

General Service Bulletin (GSB):	Ear Clamp Removal and Installation Guide
GSB Overview:	For the proper removal and installation of an “ear clamp”, used on several areas of a vehicle.
NOTE: This information is not intended to replace or supersede any warranty, parts and service policy, Work Shop Manual (WSM) procedures or technical training or wiring diagram information.	

Ford Motor Company

Ear Clamp Removal and Installation Guide





Purpose

This bulletin is a supplement to the Online Workshop Manual procedures for removal and installation of an “ear clamp”, also known as a “omega clamp, crimp clamp, cinch clamp, Oetiker® clamp, PEX® clamp, SharkBite® clamp, Knipex® clamp” etc.

Outlined below will be examples of the proper and improper methods for removing and installing an “ear clamp”.

To help avoid repeat repairs, this bulletin was written with the demands of the technician in mind. Each topic covered in this bulletin includes three sections: “Concerns”, “Do’s and Don’ts” and “Pictures and Examples”.

- **Concerns**- Highlights areas of the clamp removal, positioning and installation procedures in which special care must be taken.
- **Do’s and Don’ts**- Highlights the correct way, and the incorrect way, in which an operation must be carried out.
- **Pictures and Examples**- Show in some instances, the correct method for performing a repair. Other times, the pictures demonstrate incorrect procedures used that can cause damage and/or failures if the Workshop Manual steps are not followed.

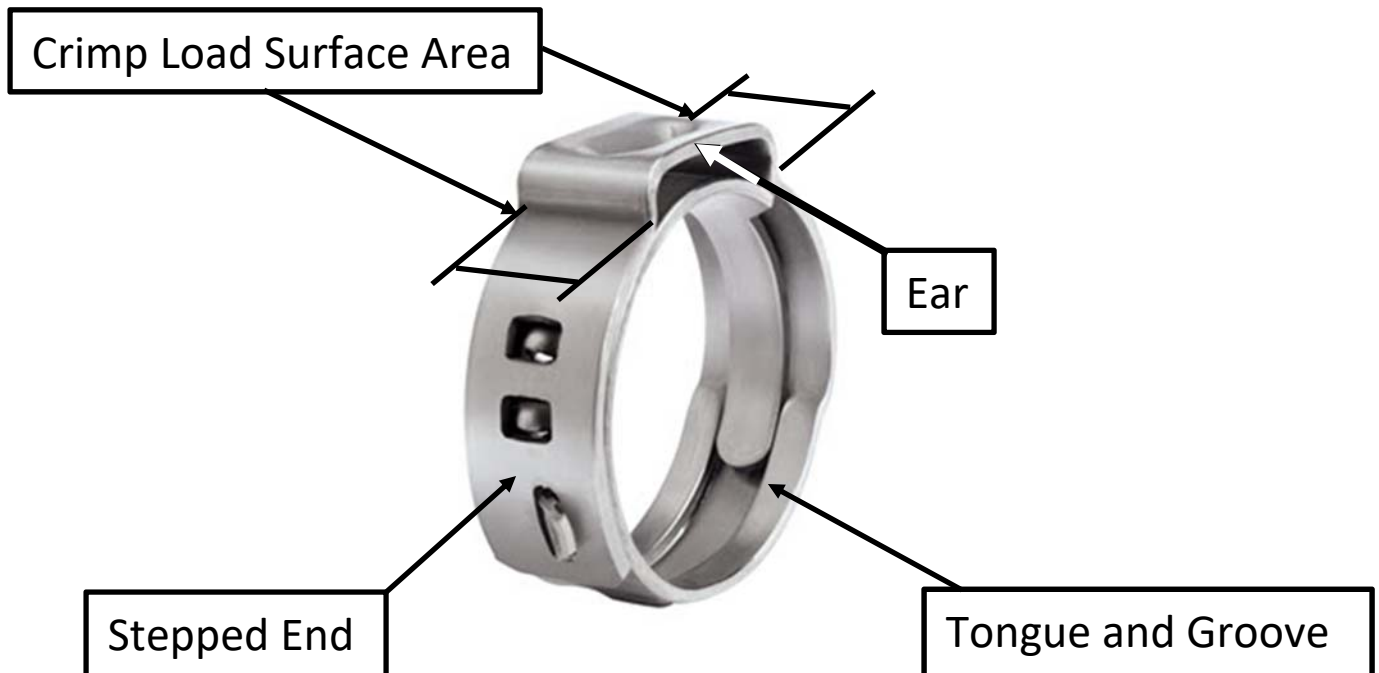
Finally, this GSB is meant to be a guide in assisting you with the repair. It should only be used as a supplement and must not replace the Workshop Manual for any reason. With this in mind, the items listed below will help you to “Fix It Right The First Time”!



