

MODEL C-COBRA SERIES CONVERTER

REPAIR KIT INSTRUCTIONS

Important: Any maintenance, service or repair should be performed by trained and experienced service technicians. Proper tools and equipment should be used to prevent injury to the servicing technician, property or system components. Service repairs should always be performed in a safe environment and the technician should always wear protective clothing to prevent injury.

The Form 101-2 Repair Kit instructions will provide the technician information to successfully repair the C-Cobra regulator vaporizer. Always inspect the major casting pieces for damage, corrosion or cracks before attempting a service repair. Be sure the repair kit part number you are using is correct for the regulator being serviced. Diaphragms are color coded and have different performance characteristics. The blue diaphragm material provides excellent high and low temperature durability with increased chemical resistance and is the only diaphragm used in the C-Cobra converter.



	WARNING
Do not use Teflon tape to seal any fuel fittings. Failure to follow this warning may cause the regulator to leak internally, possibly resulting in serious injury and/or property damage and may void any warranty coverage.	

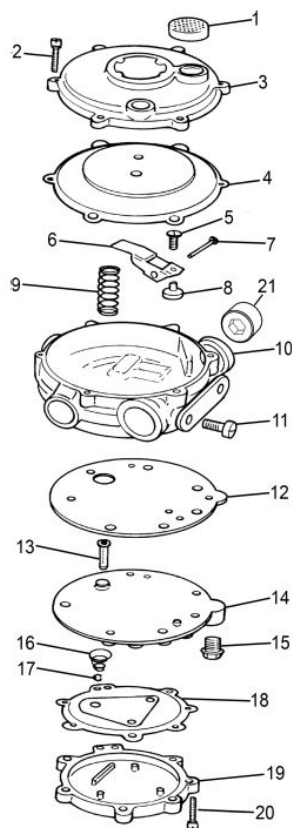
REPAIR KIT PART NUMBERS

Part#	Description
C-RK-COBRA	Repair Kit, Cobra

C-COBRA SERIES CONVERTER

COMPONENT PARTS

ITEM	PART#	DESCRIPTION
1	C-S7-4	Screen, atmospheric vent (C-P-COBRA)
2	C-S1-15265-003*	Screw, 8-32 x 7/8" Torx style (6)
3	C-C1-30344	Cover ass'y, secondary (C-P-COBRA)
	C-C1-15830-3	Cover ass'y, secondary (C-CB-30177)
4	C-AD1-27-4	Diaphragm, secondary, blue (C-P-COBRA)
	C-AD1-27-5*	Diaphragm, secondary, fluorosilicone (C-CB-30177)
5	C-S1-17460-001	Screw, 8-32 x 1/2" Torx style
6	C-L1-37*	Lever, secondary
7	C-P1-8	Pin, secondary fulcrum
8	C-S4-27*	Seat, secondary
9	C-S2-37	Spring, blue secondary (C-P-Cobra)
	C-S2-35-1	Spring, orange secondary (C-CB-30712)
10	C-AB1-15871 NSS	Body ass'y, w/jet Plug, vapor outlet
11	C-S1-5	Screw, 1/4-20 x 5/8" (2)
12	C-G1-150*	Gasket, body to body cover plate
13	C-P1-17799-001*	Pin, valve primary
14	C-P2-60	Plate, body cover
15	C-P3-13	Plug, 1/8 NPT, hex head
16	C-S2-144*	Spring, primary
17	C-R1-17931*	E-clip
18	C-AD1-46-5*	Diaphragm ass'y, primary
19	C-C1-93	Cover, primary
20	C-S1-15265-005*	Screw, 8-32 x 1-18" Torx style (7)



NSS=Not Serviced Separately

*Included in Repair Kit

REBUILD INSTRUCTIONS



1. Under normal conditions, installation of a complete C-RK-COBRA kit should be necessary only at the time of a major engine overhaul or when the converter has been out of service for an extended period of time. Each kit includes the necessary gaskets, diaphragms, seals and some replacement screws.



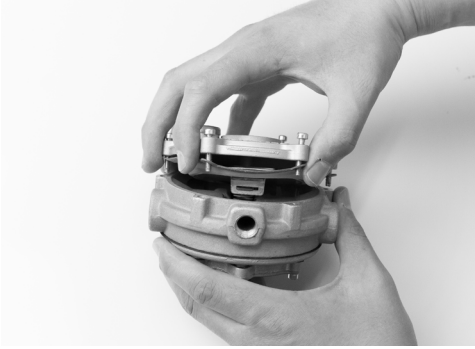
2. Remove the 6 screws (2) from the secondary cover assembly (3).

