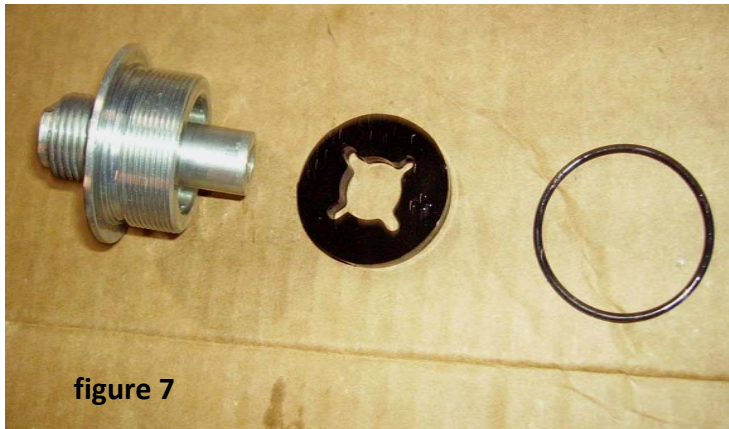


figure 7



figure 8

The next step is to loosen the fork seal appearance cap/dust cover located at the bottom of the outer fork tube (*figure 8*). This hides and protects the fork seal and can normally be removed using hand force. It may be smart to wrap this part as it is now free to slide down and make contact with the fender bracket. Use caution to keep from scratching the chrome surface. Once the fork seal appearance cap has been loosened it reveals the fork seal retaining clip and the fork seal. Use a pick to remove the clip (*figure 9*). It is now time to separate the fork tubes (*figure 10*). This process will take force and repeated pulling. Pull fork tubes apart firmly gripping each tube. Push fork tubes together and pull again in an impacting manner. After each pulling impact you will notice the seal slowly making its way out of the outer tube (*figure 11*).

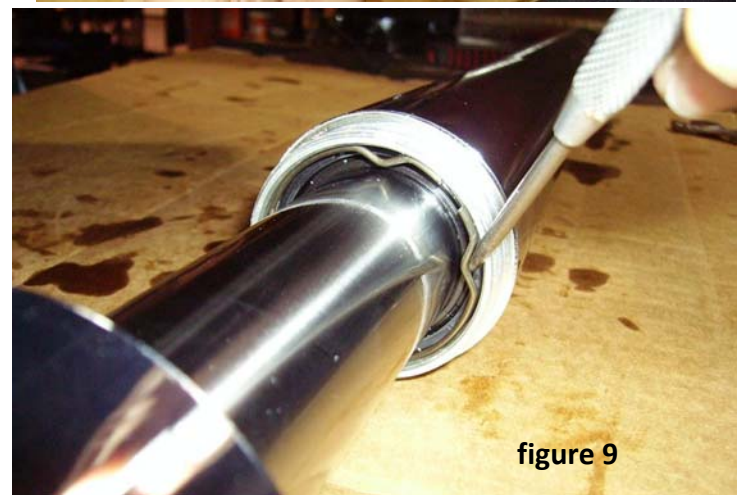


figure 9



figure 10

The bushing is slowly working its way out and is pushing the seal with every impact. As the seal becomes more viewable be sure your grip is secure as the fork tubes will separate (*figure 12*). Remove the two bushings, washer, seal, clip, and dust cover. *Figure 13* shows both of the bushings, the washer, and the seal.



figure 12

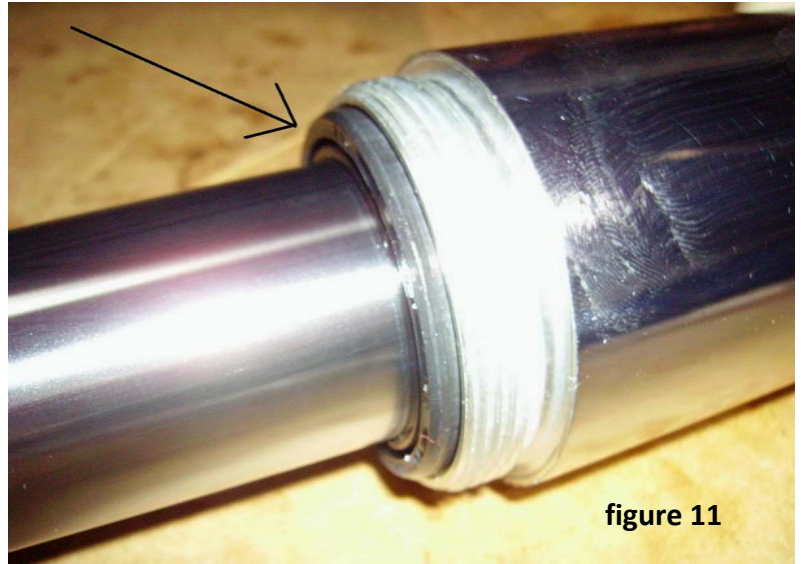


figure 11

😊 If further disassembly is required please move on to *section 3*.