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Components of an ear clamp





Topic: Removing an ear clamp

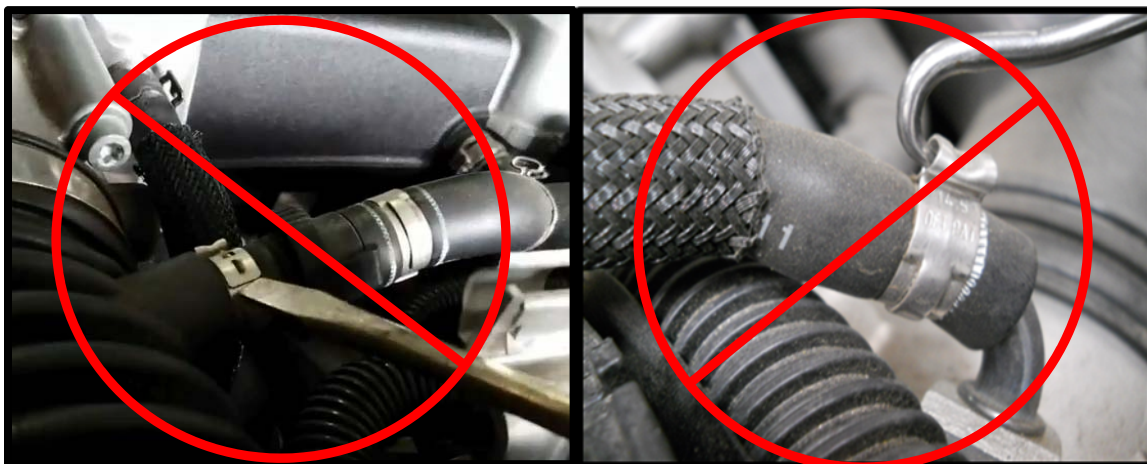
Concern: Incorrect removal of an ear clamp can damage the clamping surface and/or damage the part where the clamp force is applied.

- **Do:** Cut the top middle of the “ear” to release the pressure from the clamp (*reference Components of an ear clamp page 3*). Carefully spread the clamp apart enough to remove.
- **Don’t:** Pry or twist on the “ear”, “stepped end” or any part of the ear clamp (*reference Components of an ear clamp page 3*) during removal, component damage may occur.