Note the type and size of the screws removed and be sure the same screws are used in the same locations during reassembly.

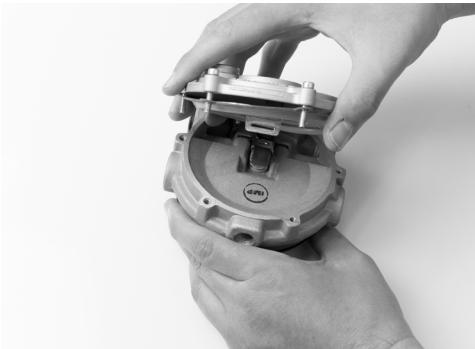
The repair kit may include additional screws to replace any screws found damaged.



3. Loosen the secondary cover by tapping around the circumference with a plastic screwdriver handle.



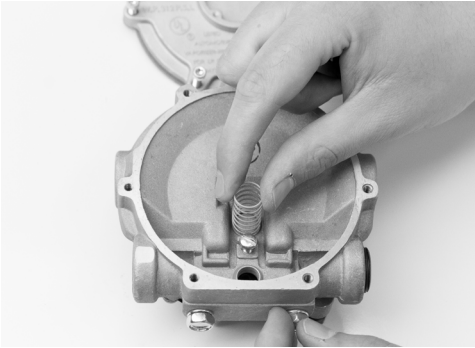
4. Remove the secondary cover (3) and secondary diaphragm (4) as a unit. Note the secondary lever protruding through the metal tab slot of the secondary diaphragm. Slide the cover and diaphragm forward to free the lever from the slotted tab of the diaphragm. Take care not to bend the lever.



5. This photo shows the secondary cover and diaphragm removed and their orientation to the secondary lever.



6. Remove the secondary lever fulcrum retaining screw (5).



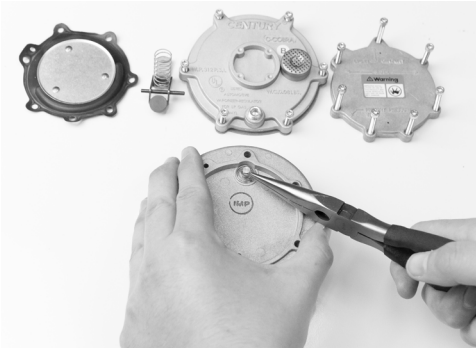
7. Remove the secondary lever (6) and fulcrum pin (7) and retain the fulcrum pin. Remove the secondary spring (9).



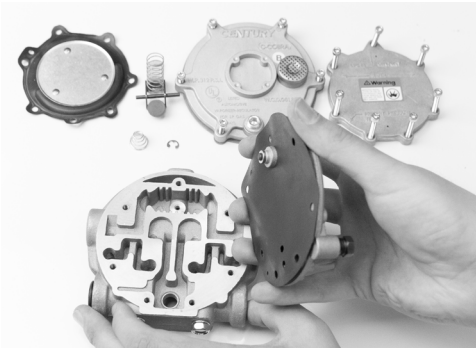
8. Turn the converter over. Remove the seven screws (20) and lift off the primary cover (19).



9. Remove the primary diaphragm (18).

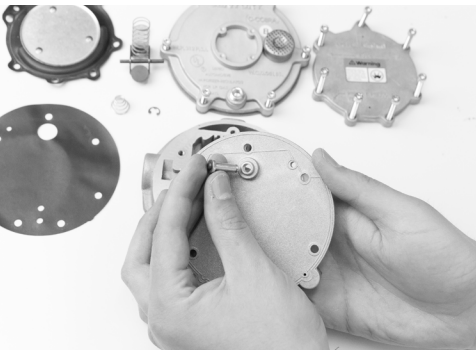


10. Remove the body cover plate (14) and gasket (12) from the body (10). Remove the "E" clip (17) from the primary valve pin (13). Remove the spring (16).