Now it is time to install new bushings and fork seal. It is good practice to wipe down and clean all components to eliminate the risk of any contaminants before the install process.

Clean all threads and lubricate all new o-rings and seals.

Check the o-ring in the dust cover for any signs of wear or damage (*figure 14*). This o-ring is the first defense against debris and it is smart to replace at this time.



figure 13

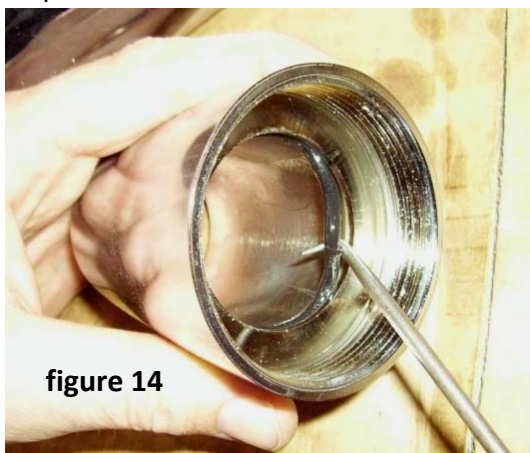


figure 14

Start reassembly by installing the new inner fork tube bushing (*figure 15*). This is the one with the smaller diameter of the two bushings.



figure 15

Next slide parts on to the inner tube in the following order:

1st) Dust cover/Appearance Cap. Make sure that the o-ring is installed (*figure 14*)

2nd) Retaining clip

3rd) New fork seal (flat surface facing down)

4th) Washer

5th) New Bushing (large diameter)

Now insert the top end of the inner fork tube into the lower end of the outer tube (*figure 16*). For the next step a split style 41mm seal driver will be used to push the bushing and washer into place (*figure 17*). Drive the bushing and washer forcefully until it comes to a positive stop. The next step is to drive the fork seal into place (*figure 18*). This is done in similar fashion but using a more delicate touch as to not harm the new seal.

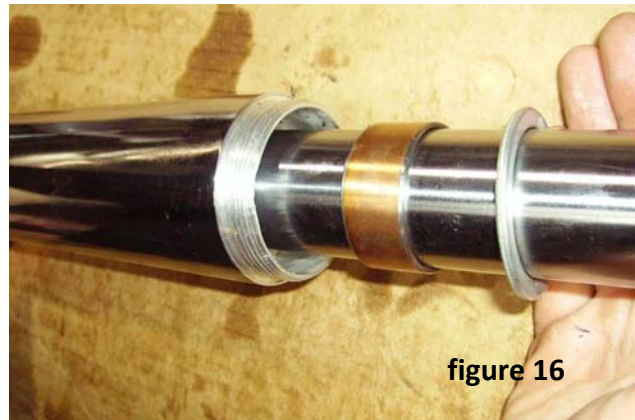


figure 16



figure 17



figure 18



figure 19

After the seal is fully seated the clip must be installed to hold the seal in place (*figure 19*). Use the pick to install the clip in the groove. If the groove is partially covered by the seal then the seal must be driven in further. After the clip is installed in the groove tighten the fork seal appearance cap (shown in *figure 19*) to the outer fork tube. Anti-seize is recommended. The upcoming steps are now focused back to the top of the fork tube. The next step is installing the rubber guide and o-ring onto the top cap (*figure 20*).



figure 20

Once this has been done it is time to tighten the top cap back onto the damper rod (*figure 21*). Now fill the fork with fork oil. Using a measured amount noted in *section 1* it may be necessary to pump the damper a few times to allow full circulation and add the full amount.



figure 21

The final step is now to thread the top cap back into the outer fork tube (*figure 22*). In order to tighten securely the fork tube will need to be held in place using either a fork clamp or a strap wrench.



figure 22

SECTION THREE: COMPLETE REBUILD

This section picks up from the 😊 located in the previous section.

