CUSTOM CYCLE ENGINEERING

CCE CARTRIDGE MANUAL

HARLEY 49MM FORKS

FEATURES

- ADJUSTABLE COMPRESSION DAMPENING AND PRELOAD ON LEFT FORK TOP CAP
- ADJUSTABLE REBOUND DAMPENING AND PRELOAD ON RIGHT FORK TOP CAP

* BIKES WITH COWING MAY REQUIRE MINOR TRIMING TO ALLOW ACCESS TO PRELOAD ADJUSTERS

- LARGE 30MM PISTON AND SHIMS FOR IMPROVED DAMPENING
- CHROME SILICONE MAIN SPRING RATE 11.3 N/mm
- CONVENIENT CARTRIDGES SIZED TO FIT ALL 49MM FORKS WITH NUMEROUS LENGTHS END CAPS

FORWARD

TO INSTALL CARTRIDGES FORK TUBES MUST BE REMOVED.
CCE HIGHLY ADVISES THAT CARTRIDGES BE INSTALLED BY A QUALIFIED PROFESSIONAL.
Removal of spring from tube is dangerous when top cap is removed. For DIY place rag over top cap while removing and hold down firmly on wrench as spring exerts tremendous pressure when released. Keep your face away from top cap at all times.

Next remove oil and all components from fork tubes and then unscrew fork tube from slider and remove **all** components from slider. **NOTE: Most models of fork tubes will contain a flow valve assembly that must be removed to allow installation of cartridge.** Carefully clean fork tubes and sliders before installing cartridge. **NOTE: CCE FORK TUBES ARE AVAILABLE WITH FLOW VALVE OR WITHOUT THE FLOW VALVE. Contact CCE for part numbers or go to website:** customcycleengineering.net

BEFORE INSTALLING CARTRIDGES IT IS HIGHLY ADVISED TO OBTAIN NEW FACTORY FORK BUSHINGS, OIL SEALS, DUST SEALS , SLIDER BOLTS, AND COPPER WASHERS.

Instructions for Flow Valve removal 1. Remove Fork Tube, drain fluid, and components within. 2. Remove Flow Valve Unit

Flow valve removal can be done in lathe or by grinding off the bottom of fork tube. Remove about .035" or only enough material from bottom of tube to release valve **PICTURE 2**