11. Turn the cover plate over and remove the primary valve pin (13). Remove the gasket (12) from the cover plate.

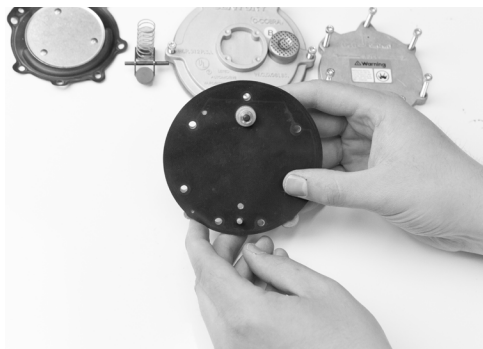
Clean covers, body and metal parts as necessary with a safety solvent as needed and allow to dry prior to reassembly. Do not use harsh solvents such as brake or carburetor cleaner on any of the non-metallic components as they will damage the material.



12. Insert the new primary valve pin (13) into the cover plate orifice from the top (converter body side) as shown.



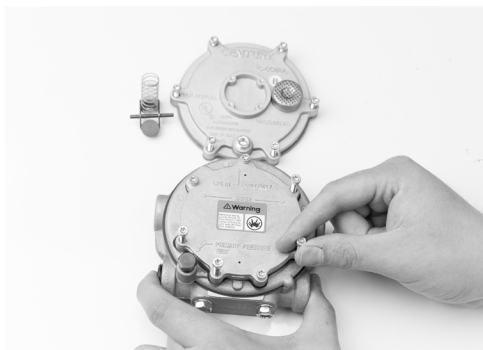
13. Holding the valve pin in place, turn the body cover plate over. Place the valve pin spring (16) over the valve pin with the larger diameter end of the spring resting against the plate. Compress the spring and secure it in place by installing the "E" ring (17) retaining clip to the valve.



14. Install a new gasket making sure to align the small holes in the gasket to the matching holes in the cover plate.



15. Set new primary diaphragm (18) from the kit on the converter body. Screw hole spacing prevents improper orientation of the diaphragm.



16. Carefully place the primary cover (19) over the diaphragm. Hand-thread the screws (20) through the cover and cover plate into the converter body.



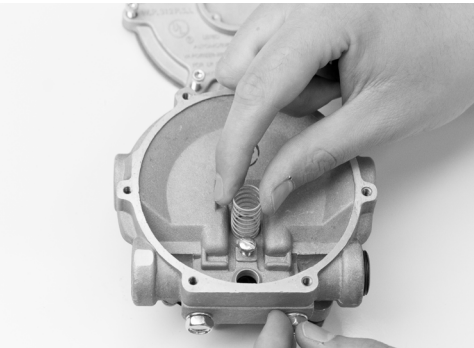
17. Tighten the screws (20) and torque to 22-28 in-lb. (2.5-3.2 Nm) using a crisscross pattern.



18. Push the nose of the new secondary seat (8) through the hole in the end of the new secondary lever (6).



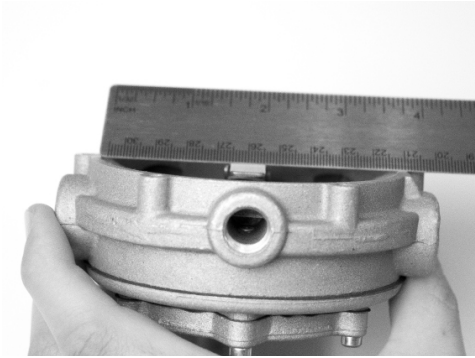
19. Assemble the secondary valve components removed during disassembly. Slide the fulcrum pin (7) through the holes in the secondary lever (6) as shown in the photo.



20. Set the secondary spring (9) in its seat on the converter body, then position the secondary lever and fulcrum pin assembly on top of the secondary spring (9). Push down until the fulcrum pin seats and hold in place.

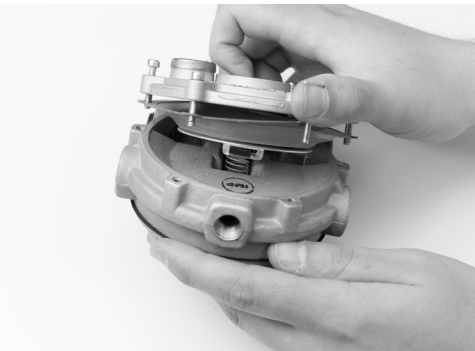


21. Insert screw (5). 22. Tighten screw to 22-28 in-lb. (2.5-3.2 Nm).



22. Check the secondary lever height. Using a straight edge, the end of the secondary lever should be $1/32''$ (0.794 mm) below the casting level.