To remove the fender brackets unbolt the six screws. See *figure 23*.

*Note: When installing these screws use red loctite.



figure 23

To remove the fork lower first loosen the small set screw located on the upper side of the fork lower (*figure 24*). The fork lower is threaded on and this will allow you to unscrew the fork lower.



figure 24

After the set screw has been removed the fork lower can be removed unthreading (counterclockwise) by hand (*figure 25*). The threads are very fine and cover a large length so the process is long.



figure 25

The removal of the fork lower will expose an o-ring that should be inspected and replaced if there are any signs of damage (*figure 26*). Clean the threads.



figure 26

Next is to remove the damper assembly. The lower end of the damper (shown in *figure 26* still installed, and in *figure 27* being held) is pressed into the inner fork tube. In order to remove the damper assembly turn the damper/fork tube assembly upside down so that the threaded damper rod is against a firm surface and push. Be very careful as the spring force will be in effect and the damper may fly out if too much force is used. The separated assembly is shown in *figure 28*.



figure 27



figure 28

To separate the spring from the damper assembly remove the nut from the threaded damper rod that holds the washer, spacer, spring guide as well as the spring (*figure 29*).

*Note: When reinstalling do tighten the nut (noted) approximately one inch from the top of the damper rod (*figure 29*). This preloads the spring properly.

Next remove the damper cap/lower spring guide from the damper assembly (*figure 30*). This is threaded on and has flats for use of a wrench.

*Note: During assembly make sure the hole located on the damper tube is towards the top (shown in *figure 30*) when installing this damper top cap. This allows the damper rod assembly to be removed from the damper tube (*figure 31*).

The lower cap is also threaded onto the damper tube (*figure 32*). There are two holes in this lower cap that can be used to aid in removal. Removing this will give you access to the damper valve.