REMOVE COMPLETE VALVE AND ALL COMPONENTS. . **PICTURE 3**

2

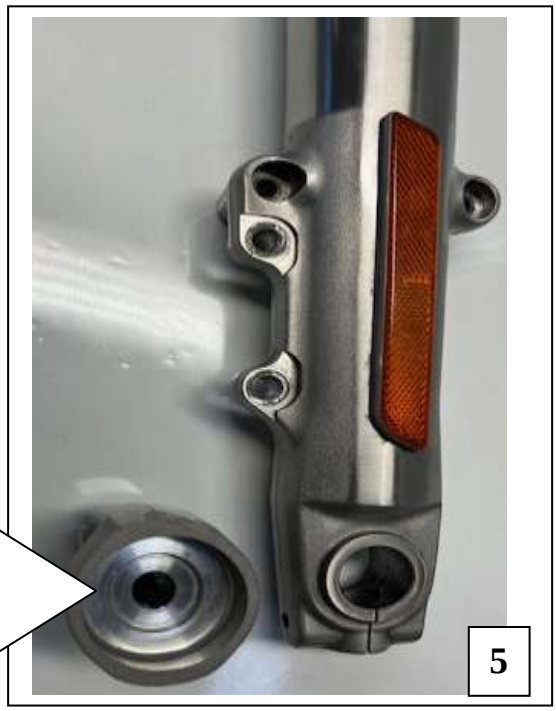
ALL ITEMS MUST BE REMOVED FROM FORK SLIDER. **MUST BE CLEAN PICTURE 4 & 5**

FLOW VALVE UNIT

3

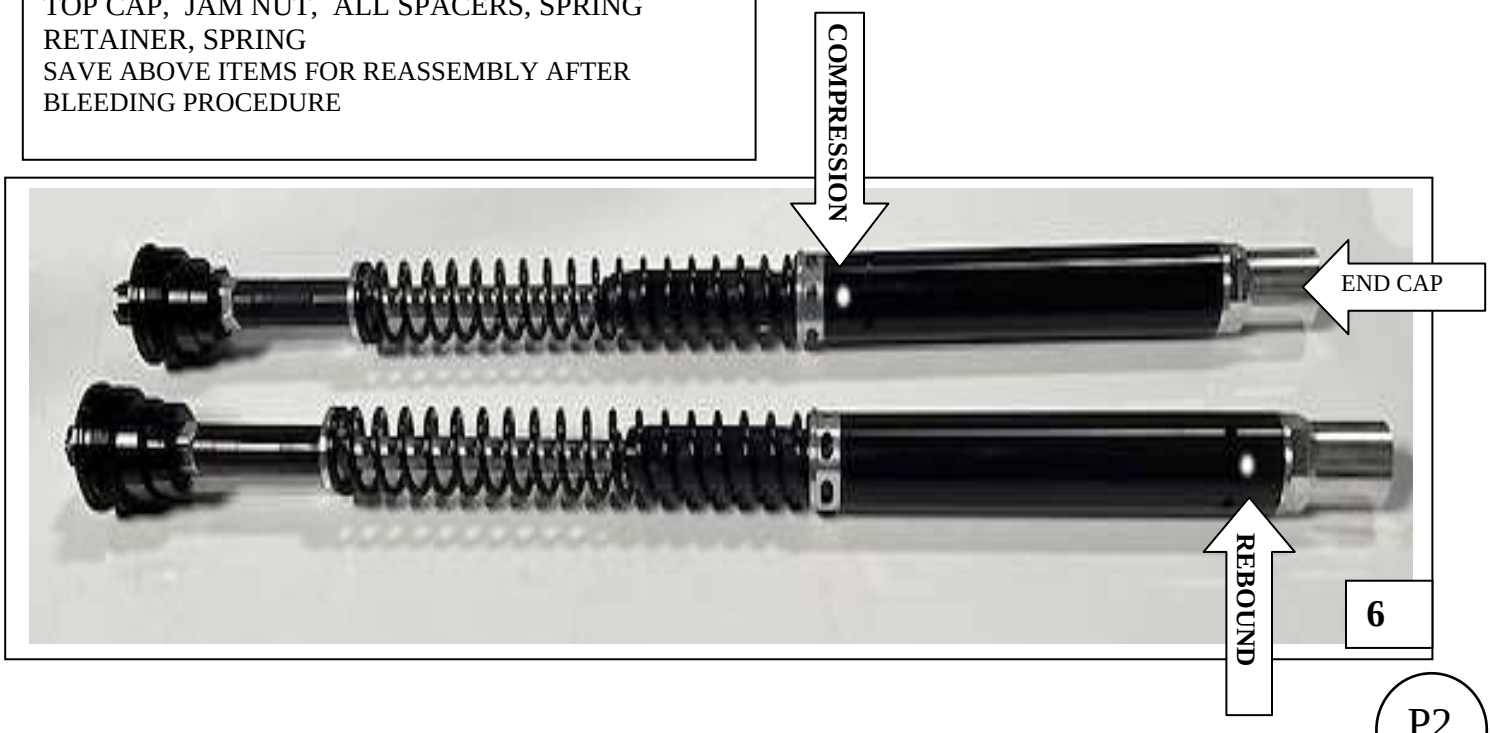
FLOW VALVES REMOVED PER PICTURE 4….NOTE: CCE FORK TUBES CAN BE PURCHASED WITH FLOW VALVE REMOVED EITHER SEPARATE OR WHEN IN A KIT WITH CCE CARTRIDGES.

4



INSTALL ONE COMPLETE CARTRIDGE AT A TIME. DO NOT MIX PARTS. COMPRESSION CARTRIDGE GOES IN LEFT FORK, REBOUND CARTRIDGE GOES IN RIGHT FORK. NOTE: THE COMPRESSION CARTRIDGE HAS THE VENT HOLES AT THE TOP OF THE CARTRIDGE TUBE. THE REBOUND CARTRIDGE HAS THE VENT HOLES AT THE BOTTOM OF THE CARTRIDGE TUBE. SEE ARROWS BELOW **PICTURE 6** **BE SURE END CAP IS PROPER LENGTH TO MATCH FORK TUBE LENGTH …END CAP INSCRIBED WITH LENGTH OF FORK TUBE**