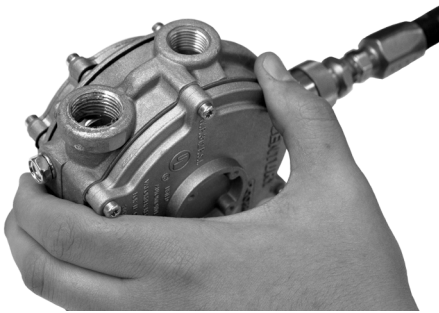
Note: If the lever must be bent, remove from the body, bend, reinstall and check height. Bending the lever while installed may result in damage to the seat.



23. Align the secondary diaphragm (4) to the secondary lever (6) as shown. The end of the lever must protrude through the tab slot on the bottom of the new diaphragm after installation. The screw hole spacing prevents improper positioning of secondary diaphragm. 24. Add the secondary cover (3) and install the previously removed screws (2).



24. Tighten the screws in a crisscross pattern and torque to 22-28 in-lb (2.5-3.2Nm) to complete the installation of the repair kit components.



25. Apply 100 psi of air pressure to the inlet side of the regulator and test for leaks. Draw a soap bubble across the regulator outlet to verify that no air is flowing through the outlet. If air escapes, the rebuild has failed and the regulator must be replaced. Actuate the primer button (found on early models) and the soap bubble should burst and air flow should be noted at the converter outlet. Use soap and/or a commercial leak detector solution

to inspect the gasket seals around the perimeter of the converter for leaks. If leaks are found, the regulator must be replaced. If no leaks are found, the regulator can be reinstalled and returned to service.

WARNING:
IMPROPER INSTALLATION OR USE OF THIS PRODUCT MAY
CAUSE SERIOUS INJURY AND/OR PROPERTY DAMAGE

SERVICE TECHNICIANS AND USERS

SHOULD CAREFULLY READ AND ABIDE BY THE PROVISIONS SET FORTH IN NATIONAL FIRE PROTECTION ASSOCIATION PAMPHLET #37 FOR STATIONARY ENGINES, #52 FOR CNG VEHICULAR FUEL SYSTEMS OR #58 FOR LPG SYSTEMS.

INSTALLERS

LPG INSTALLATIONS IN THE UNITED STATES MUST BE DONE IN ACCORDANCE WITH FEDERAL, STATE OR LOCAL LAW, WHICHEVER IS APPLICABLE AND NATIONAL FIRE PROTECTION ASSOCIATION PAMPHLET #58, STANDARD FOR STORAGE AND HANDLING OF LIQUEFIED PETROLEUM GASES TO THE EXTENT THESE STANDARDS ARE NOT IN VIOLATION WITH FEDERAL, STATE OR LOCAL LAW.

IN CANADA

REFER TO CAN/CGA PROPANE INSTALLATION CODES.

CNG INSTALLATIONS IN THE UNITED STATES

MUST BE DONE IN ACCORDANCE WITH FEDERAL, STATE OR LOCAL LAW AND NATIONAL FIRE PROTECTION ASSOCIATION PAMPHLET #52, COMPRESSED NATURAL GAS (CNG) VEHICULAR FUEL SYSTEMS TO THE EXTENT THESE STANDARDS ARE NOT IN VIOLATION WITH FEDERAL, STATE OR LOCAL LAW.

IN CANADA

REFER TO CAN/CGA CNG INSTALLATION CODES

LPG AND/OR NATURAL GAS INSTALLATIONS ON STATIONARY ENGINES

MUST BE DONE IN ACCORDANCE WITH FEDERAL, STATE OR LOCAL LAW AND NATIONAL FIRE PROTECTION ASSOCIATION PAMPHLET #37, STATIONARY COMBUSTION ENGINES AND GAS TURBINE ENGINES TO THE EXTENT THESE STANDARDS ARE NOT IN VIOLATION WITH FEDERAL, STATE OR LOCAL LAW. FAILURE TO ABIDE BY THE ABOVE WILL VOID ANY WARRANTY ON THE PRODUCTS AND MAY CAUSE SERIOUS INJURY OR PROPERTY DAMAGE.

DUE TO THE INHERENT DANGER OF GASEOUS FUELS THESE PRODUCTS SHOULD NOT BE INSTALLED OR USED BY PERSONS NOT KNOWLEDGEABLE OF THE HAZARDS ASSOCIATED WITH THE USE OF GASEOUS FUELS.