figure 29

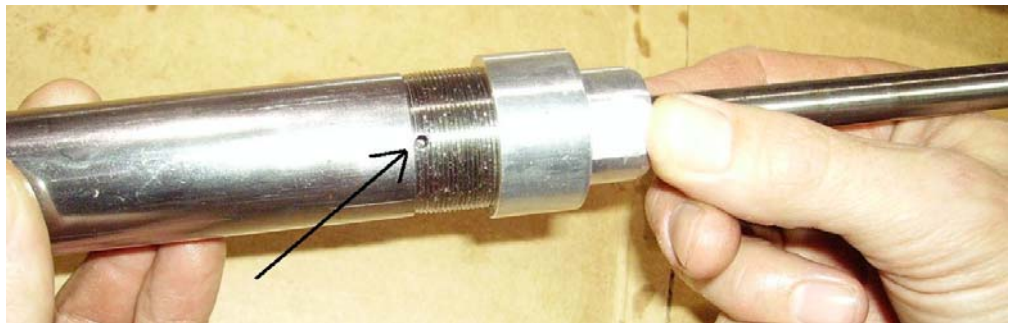


figure 30



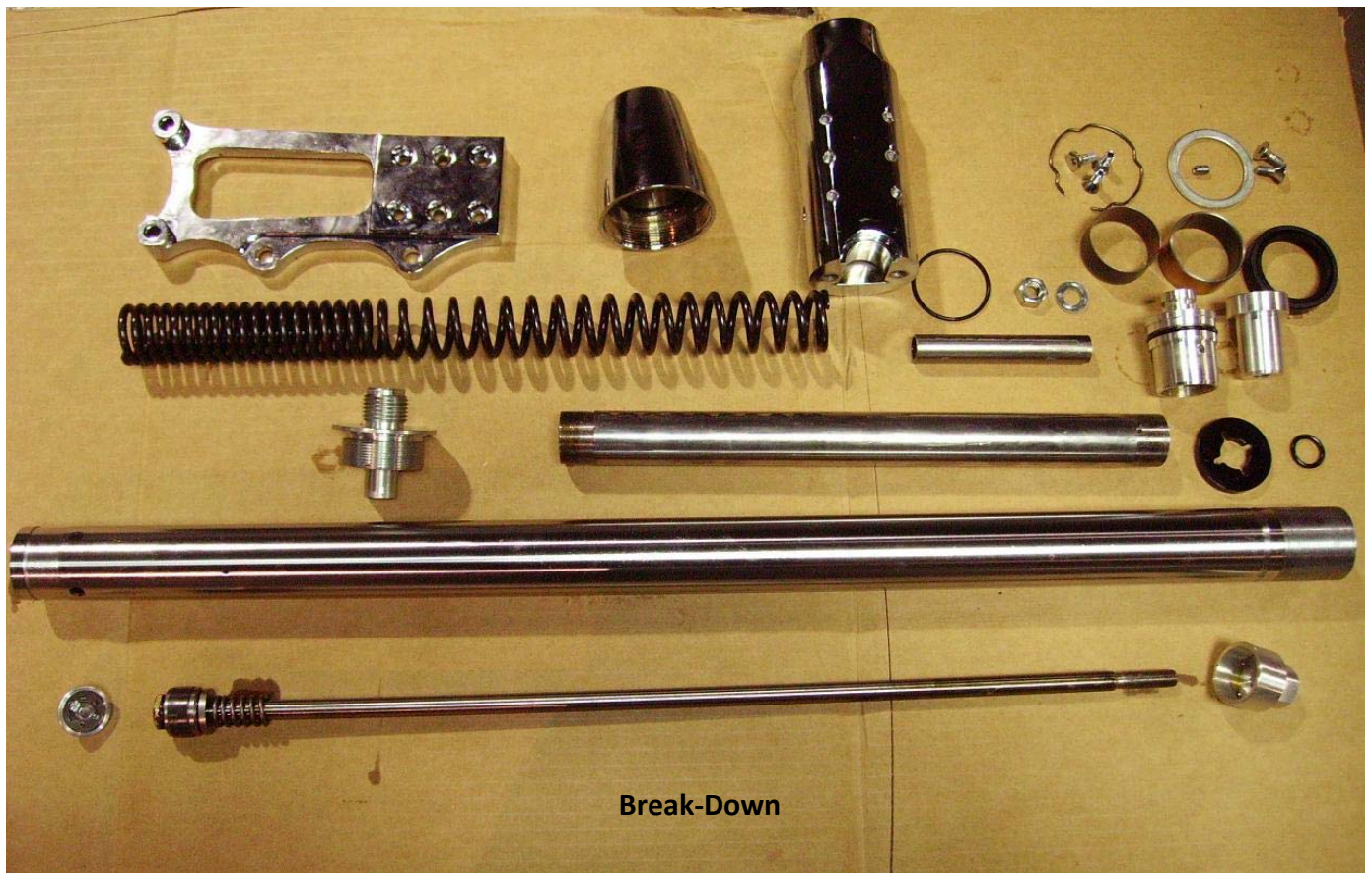
figure 31



figure 32

The damper valve shown in *figure 33* is pressed in place. This part can be removed by lightly tapping on it from inside the damper tube. Upon reassembly inspect all parts for damage, clean all threads, and lubricate all rubber.

Order parts from *Midwest Motorcycle Supply*. Follow reverse direction for assembly. Please read all noted sections for assembly.



WARNING

Serious injury, death and property damage can result from the improper use, control, alteration, or maintenance of motorcycles. The dealer and dealer's customers must exercise good judgment in the use, control, alteration, part selection and installation, and maintenance of motorcycles and motorcycle parts. Midwest Motorcycle Supply assumes no responsibility or liability of any nature for the failure of others to use good judgment.