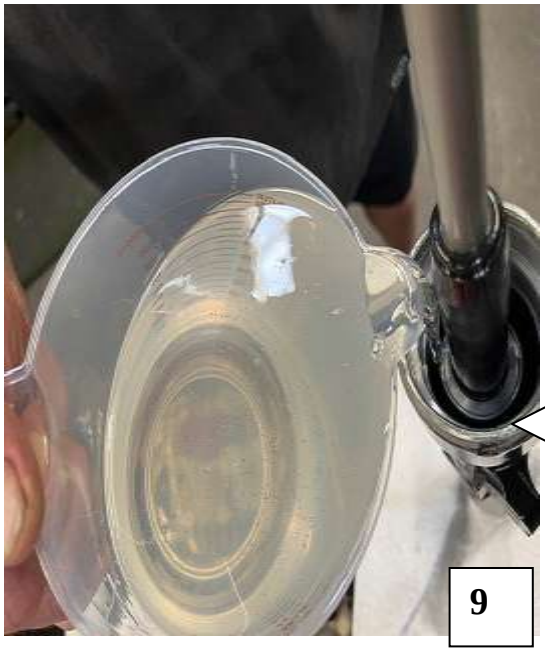
Temporarily remove the follow items from cartridge:
PICTURE 6
TOP CAP, JAM NUT, ALL SPACERS, SPRING RETAINER, SPRING
SAVE ABOVE ITEMS FOR REASSEMBLY AFTER BLEEDING PROCEDURE



DO NOT REMOVE **… DAMPING ROD, GUIDE TUBE , O RING, OR PLASTIC ANTI-BUCKLE SLEEVE**
PICTURE 7

Insert cartridge all the way into slider
PICTURE 8 NOTE: END CAP LENGTH MUST BE PROPER LENGTH TO MATCH WITH FORK TUBE LENGTH

Install
INSERT FACTORY M14 X 1.25 BOLT WITH **NEW COPPER WASHER** INTO SLIDER AND THREAD INTO CARTRIDGE END CAP AND TIGHTEN TO FACTORY TORQUE SPECS
……..
CARTRIDGE SHOULD BE SECURELY ATTACHED TO SLIDER TO PREVENT FLUID LEAKING



9

For riding with temp above 50 degrees F add 20wt fork oil into slider until oil reaches lower spring retainer. ADDIONAL OIL WILL BE ADDED AFTER FORK TUBE INSTALLED

PICTURE 9

10

BLEEDING STEP

SLOWLY PUMP GUIDE TUBE UP AND DOWN UNTIL ALL AIR BUBBLES ARE REMOVED FROM SLIDER …ALL TRAPPED AIR MUST BE REMOVED **PICTURE 10**

11

Reinstall: Spring…Upper spring retainer, all plastic spacers…and jam nut …
.....Push down on spring while threading the jam nut onto the guide tube ..hold guide tube while threading nut all the way down onto guide tube hand tight until hard stop Spring will be compressed about 1" for initial preload
PICTURE 11

12

PLACE BUSHING ONTO FORK TUBE THEN INSERT TUBE INTO SLIDER **PICTURE 12**

INSTALL NECESSARY REBUILD HARDWARE TO SLIDER …GUIDE BUSHING, SPACER OIL SEAL, RING, DUST SEAL, DUST CAP , ETC
PICTURE 13

13

14

O RING

SLIDER IS FULL OF OIL BUT NOW ADDITIONAL OIL IS REQUIRED IN THE FORK TUBE …MAKE SURE THE FORK IS ALL THE WAY DOWN BEFORE ADDING OIL.. ADD OIL UNTIL 6 INCHES +/- ½" FROM TOP OF TUBE ..BE SURE ANY AIR BUBBLES ARE REMOVED
PICTURE 14

15

BOTH PRELOAD ADJUSTERS TURN FULLY COUNTERCLOCKWISE

TURN PRELOAD ADJUSTER FULLY COUNTERCLOCKWISE BEFORE TIGHTENING TOP CAP ONTO GUIDE TUBE …ALSO TURN BRASS HYDRAULIC ADUSTER FULLY COUNTERCLOCKWISE PICTURE 15 &16

