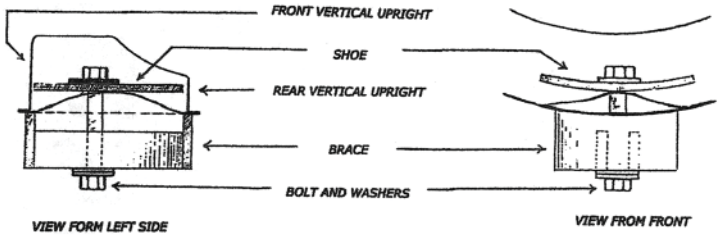
PARTS

Front Crossmember Rescue for 1963-82 Corvettes

Tool specifically designed for removing the dent commonly found in the front crossmember of 1963-82 Corvettes.

Please read and understand all instructions. When using this tool make sure car is properly supported and secured from rolling. Use eye protection when using this tool.

NOTE: This tool is capable of generating significant force. It is the tool user's judgment that determines how much force can be applied to the cross-member. Using more force than necessary to remove the dent could cause damage to the crossmember and/or the tool to fail, possibly resulting in injury.



INSTRUCTIONS FOR USE

No two front crossmember dents are the same. The depth and shape of the dents will vary from car to car. Given this fact, the tool user will need to accommodate for this. These instructions give basic guidelines to follow.

Clean front crossmember by removing all grease and debris that could interfere with the function of the tool. Reach in through the spring pocket with a long screw driver or similar object and dislodge any grease and debris that could interfere with the function of the shoe. Use compressed air or high pressure water to finish removing the dislodged grease and debris.

INSTALLING TOOL

Following the service manual procedure, remove the left or right coil spring and install the shoe through the coil spring pocket aligning hole in shoe with the large hole in the crossmember. Place brace on outside of front crossmember. Place two 5/8" flat washers on 5/8" bolt and thread into shoe through the brake and crossmember. Check to make sure brace will push on vertical section of the crossmember.

Start reducing the dent by tightening the 5/8" bolt. While reducing the dent, watch the crossmember for any distortion. In general, the dent can be pulled out nearly flat to the flange of the crossmember. Use a straight edge to monitor progress.

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After the dent has been pulled nearly flat, a faint ridge may be found protruding outward, outlining the original dent. This can be visualized or located with a straight edge. With the tool in place, reduce the ridge with a medium size ball peen hammer to its normal contour. Do not over work the steel. Retighten the 5/8" bolt as necessary to maintain tension.

Remove the tool. The dent should be reduced except for a slight concavity.

Study the dent. Attach shims to the face of the shoe corresponding with the deepest area of the dent (shims have been provided for this purpose). Match the shims to the size of the dent. The shims can be stacked as needed for greater thickness. NOTE: Shims can be attached to the face of the shoe with masking tape or similar and only need to be held in place long enough to install the tool.

Install the tool and continue reducing the dent by tightening the 5/8" bolt while observing the front crossmember. Repeat this process while changing the positions of the shims until the dent is removed. Use a straight edge to monitor progress. NOTE: Typically, the dent will need to be pulled slightly beyond the normal contour of the crossmember for it to remain in that position.

If high spots develop, install the tool without the shims and work the surface flat with a ball peen hammer. Use a straight edge to monitor progress. Do not over work the steel.

Given the diversity of crossmember dents, it may be necessary to improvise shims and/or modify the ones included with the tool. Shims can be retrieved by hand or with a mechanics telescoping magnetic stick or similar improvised device.

USING TORCH TO ASSIST IN REMOVAL OF DENT

DO NOT use a torch on any part of the car's front crossmember unless the car body, engine and all related hardware are removed from the car frame. Using a torch for removal of dent is only recommended for use on bare frames (body-off restoration) and by professionals that are familiar with using a torch and working with extremely hot steel. The front crossmember must be free of grease and debris both inside and out. Any grease or oil remaining inside or around the crossmember will catch fire and burn, potentially causing injury or damage. Observe all safety precautions associated with using a torch.

1) Install the tool as described above, making sure the brace supports are positioned under the vertical uprights of the top half of the crossmember (see illustration). NOTE: Having the brace too far forward or too far back could cause the crossmember flange to distort as the tool is tightened.
2) Start by heating the area in the deepest part of the dent. DO NOT APPLY FLAME DIRECTLY TO THE TOOL. As the steel inside the dent approaches a dull red color, remove the torch and begin tightening the 5/8" bolt. The bolt should tighten fairly easily. Stop tightening as it becomes more difficult to turn the bolt.
3) Reapply heat further away from the center of the dent, working in a circular pattern. As the steel approaches a dull red color, remove the torch and begin tightening the bolt. Stop tightening as it becomes more difficult to turn the bolt. Use a straight edge to monitor progress. Repeat this process until the dent is removed.
4) Allow the tool and front crossmember to cool completely before removing tool.

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