ULTIMA® 58MM INVERTED FORK ASSEMBLIES

Item Number	Description	Part Number	Unit Quantity	Item Number	Description	Part Number	Unit Quantity
1	Complete Damper Assembly Std. Length	95-104	1	27	Fork Tube and Slider Set (Left), Std Length	95-158	1
	Complete Damper Assembly +2" Std. Length	95-200	1		Fork Tube and Slider Set (Right), Std Length	95-159	1
	Complete Damper Assembly +4" Std. Length	95-201	1		Fork Tube and Slider Set (Left), +2" Length	95-160	1
	Complete Damper Assembly +6" Std. Length	95-203	1		Fork Tube and Slider Set (Right), +2" Length	95-161	1
	Complete Damper Assembly +8" Std. Length	95-204	1		Fork Tube and Slider Set (Left), +4" Length	95-162	1
	Complete Damper Assembly +10" Std. Length	95-207	1		Fork Tube and Slider Set (Right), +4" Length	95-166	1
	Complete Damper Assembly +12" Std. Length	95-208	1		Fork Tube and Slider Set (Left), +6" Length	95-168	1
2	Damper Rod and Piston Assembly	95-106	1		Fork Tube and Slider Set (Right), +6" Length	95-169	1
3	41mm Inner Fork Tube Std. Length	95-109	1		Fork Tube and Slider Set (Left), +8" Length	95-175	1
	41mm Inner Fork Tube +2" Std. Length	95-210	1		Fork Tube and Slider Set (Right), +8" Length	95-179	1
	41mm Inner Fork Tube +4" Std. Length	95-213	1		Fork Tube and Slider Set (Left), +10" Length	95-180	1
	41mm Inner Fork Tube +6" Std. Length	95-214	1		Fork Tube and Slider Set (Right), +10" Length	95-181	1
	41mm Inner Fork Tube +8" Std. Length	95-224	1		Fork Tube and Slider Set (Left), +12" Length	95-188	1
	41mm Inner Fork Tube +10" Std. Length	95-225	1		Fork Tube and Slider Set (Right), +12" Length	95-189	1
	41mm Inner Fork Tube +12" Std. Length	95-231	1	28	Steering Lock Bracket (Optional)	95-256	1
4	Bushing Kit, Slider, Upper, Lower	27-217	2	29	Fasteners, Steering Lock	95-257	2
5	Spring, Fork	95-112	1	30	Nut and Washer, Triple Tree, 0 deg	95-191	1
6	Guide, Spring	95-118	1		Nut and Washer, Triple Tree, 5 deg, blind	95-611	1
7	Jam Nut	95-119	2	31	Set Screw, Triple Tree Shaft, 0 deg	95-192	2
8	Fasteners, Axle Clamp	95-123	4		Set Screw, Triple Tree Shaft, 5 deg blind	95-612	1
9	Axle Clamp, Left	95-124	1	32	Fasteners, Pinch Bolts and Washers,		
	Axle Clamp, Right	95-125	1		Fork Tubes, 0 deg	95-193	4
10	Lower Fork Unit, Right	95-128	1		Fasteners, Pinch Bolts and Washers,		
	Lower Fork Unit, Left	95-129	1		Fork Tubes, 5 deg blind	95-613	2
11	Fork Seal Appearance Cover	95-130	1	33	Damper Valve Assembly	95-194	2
12	Fork Rebuild Kit, Bushings and Seals, includes # 15,39,40	95-131	1	34	O-Ring	95-880	2
13	Fork Tube, Outer Std. Length	95-132	1	35	Retaining Clip, Fork Seal (OEM 45842-77)	95-195	2
	Fork Tube, Outer +2" Std. Length	95-234	1	36	Fork Seal	95-881	2
	Fork Tube, Outer +4" Std. Length	95-237	1	37	Spacer (OEM 45865-84)	95-197	2
	Fork Tube, Outer +6" Std. Length	95-239	1	38	Axle Assembly	32-4	1
	Fork Tube, Outer +8" Std. Length	95-242	1	39	O-Ring	95-882	2
	Fork Tube, Outer +10" Std. Length	95-243	1	40	O-Ring	95-883	2
	Fork Tube, Outer +12" Std. Length	95-251	1	41	Spacer (Used for non-standard lengths) +2"	95-263	2
14	Spacer, Damper Rod Alignment	95-134	2		Spacer (Used for non-standard lengths) +4"	95-266	2
15	Seal, Top Cap, O-ring	95-878	2		Spacer (Used for non-standard lengths) +6"	95-267	2
16	Top Cap, Fork	95-135	1		Spacer (Used for non-standard lengths) +8"	95-268	2
	Top Cap, Fork, blind trees	95-835	1		Spacer (Used for non-standard lengths) +10"	95-271	2
17	Set Screw	95-137	2		Spacer (Used for non-standard lengths) +12"	95-279	2
18	Set Screw	95-879	2				
19	Fender Bracket, Right	95-138	1				
	Fender Bracket, Right with Brake Mount (opt.)	117-157	1				
	Brake/Fender Bracket, Left	117-158	1				
20	Bracket Fastener Kit	95-614	8				
21	Axle Shaft	95-152	1				
22	Axle Spacer, Right	95-153	1				
23	Axle Spacer, Left	95-154	1				
24	Axle Nut	95-155	1				
25	Shaft, 0°, std Triple Tree/Headset	95-156	1				
	Shaft, 5°, blind Triple Tree/Headset	95-607	1				
26	Triple Tree Assembly, 0 degree	95-254	1				
	Triple Tree Assembly, 5 degree, Blind	95-157	1				

ULTIMA® 58MM INVERTED FORK ASSEMBLIES