Ex: Correct process for loosening an ear clamp



Ex: Incorrect process for loosening an ear clamp



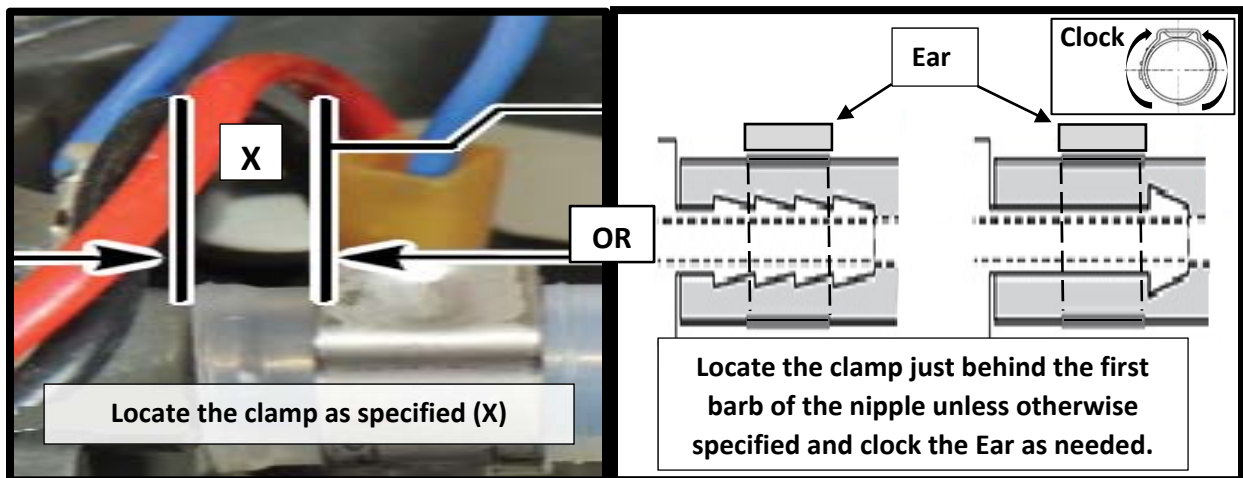


Topic: Positioning an ear clamp

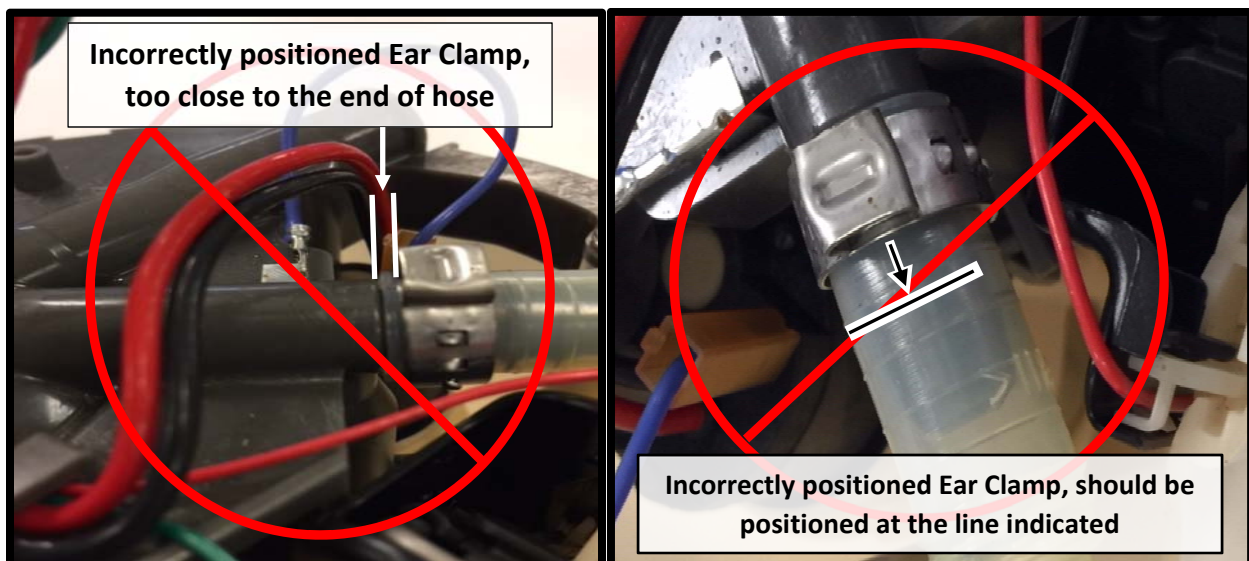
Concern: Incorrect positioning of the ear clamp prior to crimping can potentially result in a leak from the connection; this may be fluid, vacuum or air.

- **Do:** Position the ear clamp to the specified location prior to crimping.
 - *Proper positioning can be identified by a measurement, locating mark(s) on the crimping area, or a groove molded into the part being clamped. Additionally, some clamp ears may need to be “clocked” to a specific location for proper installation.*
- **Don't:** Crimp the ear clamp in a location other than the specified area or position.