INSTALL TOP CAP …FASTEN ONTO GUIDE TUBE UNTIL AGAINST JAM NUT OF CARTRIDGE … TIGHTEN HAND TIGHT

PICTURE 15

16

BOTH HYDRAULIC ADJUSTERS MUST BE SET FULLY (OPEN) COUNTERCLOCKWISE BEFORE TIGHTENING TOP CAP ONTO FORK TO PREVENT DAMAGE TO NEEDLE VALVE PICTURE 16

17

BE SURE O RING IS ON EACH TOP CAP SEE PICTURE 15
LIFT TUBE AND INSTALL TOP CAP ..USE EITHER 1-3/16" BOX WRENCH OR ADJUSTABLE WRENCH AS SHOWN
TIGHTEN FIRMLY ABOUT 100 IN LBS
APPLY GREASE TO O RING AND THREADS OF TOP CAP
PICTURE 17

18

NOTE: SOME MODELS OF BIKES WILL NOT HAVE ENOUGH CLEARANCE FROM HANDLE BAR TO PRELOAD ADJUSTER WHEN IT IS EXTENDED FULLY ..TURN PRELOAD ADJUSTER 3 TURNS CLOCKWISE AND RETRY FITMENT… NOTE: BIKE IN PICTURE HAS GENEROUS CLEARANCE

PICTURE 18

FORWORD

CCE CARTRIGES PROVIDE NUMEROUS SUSPENSION SETTINGS TO CONFORM TO BIKE AND RIDER WEIGHT AS WELL AS RIDING PREFERENCES AND OTHER FACTORS SUCH AS ROAD CONDITIONS OR WEATHER.

SPRING PRELOAD ADJUSTMENT

The preload adjustment of spring should be made before the hydraulic adjustment to needle valve. CCE uses linear springs. Adjusting the preload does not affect the spring rate only the initial force to make it start compressing. Adjusting the preload will affect the front end height. The starting point of adjustment is fully counterclockwise (Softest) (Minimum spring preload) Adjust both compression side and rebound side as equal as possible. Adjustment is made on the 5/8" hexagonal adjuster on the top cap. Adjustment of 1 turn = 0.071" Adjust 3 turns CLOCKWISE to begin your test. From fully open the maximum preload adjustment is 7 turns clockwise = 0.500" . Use a 5/8" open end wrench or adjustable wrench to make adjustment. Clockwise adjustment gives firmer feel toward the bottom of travel. Dial both the Rebound side and the Compression side 3 full turns clockwise for initial test. After initial setting dial the adjuster only a small amount at a time to change feel.

Hydraulic Adjustment Rebound Side

Adjust rebound side first. Use a 5/32" Allen wrench to turn the brass adjuster on the right fork.The brass adjuster opens or closes a spring loaded tapered needle valve that is located within a bleed valve. A push rod also called a dampening rod inside the guide tube controls the spring loaded needle valve opening and closing. The needle valve is designed to control the flow of fluid in the system. First make sure brass the adjuster is fully open (Pic 16). Next turn the hydraulic adjuster clockwise 3 full turns. Next push up and down on the front forks to determine the speed of recovery from downward compression. Adjusting clockwise moves the tapered needle further into the (bleed valve) center hole to increase the damping which slows down the return of the fork. Adjusting counterclockwise reduces dampening which speeds up fork return. Make small adjustments ¼ turn at a time before each road test. If fork is harsh on bumps reduce rebound dampening.

Hydraulic Adjustment Compression Side

Adjust compression side next. Use a 5/32" Allen wrench to turn the brass adjuster on the left fork.. The brass adjuster opens or closes a spring loaded tapered needle valve that is located within a bleed valve. A push rod also called a dampening rod inside the guide tube controls the spring loaded needle valve opening and closing. The needle valve is designed to control the flow of fluid in the system. First make sure brass the adjuster is fully open (Pic 16). Next turn the hydraulic adjuster clockwise 3 full turns. Next push up and down on the front forks to determine the feel of downward stroke. Adjusting clockwise moves the tapered needle further into the (bleed valve) center hole to increase the dampening. Adjusting counterclockwise reduces dampening which speeds up fork compression. Make small adjustments ¼ turn at a time before each road test. If fork bottoms while braking increase preload or adjust compression side clockwise to increase dampening.