Ex: Correct positioning of an ear clamp



Ex: Incorrect positioning of an ear clamp





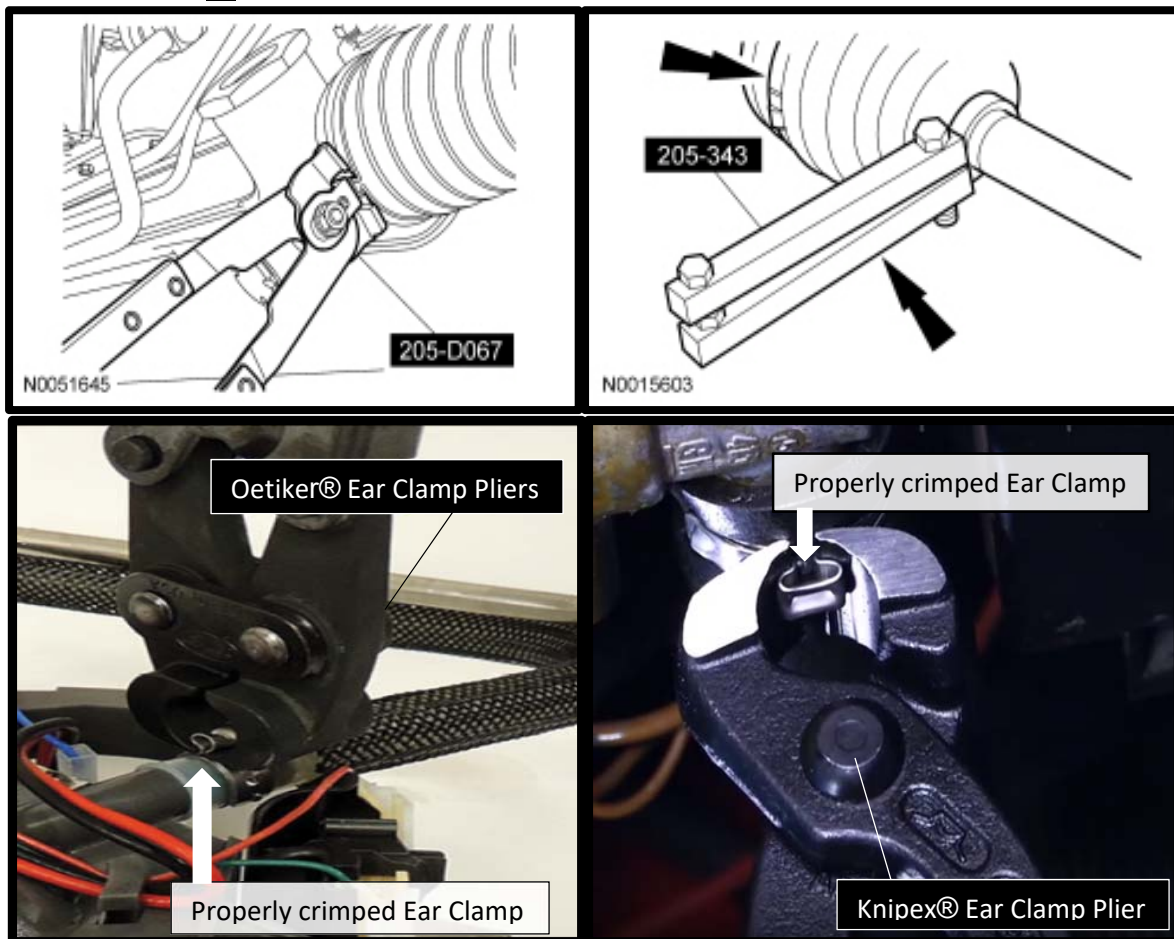
Topic: Crimping an ear clamp

Concern: Incorrectly crimping an ear clamp will result in unequal or insufficient clamping force applied across the crimp load surface area (*reference Components of an ear clamp page 3*). This unequal or insufficient clamp force may result in leakage from the connection.

- **Do:** Use the proper crimping tool for ear clamp applications and apply sufficient crimping force during installation.
 - *There are several essential special service tool's (ESST's) or equivalent aftermarket tools applicable for the operation.*

NOTE: Some ear clamps require a specific torque force during installation, make sure all directed torqueing specifications are applied when/where instructed.

Ex: Correct crimping tool usage/properly crimped ear clamp



Ex: Incorrect tool usage/improperly crimped ear clamp – [Page 7](#)



Topic: Crimping an ear clamp

- **Don't:** Use side cutter pliers or any other tool not specified for ear clamp applications as unequal or insufficient clamp force may result.

Ex: Incorrect tool usage/improperly crimped ear clamp

